

ENVIRONMENTAL ASSESSMENT

ANTI-TERRORISM / FORCE PROTECTION GRAND FORKS AFB, NORTH DAKOTA



U.S. AIR FORCE



**DEPARTMENT OF THE AIR FORCE
AIR MOBILITY COMMAND
GRAND FORKS, NORTH DAKOTA**

SEPTEMBER 2003

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14. ABSTRACT Headquarters, Air Mobility Command (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. Under the Proposed Action, safety enhancements at the Main Gate would include construction of an overhead canopy/ID check station/gatehouse. In addition, a vehicle inspection facility and visitor parking would be constructed. Base entry traffic calming roadway reconfigurations for Main Gate entry/departure road would also be constructed. This project includes adding curves to the road. At the Commercial (south) Gate construction would involve an Inspection Facility to include two drive-through bays. Under the No Action Alternative, AMC would continue to operate its bases with existing force protection measures that are inadequate and do not meet Federal Highway Administration (FHWA) American Association of State Highway and Transportation Officials (AASHTO), AMC, and Grand Forks AFB requirements. Resources considered in the impact analysis are: air quality noise; hazardous materials and wastes; water resources; biological resources; land use infrastructure and utilities; and environmental management. No significant impacts would result from implementation of the Proposed Action or the No Action Alternative.					
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FINDING OF NO SIGNIFICANT IMPACT
ANTI-TERRORISM / FORCE PROTECTION
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

AGENCY

Department of the Air Force, Headquarters (HQ), Air Mobility Command (AMC), Grand Forks Air Force Base (AFB), North Dakota.

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.

PROPOSED ACTION

The Air Mobility Command (AMC), the command under which Grand Forks 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 Grand Forks 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 Grand Forks AFB. To correct deficiencies, Grand Forks AFB will construct and operate the improved Anti-Terrorism/Force Protection (AT/FP) measures recommended in the 2002 study at two existing Entry Control Facilities (ECF), the Main Gate and the Commercial (South) Gate.

NO ACTION ALTERNATIVE

The Air Force Environmental Impact Analysis Process (EIAP) (32 Code of Federal Regulations 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. Grand Forks AFB will continue to operate its ECFs with existing force protection measures.

SUMMARY OF FINDINGS

Pursuant to guidance from the National Environmental Policy Act (NEPA), 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 constructing and operating ECFs that incorporate AT/FP features. The EA, which supports this Finding of No Significant Impact (FONSI), evaluated the Proposed Action and No Action Alternative.

EVALUATION OF THE PROPOSED ACTION, GRAND FORKS AFB

Air Quality. The greatest increase in emissions will be carbon monoxide (CO) (2.76 tons) from construction and demolition activities, equating to 0.01 percent of the CO emissions within Grand Forks County. The emissions will be temporary, fall off rapidly with distance from the construction sites, and will last only as long as the construction activities. 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.

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.

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.

Biological Resources. Construction activities will occur within developed, maintained areas with extant, highly modified and disturbed landscape, and will not substantially change habitat for plant or animal species. No endangered, threatened, or special status species are documented in the construction areas. No activities will occur within a wetland.

Land Use. Construction and operation of the gates is consistent with the Base land use plan.

Infrastructure and Utilities. The proposed projects will occur on areas where impervious surface already exists. Thus, the volume of storm water runoff will not increase significantly above the existing conditions. About 88 tons of construction debris would be generated by the project. However, the exact amount that will be disposed in a landfill is unknown because the contractor will recycle material to the maximum extent practicable. Any traffic increases during construction will be temporary. The gates are designed to be more efficient, resulting in improved traffic flow after the project is completed.

Environmental Management. Use of existing Air Force and Base directives will ensure the Base achieves its pollution prevention goals for hazardous materials, hazardous wastes, and conserving energy. Geologic features will not be changed by facilities construction. Project activity will occur within areas in which the soils were previously disturbed.

EVALUATION OF THE NO ACTION ALTERNATIVE

No significant impacts occur from the existing activities.

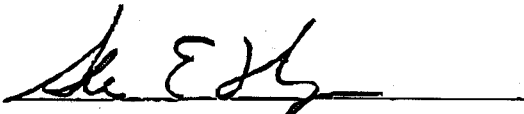
ENVIRONMENTAL JUSTICE

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 this EA, I conclude that implementation of either the Proposed Action will not have a significant impact either by itself or when considering cumulative impacts. Accordingly, requirements of the NEPA, regulations promulgated by the Council on Environmental Quality, and 32 CFR 989 are fulfilled and an environmental impact statement is not required.



STEVEN E. WAYNE, Col, USAF
Environmental Protection Committee Chairman
Grand Forks AFB, ND

10 SEP 03

Date

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GRAND FORKS AIR FORCE BASE, NORTH DAKOTA**

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SEPTEMBER 2003

COVER SHEET
ENVIRONMENTAL ASSESSMENT
ANTI-TERRORISM / FORCE PROTECTION
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

Responsible Agency: Department of the Air Force, Air Mobility Command (AMC), Grand Forks Air Force Base (AFB), North Dakota.

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

Written comments and inquiries regarding this document should be directed to: Heidi Durako, 319th CES/CEVA, 525 Tuskegee Airmen Blvd., Grand Forks AFB, ND 58205-6434), 701-747-4774, email: heidi.durako@grandforks.af.mil.

Report Designation: Environmental Assessment

Abstract: Headquarters, Air Mobility Command (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. Under the Proposed Action, safety enhancements at the Main Gate would include construction of an overhead canopy/ID check station/gatehouse. In addition, a vehicle inspection facility and visitor parking would be constructed. Base entry traffic calming roadway reconfigurations for Main Gate entry/departure road would also be constructed. This project includes adding curves to the road. At the Commercial (south) Gate, construction would involve an Inspection Facility to include two drive-through bays. Under the No Action Alternative, AMC would continue to operate its bases with existing force protection measures that are inadequate and do not meet Federal Highway Administration (FHWA), American Association of State Highway and Transportation Officials (AASHTO), AMC, and Grand Forks AFB requirements. Resources considered in the impact analysis are: air quality; noise; hazardous materials and wastes; water resources; biological resources; land use; infrastructure and utilities; and environmental management. No significant impacts would result from implementation of the Proposed Action or the No Action Alternative.

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ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	Micrograms per cubic meter
319 CES	319th Civil Engineering Squadron
319 CES/CEV	319th Civil Engineering Squadron/Environmental Flight
319 MSG	319th Mission Support Group
AAM	Annual arithmetic mean
AASHTO	American Association of State Highway and Transportation Officials
ACP	Architectural Compatibility Plan
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
ANSI	American National Standards Institute
APZ	Accident potential zone
AQCR	Air Quality Control Region
ARW	Air Refueling Wing
AT/FP	Anti-Terrorism/Force Protection
Bldg	Building
BMP	Best management practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERL	Civilian Environmental Research Laboratory
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO ₂	Carbon dioxide
dB	Decibel
dBA	A-weighted decibel
DNL	Day –Night average sound Level
DoD	Department of Defense
EA	Environmental Assessment
ECF	Entry Control Facility
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FICUN	Federal Interagency Committee on Urban Noise
FONSI	Finding of No Significant Impact
FP	Force Protection
FPCON	Force Protection Conditions
ft	feet
FY	Fiscal year
H ₂ S	Hydrogen sulfide
HAZMART	Hazardous Materials Pharmacy Program

Hazmat	Hazardous Materials
HQ	Headquarters
ID	identification
IRP	Installation Restoration Program
lb	pound(s)
lbs/ft ³	Pounds per Square Feet
Lp	Equivalent sound pressure
MAP	Management action plan
mg/L	Milligrams per liter
N ₂ O	Nitrous oxide
NAAQS	National ambient air quality standards
NAS	National Academy of Science
NDAAQS	North Dakota ambient air quality standards
NDAC	North Dakota Administrative Code
NDDH	North Dakota Department of Health
NDGS	North Dakota Geological Survey
NEPA	National Environmental Policy Act
NLR	Noise Level Reduction
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NRHP	National Register of Historic Places
O ₃	Ozone
ODS	Ozone depleting substance
P2	Pollution Prevention
Pb	Lead
PM ₁₀	Particulate Matter less than or equal to 10 microns
PM _{2.5}	Particulate Matter less than or equal to 2.5 microns
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxides
SWPPP	Storm Water Pollution Protection Plan
tpy	tons per year
TSP	Total Suspended Particulates
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
VOC	Volatile Organic Compound

CHAPTER 1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

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

1.1 INTRODUCTION

The Air Force (AF) has a requirement to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Grand Forks Air Force Base (AFB), North Dakota. To meet these requirements, the AF is proposing to implement structural and operational modifications along the perimeter and at entry control facilities (ECF) at Grand Forks AFB. Figure 1-1 shows the location of Grand Forks AFB. It is estimated that activities associated with the Proposed Action would begin in early 2004.

1.2 NEED FOR THE ACTION

The 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 ACTION

The objective of the action is to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Grand Forks AFB. The AF proposes to construct physical improvements to process visitors and commercial vehicles, as well as implement operational modifications at the perimeter and at Grand Forks 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 AF Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations Sections 1500-1508) and 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), 15 Jul 99, and amended 28 Mar 01. 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 (FONSI) 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.

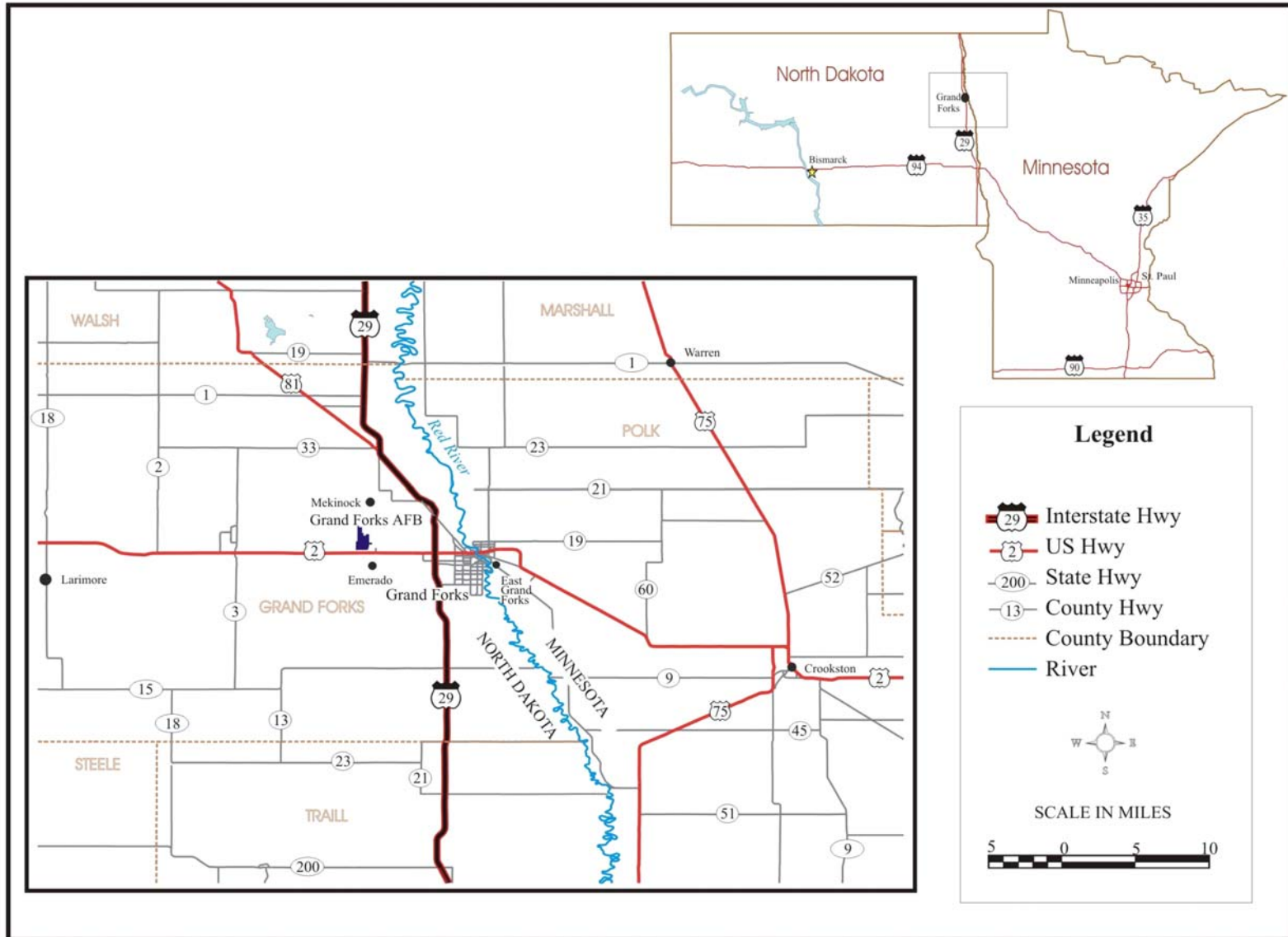
This EA assesses the proposed construction and operational aspects of the proposed anti-terrorism/force protection (AT/FP) measures at Grand Forks AFB, as well as the No Action Alternative. This EA identifies, describes, and evaluates the potential environmental impacts that may result from implementation of the Proposed Action as well as possible cumulative impacts from other reasonably foreseeable actions planned for the Base. This EA also identifies 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 regional overview. Finally, this EA identifies mitigation measures to prevent or minimize environmental impacts, if required.

The following biophysical resources are assessed in the EA: air quality; noise; hazardous materials and wastes; water resources; biological resources; land use; infrastructure and utilities; and environmental management. 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.

Although Grand Forks AFB has Installation Restoration Program (IRP) sites associated contamination remediation or investigation of past disposal sites, none of the sites occur within or adjacent to the proposed project sites. Therefore, no IRP impacts would be anticipated and the IRP is not assessed in this EA.

Figure 1-1 Location and Vicinity of Grand Forks AFB



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All the Proposed Action activities would occur on areas of Grand Forks AFB that are developed, maintained areas with a highly modified and disturbed landscape. 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. There are no wetlands or regulatory floodplains near any of the project sites. Thus, no adverse effects would be anticipated to threatened, endangered, or special status species, wetlands or regulatory floodplains. For these reasons, these elements, which are normally discussed in biological resources, are not assessed in this EA.

The AF conducted an inventory of Grand Forks AFB in 1996 to identify Cold War resources important to the Base's history. The one building identified in the inventory is not near the project sites (United States Air Force 2000d). Two archaeological surveys identified six archaeological sites and six isolated find spots on Grand Forks AFB. None of the sites are eligible for the National Register of Historical Places (NRHP) (United States Air Force 2000d). There is no evidence on the Base of Native American burial grounds or other culturally sensitive areas. However, if any suspected archaeological sites are encountered during a project, the contractor must protect the site and report the discovery to the government. 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.

There would be no change in the number of personnel authorizations at Grand Forks AFB as a result of the proposed activities. Therefore, there would be no long-term change from the current levels in water consumption or wastewater generation. For these reasons, no water or wastewater system impacts would be anticipated and the resources, which are typically included in infrastructure and utilities, are not assessed in this EA.

There would be no change in the number of personnel authorizations at Grand Forks 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 Grand Forks, North Dakota 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 local economy from the proposed construction activities. However, these benefits would end when the projects are completed. For these reasons, socioeconomic resources are not assessed in detail in this EA.

Demolition of the existing gate house would occur under the proposed activities. Because of the age of this facility, it is not anticipated that asbestos containing materials and lead-based paint would be encountered. The one new facility that would be constructed under the proposed activities would be constructed without either of these materials. For these reasons, asbestos and lead-based paint, which are typically included in hazardous materials and wastes, are not assessed in this EA.

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 would be anticipated.

Baseline conditions to be used for environmental evaluation in the EA are assumed to be Fiscal Year (FY) 2002. However, if FY02 data are not available, the most recent information will be 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 either action would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to ensure compliance with Clean Water Act requirements to ensure water quality is not degraded. The project also would be coordinated with the U.S. Fish and Wildlife Service.

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; objective for the action; scope of the environmental review; presentation of the applicable regulatory requirements; and the organization of the EA.

Chapter 2 Has 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; summarizes the environmental impacts for all alternatives; and identifies the preferred alternative.

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

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 Grand Forks AFB; a comparison of environmental effects; and identification of the preferred alternative.

2.1 INTRODUCTION

The Air Mobility Command (AMC) has responsibility for airlift 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 a force protection condition (FPCON) 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 and ECFs.

In 2002, a traffic engineering study of gate security, safety and capacity was conducted for the Base by the Military Traffic Management Command Transportation Engineering Agency and Gannett Fleming (United States Air Force 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 Grand Forks AFB. The key design guidance for the proposed improvements were 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
- Grand Forks AFB Architectural Compatibility Plan (ACP).

The 2002 traffic engineering study provided:

- Development plans for each of the gates;
- 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 AF identified selection criteria to develop alternatives to implement the recommendations from the plan. The following summarizes the AF selection criteria for improving force protection measures on Grand Forks AFB:

- Any alternative must meet the requirements identified in FHWA, AASHTO, AMC and Grand Forks AFB design guidance (Subchapter 2.1).
- Force protection improvements must result in improved gate capacity and traffic flows, particularly for processing of 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 entry points.

2.3 ALTERNATIVES CONSIDERED, INCLUDING THE NO ACTION ALTERNATIVE

Using the criteria in Subchapter 2.2, the AF developed three potential alternatives, including the No Action Alternative, for providing force protection improvements at Grand Forks AFB. The following sections summarize the alternatives consideration process.

2.3.1 AT/FP Alternative (Proposed Action)

Under this alternative, the AF would implement each of the recommendations identified in the 2002 Traffic Engineering Study. This would result in physical improvements to each of the ECFs and perimeter at Grand Forks AFB.

2.3.2 Alternative Action

One potential alternative was initially considered. Under this alternative, improvements would be made to one or the other of the gates. This alternative was eliminated from further consideration because this alternative would not meet the necessary force protection requirements.

2.3.3 No Action Alternative

The AF 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 Grand Forks AFB requirements described in Subchapter 2.1.

2.4 DESCRIPTION OF PROPOSED ALTERNATIVES

2.4.1 Proposed Action

The AF would construct and operate improved AT/FP measures identified in the 2002 Traffic Engineering Study for Grand Forks AFB. The Proposed Action would begin in FY03 with facility construction projects and be complete in FY05.

The following paragraphs briefly describe the proposed gate operation for Grand Forks AFB.

Main Gate. A new Gatehouse would be constructed at the Main Gate, which would operate with two inbound lanes and two inspection lanes. During FPCON Bravo+ conditions, vehicles entering this gate would be checked for decals and passes. The gate would operate 24 hours per day.

Commercial (South) Gate. The Commercial Gate would operate with one inbound lane and two inspection bays. During FPCON Bravo+ conditions, vehicles entering this gate would be checked for decals and passes. Gate operation would be less than the current 24 hours a day, with adjusted hours based on traffic volume and the availability of security forces personnel.

2.4.1.1 Main Gate Improvements

The short term recommendations for the Main Gate consist of safety enhancements that include constructing an overhead canopy/identification (ID) check station/gatehouse. A two-lane canopy with four ID check stations would be provided, including bulletproof glass, utilities, and pavement for lane additions.

In addition, a vehicle inspection facility and visitor parking would be constructed at the Main Gate. This project includes all construction, demolition, pavements, utilities, lighting and site preparation work needed. The proposed facility would have two drive-through bays, underground inspection pits, overhead doors, a driver waiting area, bathroom, and storage for canines and equipment, as well as an approximate 16-space parking lot with lighting and landscaping.

Base entry traffic calming roadway reconfigurations for the Main Gate entry/departure road also would be constructed. This project includes adding curves to the road.

2.4.1.2 Commercial (South) Gate Improvements

Construction at the Commercial (South) gate would involve an Inspection Facility to include two drive-through bays, underground inspection pits, overhead doors, a driver waiting area, administrative office, bathroom, support area, and storage for canines and equipment, as well as pavements, vehicle staging area, lighting, landscaping, drainage and utilities to the facility.

2.4.1.3 Construction Projects

The AF would accomplish five separate construction projects to support the AT/FP project at Grand Forks AFB. Table 2-1 lists the size of the project in square feet and Figures 2-1 and 2-2 show the locations of the projects.

Table 2-1 Construction Project Information, Proposed Action

Project	Size (Square Feet)
Figure 2-1	
Construct Vehicle Inspection Facility	3,100
Pavements	24,994
Construct Base Entry Road Calming	4,198
Construct New Overhead Canopy/ID Check Stations/Gatehouse	4,643
Pavements	26,619
Figure 2-2	
FP- Construct Vehicle Inspection Facility	3,595
Pavements, Commercial Gate	36,996
FP- Repair Pavements/Parking Commercial Gate	24,994
Total	129,139

Note: Size depicts total surface area for the facility.

2.4.2 No Action Alternative

No ECF or perimeter security improvements would occur. Grand Forks 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 current levels.

2.5 DESCRIPTION OF PAST AND REASONABLY FORESEEABLE FUTURE ACTIONS

- Complete environmental impact analysis of the Proposed Action and alternatives 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.”

Figure 2-1 Main Gate Construction Projects Locations, Grand Forks AFB

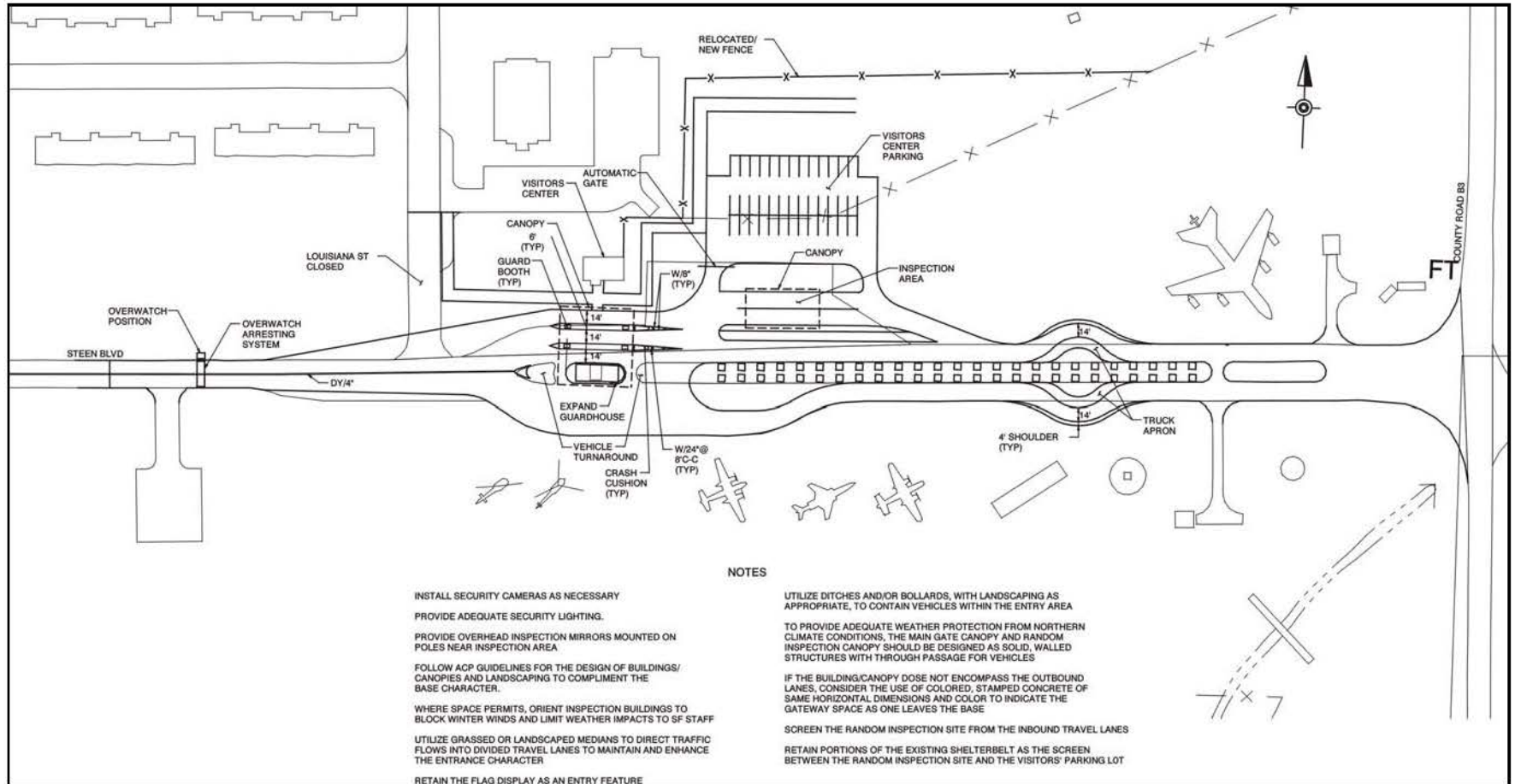
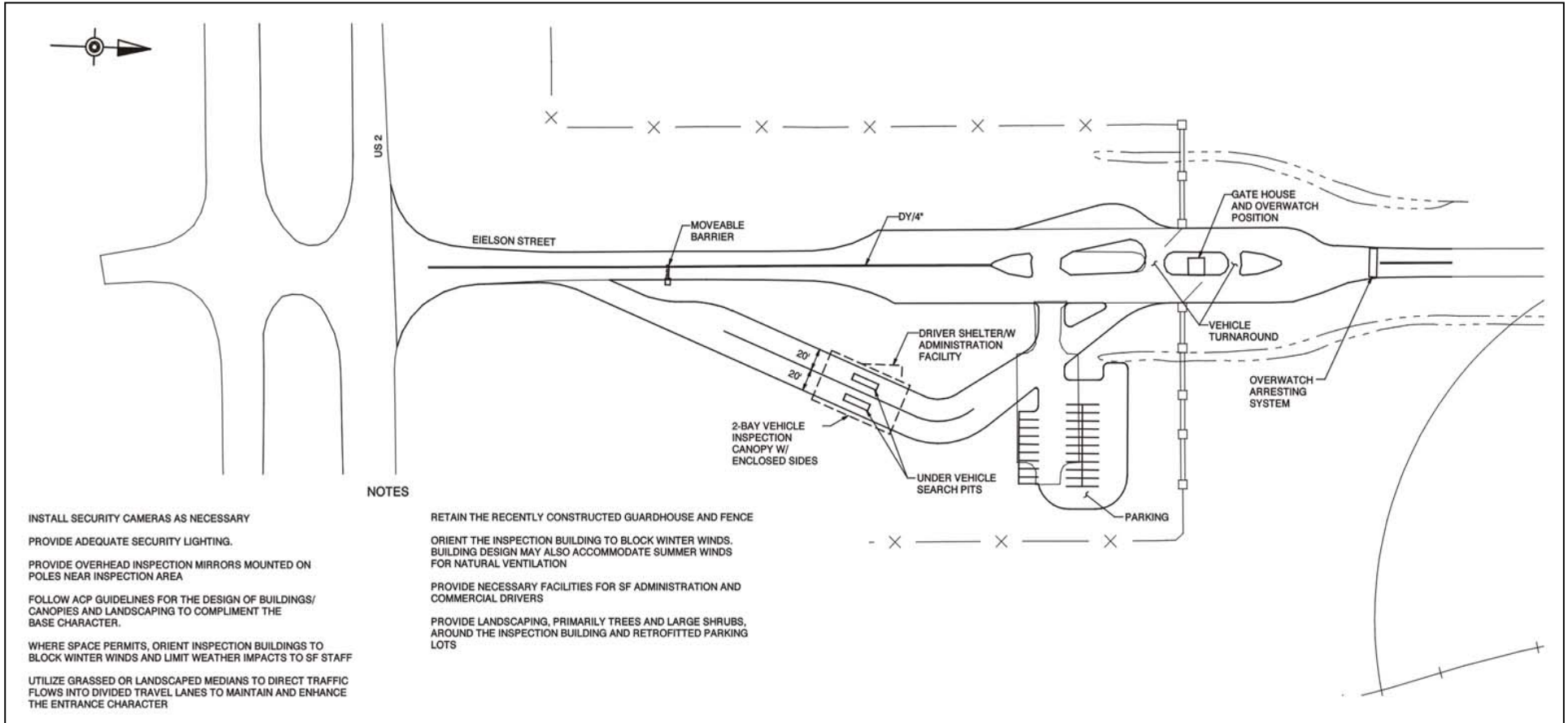


Figure 2-2 Commercial Gate Construction Projects Locations, Grand Forks AFB



The AF has six other reasonably foreseeable actions for Grand Forks AFB that could occur during approximately the same time period as the Proposed Action. These projects are listed below. Detailed information for these projects has been derived from the DoD Forms 1391 for the projects and is included in this analysis.

1. Airfield Repairs,
2. Concrete Recycling,
3. Demolish and Replace Consolidated Deployment Center, Building 523,
4. Repair and Improve Parking for Building 607,
5. Wing Headquarters Building,
6. Demolish Heat Plant.

2.6 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2-2 summarizes the impacts of the Proposed Action and No Action Alternatives.

2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The preferred alternative is the Proposed Action.

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Table 2-2 Summary of Impacts, Proposed Action and No Action Alternative

Resource (Applicable Sections)	Proposed Action	No Action Alternative
Air Quality	The greatest increase in emissions would be carbon monoxide (CO) (2.76 tons) from construction and demolition activities, equating to 0.01 percent of the CO emissions within Grand Forks County. This increase would not violate any current State standards or NAAQS. The emissions would be temporary, fall off rapidly with distance from the construction sites, and would last only as long as the construction activities. A Conformity Determination would not be required.	No significant impacts occur from the current activities.
Noise	Construction noise would be temporary, would occur only during daytime, and would cease when the project is completed.	No significant impacts occur from the current activities.
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.	No significant impacts occur from the current activities.
Water Resources	Use of the erosion control and spill control measures in the SWPPP that would be prepared for construction projects would minimize the potential for surface and ground water quality degradation.	No significant impacts occur from the current activities.
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.	No significant impacts occur from the current activities.
Land Use	Construction and operation of the gates would be consistent with the Base land use plan.	No significant impacts occur from the current activities.

Resource (Applicable Sections)	Proposed Action	No Action Alternative
Infrastructure & Utilities	<p>The proposed projects would occur on areas where impervious surface already exists. Thus, the volume of storm water runoff would not increase significantly above the existing conditions. About 88 tons of construction debris would be generated by the project. However, the exact amount that would be disposed in a landfill is unknown because the contractor would recycle material to the maximum extent practicable. Any traffic increases during construction would be temporary. The gates are designed to be more efficient, resulting in improved traffic flow after the project is completed.</p>	<p>No significant impacts occur from the current activities.</p>
Environmental Management	<p>Use of existing AF and Base directives would ensure the Base achieves its pollution prevention goals for hazardous materials, hazardous wastes, and conserving energy. Geologic features would not be changed by facilities construction. Project activity would occur within areas in which the soils were previously disturbed.</p>	<p>No significant impacts occur from the current activities.</p>

CHAPTER 3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 INTRODUCTION

Grand Forks AFB, home of the “Warriors of the North,” has a history that began in 1956 when the Base was built as part of the Air Defense Command. Over the years, the Base was home to a series of units with missions supporting deterrence of the Soviet Union during the Cold War era. The current host unit, the 319th Air Refueling Wing (ARW), provides aerial refueling capabilities to flying units worldwide, supporting the AF mission of global engagement by providing rapid global mobility and agile combat support.

3.2 AIR QUALITY

Air resources include climate and meteorology, regional air quality, and sources of air emissions.

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 ($\mu\text{g}/\text{m}^3$). 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 United States Environmental Protection Agency (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: 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). 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), NO₂, nitrous oxide (N₂O), and others. However, only NO, NO₂, and N₂O 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 (CO₂), and carbonic acid. Some VOCs are considered non-reactive under atmospheric conditions and include methane, ethane, and several other organic compounds.

As noted above, O₃ is a secondary pollutant and is not directly emitted from common emissions sources. Therefore, to control O₃ 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 Air Quality Control Region (AQCR) in the state. The CAA also allows states to adopt air quality standards more stringent than the federal standards. Table 3-1 lists the national and North Dakota ambient air quality standards.

Based on the requirements outlined in 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 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.

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 – treated as attainment until proven otherwise).

Generally, areas in violation of one or more of the NAAQS are designated nonattainment and must comply with stringent restrictions until all of the standards are met. In the case of O₃, CO, and PM₁₀, 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.

The NAAQS were established by the USEPA. They define the maximum allowable concentrations of pollutants that may be reached but not exceeded within a given time period, to protect human health with a reasonable margin of safety. Standards are not to be exceeded more than once per year, except for O₃ and PM₁₀, which are not to be exceeded more than an average of 1 day per year. Areas not meeting NAAQS are designated as nonattainment areas for specified pollutants regardless of nonattainment classification. North Dakota has adopted a more stringent set of standards, termed the North Dakota Ambient Air Quality Standards (NDAQS). Emissions of air pollutants from operations in North Dakota are limited to the more restrictive of the federal or state standard.

Six “criteria” pollutants are regulated by the NAAQS. These are O₃, CO, NO₂, SO₂, Pb, and particulate matter. Particulate matter has been further defined by size. There are standards for PM₁₀ and for particulates smaller than 2.5 microns in diameter. Generally, criteria pollutants directly originate from mobile and stationary sources. Tropospheric O₃ is an exception, since it is rarely directly emitted from sources. Most O₃ forms as a result of VOCs and NO_x reacting with sunlight. Table 3-1 presents the current NAAQS and NDAQS for the six criteria pollutants. In addition to the six NAAQS, North Dakota also has standards for hydrogen sulfide (H₂S).

The North Dakota Department of Health (NDDH) conducted an Air Quality Monitoring Survey for calendar year 1997 (NDDH 1998). The NDDH operated 11 ambient and two special purpose air quality monitoring sites, and 10 industry-operated source-specific air quality monitoring sites. The data from these sites indicated that the quality of the ambient air in North Dakota is generally good. The entire North Dakota Air Quality Control Region (including Grand Forks County) is in attainment status for all criteria pollutants. There were no NO₂, O₃, or particulate matter exceedances of either the state or federal ambient air quality standards measured during the year.

**Table 3-1 National Ambient Air Quality Standards
and North Dakota Ambient Air Quality Standards**

Pollutant	Averaging Time	NAAQS $\mu\text{g}/\text{m}^3$ (ppm) ^a		NDAAQs $\mu\text{g}/\text{m}^3$ (ppm) ^a
		Primary ^b	Secondary ^c	
O ₃	1 hr	235 (0.12)	Same	Same
	8 hr ^e	157 (0.08)	Same	
CO	1 hr	40,000 (35)	None	40 (35)
	8 hr	10,000 (9)	None	10 (9)
NO ₂	AAM ^d	100 (0.053)	Same	Same
SO ₂	1 hr	None	None	715 (0.273)
	3 hr	None	1,300 (0.5)	None
	24 hr	365 (0.14)	None	260 (0.099)
	AAM	80 (0.03)	None	60 (0.023)
PM ₁₀	AAM	50	Same	Same
	24 hour	150	Same	Same
PM _{2.5} ^e	AAM	65	Same	None
	24 hr	15	Same	None
Pb	¼ year	1.5	Same	Same
H ₂ S	1-hour	None	None	280 (0.20)
	24-hour	None	None	140 (0.10)
	3 months	None	None	28 (0.02)
	AAM	None	None	14 (10)

^a $\mu\text{g}/\text{m}^3$ — micrograms per cubic meter; ppm — parts per million

^b National Primary Standards establish the level of air quality necessary to protect the public health from any known or anticipated adverse effects of a pollutant, allowing a margin of safety to protect sensitive members of the population.

^c National Secondary Standards establish the level of air quality necessary to protect the public welfare by preventing injury to agricultural crops and livestock, deterioration of materials and property, and adverse impacts on the environment.

^d AAM — Annual Arithmetic Mean.

^e PM₁₀ — particulate matter equal to or less than 10 microns in diameter

PM_{2.5} — particulate matter equal to or less than 2.5 microns in diameter

Source: 40 CFR 50, North Dakota Air Pollution Control Regulations (NDAC) 33-15

3.2.3 Baseline Air Emissions

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. Table 3-2 lists the emissions inventory for Grand Forks County for 1999. The inventory includes emissions from stationary and mobile sources.

Table 3-2 1999 Emissions Inventory for Grand Forks County

CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM10 (tpy)
28,303	5,584	6,172	12,552	14,887

Source: AirData 2003.

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.

3.3 NOISE

3.3.1 Background Information

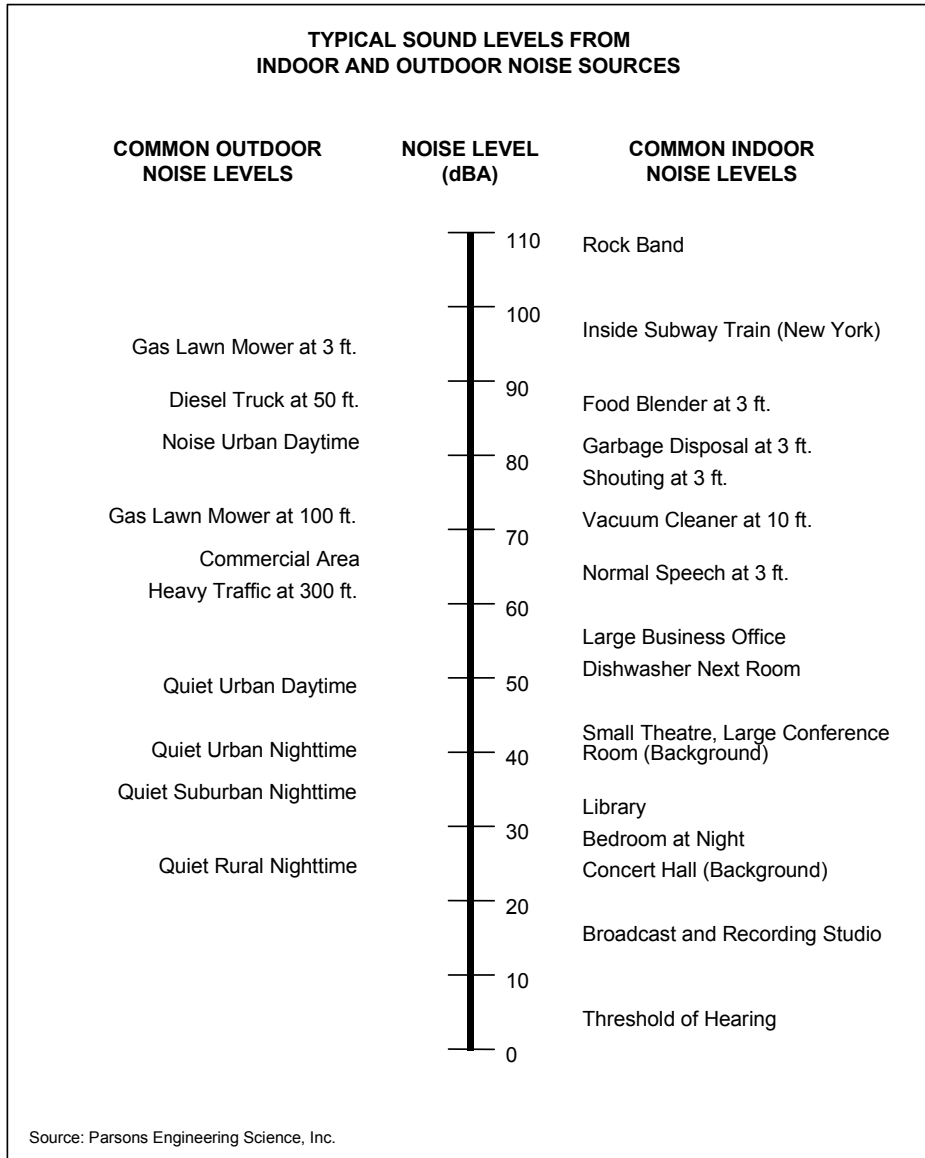
The characteristics of sound include parameters such as amplitude (loudness), frequency (pitch), and duration. Sound varies over an extremely large range of amplitudes. The decibel (dB), a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard unit for describing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

The day-night noise level (DNL) metric is a measure of the total community noise environment. DNL is the average dBA 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, Federal Aviation Administration (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 (FICUN)-developed land use compatibility guidelines for noise (U.S. Department of Transportation 1980). Compatible or incompatible land use is determined by comparing the predicted DNL level at a site with the recommended land uses.

Figure 3-1 Typical A-Weighted Noise Levels



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 (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 (U.S. Environmental Protection Agency 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 (U.S. Environmental Protection Agency 1974). The potential for hearing loss involves direct exposure to DNL levels above 75 dBA on a regular, continuing, long-term basis. FICUN 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 (U.S. Department of Transportation 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 (United States Air Force 1997d).

3.3.2 Existing Noise Levels

Aircraft operations are the primary source of noise at Grand Forks 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.

Noise produced by aircraft during takeoff and landing operations produce more noise impacts than ground traffic. These noises fall into a broad range of “transient” noises, i.e. those that come and go in a finite period of time. Dependent primarily on the type of aircraft, type of operations, and distance from the observer to the aircraft, the maximum flyover noise levels will vary widely in magnitude ranging from levels undetectable in the presence of other background noise, to levels sufficiently high to create feelings of annoyance, or to levels that interfere with speech or sleep. The duration of the noise will also vary depending on the proximity of the aircraft, speed, and orientation with respect to the observer.

Grand Forks AFB operates KC-135R aircraft as part of the 319 ARW. The number of daily aircraft operations directly affects the level of noise in the vicinity of an AF base. The AF examined the effects of aircraft noise and accidents on communities near AF installations and developed the Air Installation Compatible Use Zone (AICUZ) Program. Air Force Instruction (AFI) 32-7063, *Air Installation Compatible Use Zone Program*, outlines the objectives of the AICUZ program: to protect AF installations from incompatible land use and to assist local, State, and federal officials in protecting and promoting public health, safety, and welfare by providing information on aircraft accident potential and noise. The Base’s current AICUZ study was released in September 1995 (United States Air Force 1995a). Grand Forks AFB occupies 5,400 acres, of which approximately 900 acres are within the DNL 65 dBA and greater noise exposure area.

Measures are taken to keep noise levels on Grand Forks AFB at a minimum by continuously evaluating aircraft operations. Engine runups are directed into blast deflectors or occur in designated areas to minimize people's exposure to noise. As a result of these measures, Grand Forks AFB receives few noise complaints. Because of the high flight altitudes of KC-135R aircraft, most noise generated at the Base is from takeoff, touch-and-go operations, and landings.

Based on the examples in Figure 3-1, ambient noise at the gate areas would range from a approximately 50 dBA (quiet urban daytime) to about 80 dBA (noisy urban daytime) when aircraft operations are not be accomplished. Both gate areas involved in the Proposed Action are outside the DNL 65 dBA and greater noise exposure area generated by aircraft operations. Interior noise levels in the current gate structures would be reduced by approximately 18 to 27 dB due to the Noise Level Reduction (NLR) properties of the structures' construction materials (U.S. Department of Transportation 1992).

FICUN developed land use compatibility guidelines for noise in terms of DNL (U.S. Department of Transportation 1980). DNL is the metric used by the AF in determining noise impacts of military airfield operations for land use planning. Air Force land use compatibility guidelines (relative to Daily Noise Level (DNL) values) are documented in the AICUZ Program Manager's Handbook (United States Air Force 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 (U.S. Environmental Protection Agency 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 (United States Air Force 1978).

3.4 HAZARDOUS MATERIALS AND WASTE

3.4.1 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 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 Grand Forks AFB is accomplished in accordance with DoD Directive 4210.15 (*Hazardous Materials Pollution Prevention*), AFI 32-7086 (*Hazardous Materials Management*), and AFI 32-7080 (*Pollution Prevention Program*), all of which incorporate the requirements of federal regulations, AFIs, and DoD Directives for the reduction of hazardous material uses and purchases. EO 12088, *Federal Compliance with Pollution Control Standards*, under the authority of the USEPA, requires that necessary actions be taken for the prevention, management, and abatement of environmental pollution from hazardous materials due to federal facility activities.

Hazardous materials at Grand Forks AFB are used and managed through the hazardous materials pharmacy program, or HAZMART. The pharmacy is managed by the 319 Mission Support Group (MSG). Hazardous waste streams generated by facility operations at Grand Forks AFB include bead blast media, solvents, paint and paint-related material, shelf-life expired materials, contaminated soil, and spill residue (United States Air Force 2000c). The response procedures for hazardous materials/waste releases are dictated in the Grand Forks AFB Hazardous Materials (Hazmat) Plan, which is an appendix to the Base Operations Plan 32-1, maintained by the Readiness Flight.

3.4.2 Hazardous Waste

Resource Conservation and Recovery Act (RCRA), Subtitle C (40 CFR Parts 260 through 270) regulations are promulgated by the USEPA and are applicable to the control of and disposal of solid and hazardous wastes. Hazardous waste must be handled, stored, transported, disposed, or recycled in accordance with these regulations. The storage, handling, recycling, and disposal of hazardous wastes are subject to regulations under the RCRA of 1976 and its 1988 amendments. RCRA regulatory authority has been delegated to the state by the USEPA.

Aircraft maintenance facilities are the largest generators of hazardous waste streams on Base, and hazardous waste generated by these units account for approximately 90 percent of all such wastes generated at the Base.

3.5 WATER RESOURCES

3.5.1 Surface Water

Grand Forks AFB lies within the Red River of the North Drainage Basin, which covers 40,000 square miles; the Base area drains into the Turtle River as part of a 714 square-mile watershed (USGS 2001). The Turtle River, which crosses the Base in the northwest corner, is a

fourth order tributary within the basin, accounting for only 1.5 percent of the total discharge into the Red River of the North (United States Air Force 2000c).

Surface runoff exits the Base from four drainage ditches that drain the west, northwest, and east drainage watersheds. The West Drainage Ditch carries runoff from the west watershed into the Turtle River, exiting from Outfall W near the northwest corner of the Base. The Northwest Drainage Ditch handles runoff from the northwest watershed, also emptying into the Turtle River at the northwest corner of the Base. The east watershed is drained by two drainage ditches. The North Drainage Ditch handles flow from watersheds E-3, E-4, E-5, E-6, and E-7 through three outfalls located on the eastern edge of the Base. The South Drainage Ditch carries runoff from watersheds E-1 and E-2 through two outfalls near the eastern edge of the Base. The North and South Drainage Ditches discharge into Kellys Slough National Wildlife Refuge, a wetland area that lies within the Turtle River watershed. Kellys Slough receives discharge from the Base wastewater lagoons at predetermined times of the year.

According to the National Water Quality Inventory Report (U.S. Environmental Protection Agency 1995), most North Dakota rivers and streams have good water quality. Natural conditions, such as low flows, can contribute to violations of water quality standards. During low flow periods, the rivers are generally too saline for domestic use. The Turtle River has high calcium and magnesium content, with a total dissolved solids content of less than 1,000 mg/L. Grand Forks AFB receives drinking water from the City of Grand Forks and Lake Agassiz Water Users Incorporated. The city recovers its water from the Red River of the North and Red Lake River, while Lake Agassiz Water Users Incorporated provides water recovered from well systems within glacial drift aquifers (United States Air Force 1999b). The water received on Base is tested daily for fluoride and chlorine by the 319 Civil Engineer Squadron (CES). Grand Forks AFB Bioenvironmental Engineering collects monthly bacteriological samples that are analyzed at the State lab.

3.5.2 Groundwater

Groundwater quality in the Grand Forks AFB area vary substantially. Due to generally high salinity, groundwater from the Dakota Aquifer is unusable for domestic or industrial purposes. Portions of the Dakota and Pierre aquifers with lower salinity are utilized for agriculture. Water quality of the bedrock aquifers is considered poor, exceeding USEPA limits of 500 milligrams per liter (mg/L) of total dissolved solids and 250 mg/L of both chloride and sulfate. Water from the glacial drift aquifers is hard, consisting of the calcium carbonate or calcium sulfate type; these aquifers produce the best quality water at their highest elevations. The Emerado Aquifer and Lake Agassiz silt deposits both produce poor quality water that is not considered suitable for municipal use (United States Air Force 2000c; NDGS 1970).

The Emerado Aquifer groundwater is generally of low quality due to the upward leakage of poor quality water from the underlying bedrock aquifers (United States Air Force 2000c). The Lake Agassiz beach deposits generally produce good quality water for municipal use. Generally, groundwater is too saline for domestic use.

3.6 BIOLOGICAL RESOURCES

Grand Forks AFB lies within the bluestem prairie region in the northern Great Plains. When the land was acquired by the DoD in the mid-1950s, it was under intense cultivation. After development, Grand Forks AFB planted smooth brome grass and Kentucky bluegrass, which are still dominant today. Grass heights within semi-improved areas such as the airfield are maintained at 7 to 14 inches. Many of the unimproved sections of the Base are used to cultivate hay and alfalfa. There are no known prairie remnants on Base; however, some prairie index species (such as coneflowers) are found in the unimproved and semi-improved areas mixed in with brome grass and various herbaceous annuals such as goldenrod. An inventory of protected and rare plant communities was completed on the Base in 1994; no rare plant species were identified on Base or in the project site (United States Air Force 2000c). Leafy spurge and Russian thistle (both noxious weeds) are also common in some areas of the Base. The AF actively conducts fence line weed trimming and periodic tree removal on Base on an as needed basis.

Extensive development on Grand Forks AFB has left minimal habitat for wildlife. Species such as white tail deer, eastern cottontail, and ring-neck pheasant can be found on the Base.

3.7 LAND USE

Grand Forks AFB has a General Plan that details the Base's existing and future land use plans. The 12 land use categories for both the existing and future conditions are: airfield and direct mission; aircraft operations/maintenance facilities; industrial facilities; community (commercial facilities); community (service) facilities; recreational facilities; medical, dental, and veterinary; housing (unaccompanied) officer; housing (unaccompanied) airmen; housing (accompanied); administrative; and transportation, open areas, buffer areas, and undesignated areas.

3.8 INFRASTRUCTURE AND UTILITIES

3.8.1 Storm Water Management

Grand Forks AFB has a SWPPP to document existing storm water management practices at the Base and to serve as a guide for Base personnel to ensure that the potential for storm water contamination is minimized. The Federal Clean Water Act (33 USC 121, *et seq.*) makes it illegal to discharge pollutants from a point source into navigable waters of the United States except in compliance with a permit.

3.8.2 Transportation Systems

Grand Forks AFB has excellent access to the regional transportation network of highways. The Base is accessed from Highway 2 through the Main Gate and through the Commercial (south) Gate. It is estimated that approximately 3,575 vehicles per work day enter and exit Grand Forks AFB via the two gates. During the peak flow periods (7:20-7:30 a.m.,

11:30 a.m.-12:15 p.m., and 4:15-4:25 p.m.) traffic is greater at the Main Gate, accommodating approximately 3,300 vehicles per day. Traffic volume at the Commercial Gate over a 24-hour period is approximately 275 vehicles.

3.8.3 Municipal Solid Waste

Solid wastes include all waste materials that are neither hazardous nor toxic, and which are normally disposed of by dumping or incineration, or are recycled or recovered. The management of solid (non-hazardous) waste on Grand Forks AFB includes the collection and disposal of solid wastes and recyclable material by contract. The contractor uses the Grand Forks Municipal Landfill for disposal. Materials collected from industrial facilities for recycling are transported to the recycle facility located southeast of Bldg 408. This facility provides separate covered bins for bulk storage of paper, glass, plastics, cardboard, and wood. Recyclable materials from the housing areas are collected at curb-side and transported off-Base by a contractor. The Base removes grass and yard wastes to the Grand Forks City Landfill for composting. The construction debris, hardfill, and inert waste generated by the Base are also disposed of at the Grand Forks Municipal Landfill, approximately 12 miles from the Base.

3.9 ENVIRONMENTAL MANAGEMENT

3.9.1 Pollution Prevention

The AF has taken a proactive and dynamic role in developing a pollution prevention (P2) program to implement the regulatory mandates in the Pollution Prevention Act of 1990; EO 12856 Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements; EO 12873 Federal Acquisition, Recycling, and Waste Prevention; and EO 12902 Energy Efficiency and Water Conservation at Federal Facilities. The AF P2 program incorporates the following principles in priority order:

- Generation of hazardous substances, pollutants, or contaminants would be reduced or eliminated at the source whenever feasible (source reduction).
- Pollution that cannot be prevented would be recycled in an environmentally safe manner.
- Disposal, or other releases to the environment, would be employed only as a last resort and would be conducted in an environmentally safe manner, according to regulatory guidance.

AFI 32-7080 provides the directives for the AF P2 program. The AFI incorporates by reference applicable federal, DoD, and AF level regulations and directives for P2. Each installation incorporates the requirements of AFI 32-7080 into a P2 Management Action Plan (MAP). The P2 MAP is used to manage the actions needed to develop and execute an installation's P2 program. P2 MAPs are based on recurring opportunity assessments designed to continually evaluate an installation's success in achieving P2 at the highest level in the hierarchy of action. The P2 MAP incorporates management strategies for meeting the goals of the program elements of the AF P2 program. These elements address reduction and

elimination of ozone depleting substances (ODS), USEPA 17 industrial toxics, hazardous waste, solid waste, recyclable materials, and energy conservation.

The environmental programs at Grand Forks AFB relevant to the Proposed Action include: hazardous materials and hazardous waste management; stormwater; and the IRP. The environmental office (319 CES/CEV) manages these programs at Grand Forks AFB in accordance with all applicable federal, state, local, DoD, and AF regulations, standards, and laws that apply to the installation.

3.9.2 Geology

The Base is located on the eastern flank of the Williston Basin, a broad area of downfolded rock extending from eastern North Dakota to Montana, and from Canada to South Dakota (NDGS 1970). The Williston Basin is a downfolded area of granite and other igneous rocks that formed part of the continental shield of North America. Several layers of sedimentary rocks of Cretaceous Age were deposited into the basin over the ages. These layers (from deepest to shallow) include the Dakota Shale and Sandstone Group, the Colorado Shale and Limestone, and Pierre Shale. The Colorado Group and Pierre Shale occur only in western Grand Forks County and are not present in the vicinity of Grand Forks AFB. Eastern North Dakota was affected by continental glaciers advancing out of Canada thousands of years ago. These glaciers scraped off the uppermost geologic layers in many areas and deposited layers of sediments ranging from boulders and gravel to clay. As the glaciers retreated northward, meltwaters formed glacial Lake Agassiz.

The Base is in a zone of low seismicity, and there are no major faults on or near the Base (United States Air Force 1992). Earthquakes of 4.5 or less on the Richter Scale (VI or less on the Modified Mercalli Scale) could occur from distant faults. Although the probability of an earthquake is low, significant damage to Base facilities could result if an earthquake were to occur. The topography and relief presents no slumping hazards in the project site.

3.9.3 Soils

The soils in the area of the Proposed Action consist of Arveson loam, Gilby loam, and Glyndon silt loam. The sites for proposed alterations or construction are located in various combinations of Arveson, Gilby, and Glyndon soils. These soils are deep, poorly drained, moderately to moderately rapid permeable soils in areas between beach ridges, primarily in swales and delta plains. These soils formed in glaciolacustrine deposits overlying till. They are medium textured to moderately fine textured. The soil is classified as loam to silt loam in the topsoil to sandy loam or very fine sandy loam in the subsoil. These soils are highly susceptible to wind erosion (USDA 1981). The hazard of water erosion is slight in all of these soils.

These soils are level to nearly level in the project site. The natural drainage pattern in these soils is poorly defined and water frequently ponds here after spring runoff or heavy rains. A seasonally high water table persists throughout most of the year in the Arveson soil, ranging from one foot above to one foot below the surface. A seasonal high water table occurs from

April through July in the Gilby and Glyndon soils from about 2 to 6 feet below the surface. This affects the ease of excavation (excavations typically cave in without adequate shoring in the Arveson soil). The suitability for construction in these soils is also limited by wetness. In its natural state, water transmission in the Arveson soil is very slow and the soil is classified as hydric. Although hydric soils tend to favor wetlands development, there are no wetlands in the vicinity of the Proposed Action. Water transmission in the Gilby and Glyndon soils is moderate and neither of these soils are hydric. All of the areas potentially affected by the Proposed Action have been modified by previous development.

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CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

The activities associated with the Proposed Action would improve the Base's ability to accomplish its mission.

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 of a pollutant greater than 250 tpy (definition of a "major stationary source" in an attainment area as defined in 40 CFR 52.21(b)(1), or exceeded any significance criteria established by the North Dakota State Implementation Plan.

4.2.1 Proposed Action

Fugitive dust from ground disturbing activities, combustive emissions from construction equipment, and emissions from asphalt paving operations would be generated during construction and demolition. Fugitive dust would be generated from activities associated with site clearing, grading, cut and fill operations, and from vehicular traffic moving over the disturbed site. These emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions.

The quantity of 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 (U.S. Environmental Protection Agency 1995). In a USEPA study of air sampling data at a distance of 50 meters downwind from construction activities, PM₁₀ emissions from various open dust sources were determined based on the ratio of PM₁₀ to TSP sampling data. The average PM₁₀ 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 (U.S. Environmental Protection Agency 1988). Using 0.24 as the average ratio for purposes of analysis, the emission factor for PM₁₀ 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 PM₁₀ 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 (U.S. Environmental Protection Agency 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 (U.S. Environmental Protection Agency 1995). The construction emissions presented in Table 4-1 include the estimated annual PM₁₀ emissions associated with the Proposed Action at Grand Forks AFB. These emissions would produce slightly elevated short-term PM₁₀ 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 (U.S. Environmental Protection Agency 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 (U.S. Environmental Protection Agency 1985). The construction emissions presented in Table 4-1 include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action at Grand Forks AFB. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts. 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)	PM10 (tpy)
Grand Forks County ^a	28,303	5,584	6,172	12,552	14,887
Proposed Action Annual emissions ^b	2.76	0.23	1.79	0.20	0.74
Project Emissions as Percent of County Emissions	0.010%	0.004%	0.029%	0.002%	0.005%

a AirData 2003

b Estimated emissions from Proposed Action activities.

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 (lbs/ft³). 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, SO_x, NO_x, and PM₁₀ 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 CO (2.76 tons), which equates to 0.010 percent of the CO emissions within Grand Forks County. The emissions would be temporary and would be eliminated after completion of the activity. Emissions fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were non-attainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, the area is in attainment. Therefore, the air emission impacts 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. As reflected by the conformity analysis calculations, emissions from the Proposed Action would fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment. However, the AQCR is in attainment. For these reasons a conformity determination would not be required.

4.2.2 No Action Alternative

Emissions would continue to be generated by Base activities such as aircraft operations and other aircraft maintenance activities, as well as vehicle, boiler, generator, and fueling operations, and industrial processes. It is anticipated the emissions from these activities would continue at the levels generated under the baseline condition.

4.2.3 Mitigation

Potential criteria pollutant emissions associated with the Proposed Action would not exceed significance criteria requirements. Therefore, no mitigative actions for improving the ambient air quality would be required.

4.2.4 Cumulative Impacts

The AF proposes to conduct six other operation and maintenance and construction projects in future years at Grand Forks AFB. As more detailed information for these projects becomes available, additional analysis will be conducted. For analysis purposes, the emissions from this project will combined with the Proposed Action emissions to represent the most conservative condition that would occur in any one year for cumulative condition impacts. The

methodology used to calculate the emissions for the Proposed Action would be used for the cumulative condition.

The emissions for the cumulative condition would be temporary and would be eliminated after completion of the activity. Emissions for the cumulative condition would be expected to fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, the area is in attainment. Therefore, the air emissions from the construction activities associated with the Proposed Action cumulative condition would not be considered significant.

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 and aircraft operation 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 Proposed Action

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. Table 4-2 shows the anticipated sound pressure levels at a distance of 50 feet for miscellaneous heavy equipment.

Construction of the previously described AT/FP projects would be accomplished under the Proposed Action. Equipment and vehicles involved in site preparation, foundation preparation, construction, and finishing work would generate the primary source of noise from these activities. Construction noise would be intermittent and short-term in duration. Typical noise levels generated by these activities range from 75 to 89 dB at 50 feet from the source.

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 L_p = sound pressure level

2 Source: CERL 1978

For the purposes of this EA, it is estimated the shortest distance between a noise source and a receptor such as a nearby Base building would be about 50 feet. No military family housing units or dormitories are within 1,000 feet of the project sites.

Noise related to the construction projects may have a short-term impact on the administrative functions in nearby buildings. Outdoor noise from construction activity at an occupied building 50 feet from the noise source could be as high as 75 to 89 dB (see Table 4-2). Interior noise levels during construction activity would be reduced from the 75 to 89 dB level by approximately 18 to 27 dB due to the NLR properties of the building's construction materials (U.S. Department of Transportation 1992). This reduced level of noise could annoy as many as 36 percent of nearby persons 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 Subchapter 3.3.2, 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 building occupants 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 Grand Forks AFB would continue to be from aircraft operations and the noise contours would remain as they are currently. 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.

4.3.2 No Action Alternative

No gate improvements would be carried out under the No Action Alternative. The baseline noise condition would continue.

4.3.3 Mitigation

No significant noise impacts would occur. Therefore, mitigation measures would not be required.

4.3.4 Cumulative Impacts

The distance between the Proposed Action and the other project sites is great enough that there would be no combination of construction noise from the project sites. No cumulative impacts would be anticipated.

4.4 HAZARDOUS MATERIALS AND WASTE

Impacts to hazardous materials management would be considered significant if the federal action resulted in noncompliance with applicable federal and state regulations, or increased the amounts generated or procured beyond current the Base's current waste management procedures and capacities.

4.4.1 Proposed Action

Hazardous Materials

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

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.

4.4.2 No Action Alternative

The mission of Grand Forks AFB would not change. Thus, the Base would continue to accomplish the activities that occur under the current condition. The existing processes and procedures, which accommodate current activities, would continue to be used to manage hazardous wastes, hazardous materials, and stored fuels. It is also anticipated that the volumes of the materials used, generated, and stored would remain at current levels.

4.4.3 Mitigation

No significant hazardous materials, hazardous, or stored fuels impacts would be anticipated. Therefore, no mitigation would be required.

4.4.4 Cumulative Impacts

The construction contractor for other projects at Grand Forks AFB would comply with applicable regulatory guidance as described for the Proposed Action. When completed, the activities at the other facilities would be managed in accordance with applicable Base plans for hazardous waste, hazardous materials, and stored fuels. No significant hazardous waste, hazardous materials, and stored fuels impacts would be anticipated.

4.5 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.

4.5.1 Proposed Action

Surface Water

Construction activities can affect water resources by contributing eroded soil and other contaminants in runoff to surface waters such as streams, lakes, ponds, and wetlands. The potential for erosion and sedimentation could occur as a result of construction that requires grading or other earthmoving activities during construction of new facilities. These activities could result in soil disturbance and increased erosion and sedimentation that could potentially enter surface waters if not properly managed. 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 best management practices (BMP) designed to reduce impacts. These standard erosion control measures to prevent storm water pollution would be incorporated into facility construction and design to minimize soil disturbance, and prevent erosion and sedimentation, at the work site. Measures to prevent discharge of contaminants into surface waters would be followed during construction. Examples of BMP include: the use of silt fences to minimize erosion and siltation in aquatic habitats; the establishment of streamside management zones; the control and collection of stormwater runoff from impervious surfaces (*i.e.*, roads and parking lots). Because the proposed projects are taking place primarily on areas where impervious surface already exists,

the volume of storm water runoff should not increase significantly above the existing conditions.

Groundwater

No impacts to groundwater would be anticipated from implementation of the Proposed Action.

4.5.2 No Action Alternative

None of the gate facilities actions associated with AT/FP would occur. Base development activities and routine facilities actions at Grand Forks AFB would be accomplished in accordance with the Base's General Plan. Use of the existing SWPPP would ensure compliance with directives to ensure water quality is not degraded at Grand Forks AFB.

4.5.3 Mitigation

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

4.5.4 Cumulative Impacts

As with the Proposed Action, the construction contractor for other projects would be required to comply with applicable regulatory requirements and 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, groundwater, or floodplains would be anticipated.

4.6 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.

4.6.1 Proposed Action

Construction activities associated with the Proposed Action would occur within developed, maintained areas with a 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. The demolition and construction contractor would avoid disturbing fish and wildlife and from significantly disturbing native habitat in areas adjacent to the project site. Trees and shrubs would be retained to the greatest extent possible. There would be no impacts to vegetation outside the developed areas of the Base. Use of best management practices, 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.

4.6.2 No Action Alternative

None of the gate facilities actions associated with AT/FP would occur. The potential for adverse effects to biological resources on Grand Forks AFB would continue to be minimized through the use of existing natural resources management plans. The potential for bird-aircraft strikes at Grand Forks AFB would remain at current levels.

4.6.3 Mitigation

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

4.6.4 Cumulative Impacts

The gate facilities actions associated with AT/FP would contribute to ongoing construction activities within the developed portion of the Base. The Proposed Action would not result in any cumulative impacts that are considered significant.

4.7 LAND USE

An impact to land use would be considered significant if one or more of the following occur as a result of the proposed action: (1) conflict with applicable ordinances and/or permit requirements; (2) nonconformance with applicable land use plans; (3) preclusion of adjacent or nearby properties being used for existing activities; or (4) conflict with established uses of an area.

4.7.1 Proposed Action

The sites for the Proposed Action gate facilities improvements are on land designated for transportation and infrastructure, and that category would be consistent with the functions of the new and improved facilities. Therefore, no land use category changes would be required to accommodate the Proposed Action.

4.7.2 No Action Alternative

None of the facilities actions associated with gate facilities improvements would occur. Routine facilities actions at Grand Forks AFB would be accomplished in accordance with the Base's General Plan.

4.7.3 Mitigation

No significant land use impacts would occur as a result of the Proposed Action. Therefore, no mitigative actions would be required.

4.7.4 Cumulative Impacts

Under the cumulative condition, other facilities would be constructed on Grand Forks AFB. As with the Proposed Action facilities, the other facility actions would be compatible with the Grand Forks AFB General Plan. Thus, the facility construction anticipated under the cumulative condition would be consistent with existing and future land use plans and programs identified in the General Plan.

4.8 INFRASTRUCTURE AND UTILITIES

Impacts to the infrastructure and utility systems would be considered significant if the federal action substantially increased the demands on systems, resulting in the need for additional capacity or new facilities.

4.8.1 Proposed Action

Storm Water Management

All proposed demolition, construction, and renovation activities would occur within the existing boundaries of the Base. A negligible increase in impervious surface would result from implementing the Proposed Action. Therefore, the amount of storm water runoff should not increase significantly above the existing conditions. The curbs and gutters installed during any street and off-street parking construction would be connected to the existing storm water system. The proposed projects will occur on areas where impervious surface already exists. Thus, the volume of storm water runoff will not increase significantly above the existing conditions.

The contractor would ensure a SWPPP is completed and approved before initiating activities. The plan likely would include the erosion control techniques that would be used during demolition and construction to minimize erosion. The construction sites would have silt fences and other erosion control features such as absorbent booms for oils and greases down gradient. Hay bales or other absorbent materials would be installed around storm drainage system inlets to prevent sediment or other contaminants from entering the storm water system during the project. The rate of runoff from the construction site would be retarded and controlled mechanically. Diversion ditches would be constructed to retard and divert runoff to protected drainage courses. If site characteristics present the potential for storm water sediment to enter the storm water system, drains in the area would be protected with silt fences, hay bales, or an approved equivalent. No significant storm water management impacts would be anticipated from project site runoff.

Transportation Systems

Impacts would include a temporary increase in construction-related traffic during the construction activities. It is anticipated construction-related traffic would be localized to the specific construction project site as well as the route between the project site and the Base gate. The construction-related traffic would be temporary, lasting as long as the project activity in

that area. A beneficial impact on traffic flow would be expected as a result of the Proposed Action.

Solid Waste Management

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/ft³ (Merritt 1976);
- 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 (U.S. Army Corps of Engineers 1976);
- Approximately 96 pounds of demolition and construction debris are generated for each square foot of floor area of renovated structures;
- Approximately 1 pound of construction debris is generated for each square foot of new asphaltic concrete pavement.

Type IV solid waste would be generated from implementation of the Proposed Action. These wastes would consist of building debris and construction materials such as concrete, metals (roofing, reinforcement bars, conduit, piping, etc.), fiberglass (roofing materials and insulation), cardboard, plastics (PVC piping, packaging material, shrink wrap, etc.), 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.

With implementation of the Proposed Action, approximately 62,144 lbs of solid waste would be generated by construction of new facilities and approximately 113,603 pounds of solid waste would be generated by construction of new pavement surfaces. The exact amount of debris that would be disposed of in a landfill is unknown because the contractor will recycle material to the maximum extent practicable. As noted in Chapter 3, solid waste is disposed of off-Base by contractor. Solid waste is currently disposed of at the Grand Forks Municipal Landfill.

4.8.2 No Action Alternative

No facilities actions associated with AT/FP gate improvements would be accomplished at Grand Forks AFB under the No Action Alternative. Wastewater and solid waste generation would continue at the levels experienced under the current conditions. The volume of vehicular traffic would remain at current levels due to no significant change in assigned personnel.

4.8.3 Mitigation

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

4.8.4 Cumulative Impacts

Storm Water Management

There would be an overall increase in impervious surface which would result in an increase in impervious cover from the Proposed Actions and other actions. Discussion for the Proposed Action would apply to the other project facilities sites. With implementation of control devices, no cumulative significant storm water impacts would be anticipated from implementation of the Proposed Action and other actions.

Transportation Systems

Construction projects associated with the other actions would increase project-related traffic as described for the Proposed Action. Since some of the other actions are in the same area as the Proposed Action construction activities, there could be a slight cumulative increase in traffic. As with the Proposed Action, the construction-related traffic would be temporary, lasting as long as the project activity in that area. It is anticipated that vehicular traffic at the Base gates would be acceptable, with no substantial change in volumes from baseline conditions. No substantial change in traffic congestion would be expected as a result of the cumulative condition.

Solid Waste Management

Disposal of demolition, construction, and renovation debris from the other actions would increase the disposal rate at a disposal landfill over the construction period. It is assumed the contractor would recycle materials to the maximum extent possible, thereby reducing the amount of construction and demolition debris disposed in the landfill. However, the exact amount of debris cannot be estimated at this time and this analysis assessed the most conservative condition.

4.9 ENVIRONMENTAL MANAGEMENT

Impacts to P2 would be considered significant if the federal action resulted in generated quantities of P2 elements over and above established baseline levels. Impacts to the Installation Restoration Program would be considered significant if the federal action disturbed (or created) contaminated sites resulting in adverse effects to human health or the environment. An impact is considered significant if it would result in one or more of the following: (1) exposure of people or structures to major geologic or chemical hazards; (2) occurrence of substantial erosion or siltation; (3) uncontrolled release of chemicals/fuels into the environment; (4) occurrence of substantial landsliding; or (5) substantial damage to project structures/facilities.

4.9.1 Proposed Action

Pollution Prevention

The Proposed Action would result in construction of new facilities at Grand Forks AFB. The activities associated with the action would be accomplished under existing AF and Base directives, as well as innovative P2 technologies, to achieve the P2 goals of minimizing or eliminating the use of hazardous materials, reducing the volume of hazardous wastes and the release of pollution into the environment, and conserving energy.

Geology

New facilities construction under the Proposed Action would not result in any substantial changes to physiographic features. Sites would be cleared and stabilized to enable construction of foundations and structures. No change in the site elevation would be anticipated. Alteration of ground surface would be minimal. Facility design and construction would incorporate recommendations of a site-specific geotechnical investigation, as appropriate.

It is anticipated the facilities would not be located in areas of known earthquake faults. Because the project site is not located along any known faults, the potential for surface fault rupture occurring at the project sites is considered to be low. Since earthquake-related hazards cannot be avoided in the region, the project site could be subjected to seismic shaking and strong ground motion. Upon completion, the Proposed Action would not result in any increase in exposure of people to potential impacts from seismic ground shaking.

Soils

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 P2 plan is completed and approved before initiating activities. The plan likely 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 by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Slopes too steep for stabilization by other means would be stabilized by hydroseeding, mulch anchored in place, covering by anchored netting, sodding, or such combination of these and other methods as may be necessary for effective erosion control. Use of best management practices such as rock berms, 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.

The Proposed Action would result in removal of topsoil for construction of the proposed facilities and structures. Any topsoil removed from the site would be replaced at other locations upon completion of the project.

4.9.2 No Action Alternative

The mission of Grand Forks AFB would not change under the No Action Alternative. Thus, the Base would continue to accomplish the activities that occur under the current condition. The existing processes and procedures, which accommodate current activities, would continue to be used to manage P2, and the IRP, as well as geologic and soils features.

4.9.3 Mitigation

No significant P2, IRP, geology, or soils impacts would be anticipated. For this reason, no mitigation measures would be required.

4.9.4 Cumulative Impacts

The construction contractor for other projects would be required to comply with the regulatory requirements and best management practices identified for the Proposed Action. Although some of the other actions are adjacent to Proposed Action project sites, use of the regulatory requirements and best management practices identified for the Proposed Action 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 P2, IRP, geology, or soils impacts would be anticipated.

4.10 UNAVOIDABLE ADVERSE IMPACTS

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

4.10.1 Air Quality

The emission of air pollutants associated with facilities construction and aircraft operation is an unavoidable condition, but is not considered significant and a Clean Air Act General Conformity Determination would not be required.

4.10.2 Noise

Noise resulting from anticipated construction activities is an unavoidable condition. Although some annoyance may occur, no sleep disturbance or speech interference is anticipated for the Proposed Action. Hearing impairment is not expected. Noise would not be considered a significant impact.

4.10.3 Environmental Management

The loss of aggregate, which would become inaccessible, would occur as a result of the construction activities. However, 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.

4.10.4 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.

4.10.5 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.

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

The Proposed Action would not result in intensification of land use in the area surrounding the Base. Development of the Proposed Action or No Action Alternative would not represent a significant loss of open space. The sites are designated for aviation uses, and were not planned for use as open space. Therefore, it is not anticipated that the Proposed Action or No Action Alternative would result in any cumulative land use or aesthetic impacts. Long-term productivity of the sites would be enhanced by development of the Proposed Action.

4.11.1 Irreversible and Irretrievable Commitment of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action or No Action Alternative involve consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

4.11.2 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 the Proposed Action. 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.

4.11.3 Energy Resources

Energy resources such as petroleum-based products (such as gasoline, jet fuel, and diesel), natural gas, and electricity would be used for the Proposed Action 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.

4.11.4 Land

Implementation of the Proposed Action would result in construction of new facilities on the Base. This land would be lost to other uses during the operational life of the gates facilities. The loss of open space is not considered irreversible.

4.11.5 Biological Habitat

The Proposed Action would result in the irreversible destruction or loss of the vegetation and wildlife habitat on proposed construction sites. The Proposed Action would not remove a significant amount of open space or undeveloped land currently functioning as biological habitat.

4.11.6 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 the Proposed Action represents employment opportunities, and is considered beneficial.

**CHAPTER 5
LIST OF PREPARERS**

Name	Degree	Resource	Years of Experience
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CHAPTER 6

PERSONS AND AGENCIES CONSULTED

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

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North Dakota Game and Fish

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CHAPTER 7

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**APPENDIX A
AIR FORCE FORM 813**

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS		Report Control Symbol RCS: 2003-078	
INSTRUCTIONS <i>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).</i>			
SECTION I - PROPONENT INFORMATION			
1. TO (Environmental Planning Function) 319 CES/CEV		2. FROM (Proponent organization and functional address symbol) 319 CES/CD	
		2a. TELEPHONE NO. 701-747-4774	
3. TITLE OF PROPOSED ACTION Anti-Terrorism/Force Protection Activities at Grand Forks AFB, North Dakota			
4. PURPOSE AND NEED FOR ACTION (<i>identify decision to be made and need date</i>) 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 Grand Forks AFB.			
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (<i>Provide sufficient details for evaluation of the total action.</i>) (see attached)			
6. PROPONENT APPROVAL (<i>Name & Grade</i>) MARY C. GILTNER, GM-13, DAFC Deputy Base Civil Engineer		6a. SIGNATURE	
		6b. DATE	
SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY (<i>Check appropriate box and describe potential environmental effects including cumulative effect.</i>) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)			
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (<i>Noise, accident potential, encroachment, etc.</i>)		<input checked="" type="checkbox"/>	
8. AIR QUALITY (<i>Emissions, attainment status, state implementation plan, etc.</i>)			<input checked="" type="checkbox"/>
9. WATER RESOURCES (<i>Quality, quantity, source, etc.</i>)			<input checked="" type="checkbox"/>
10. SAFETY AND OCCUPATIONAL HEALTH (<i>Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.</i>)		<input checked="" type="checkbox"/>	
11. HAZARDOUS MATERIALS/WASTE (<i>Use/storage/generation, solid waste, etc.</i>)		<input checked="" type="checkbox"/>	
12. BIOLOGICAL RESOURCES (<i>Wetlands/floodplains, flora, fauna, etc.</i>)			<input checked="" type="checkbox"/>
13. CULTURAL RESOURCES (<i>Native American burial sites, archaeological, historical, etc.</i>)		<input checked="" type="checkbox"/>	
14. GEOLOGY AND SOILS (<i>Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.</i>)		<input checked="" type="checkbox"/>	
15. SOCIOECONOMIC (<i>Employment/population projections, school and local fiscal impacts, etc.</i>)		<input checked="" type="checkbox"/>	
16. OTHER (<i>Potential Impacts not addressed above.</i>)		<input checked="" type="checkbox"/>	
SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION			
7. <input type="checkbox"/> PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____; OR			
<input type="checkbox"/> 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 have the potential for beneficial effects on the safety of project end users. 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 Grand Forks AFB area.			
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (<i>Name & Grade</i>) Wayne A. Koop, R.E.M., GM-13 Environmental Management Flight Chief		19a. SIGNATURE	
		19b. DATE	

4.0 PURPOSE AND NEED FOR THE ACTION

4.1 Purpose of the Action New Air Force standards for base Entry Control Facilities related to Anti-terrorism/Force Protection have evolved from a heightened security environment. Correcting current deficiencies by upgrading the Main Gate entry control facilities will provide the required force protection and anti-terrorism measures needed to protect the lives of Air Force personnel and civilians.

Vehicle inspections are among the procedures taken at military installations to provide Anti-terrorism and Force Protection actions. A proper inspection facility increases the level of safety provided to Security Forces and the base population. A drive-through vehicle inspection facility will enable 360-degree inspections and detainment if necessary. Adequate visitor parking must be sized sufficiently for all base visitors seeking passes and located outside the minimum DoD stand-off distance from any facility.

Traffic calming provisions such as circles or serpentine routes are needed on inbound and outbound roadways is needed to control vehicle speed and slow incoming vehicles.

4.2 Need for the Action The existing Entry Control Facilities are a high vulnerability situation that does not meet current Air Force standards. The current deficiencies put Air Force personnel at risk and threaten the life, safety and health of assigned personnel.

No secured vehicle inspection facility currently exists at Grand Forks AFB. Presently, the visitor parking lot is used as a vehicle inspection and ID check area, leaving limited or no visitor parking spaces during peak traffic flow. Since the vehicle inspection area is not a covered or controlled area, inspections have been hindered and personnel put at risk due to extreme weather conditions. In addition, no permanent physical means exists to detain rogue vehicles. Without proper facilities, the security of the base is considerably compromised.

The current entry/exit road was not built with considerations of slowing traffic and does not meet current Anti-terrorism/Force Protection standards. There are no mechanisms in place for controlling excessive vehicle speed.

5.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

5.1 Description of the Proposed Action Main Gate: Construct an Overhead Canopy/ID Check Station/Gatehouse. A three lane canopy with six ID Check Stations would be provided, including bulletproof glass, utilities, and pavement for lane additions.

Construct Vehicle Inspection Facility and visitor parking at the Main Gate. This project includes all construction, demolition, pavements, utilities, lighting and site preparation work needed. The proposed facility would have two drive-through bays, underground inspection pits, overhead doors, a driver waiting area, bathroom, and storage for canine and equipment, as well as a 16-space parking lot with lighting and landscaping.

Construct Base Entry Traffic Calming roadway reconfigurations for Main Gate entry/departure road. This project includes adding curves to the road, as well as narrowing the road to one lane at a traffic management checkpoint.

Commercial Gate (south): Construct Inspection Facility to include two drive-through bays, underground inspection pits, overhead doors, a driver waiting area, administrative office, bathroom, support area, and storage for canine and equipment as well as pavements, vehicle staging area, lighting, landscaping, drainage and utilities to the facility.

5.2 Anticipated Environmental Issues The potential effect of additional impermeable surface will require evaluation. The potential effect to air quality from construction will require analysis. The potential effect of the project on biological resources will require evaluation. The potential effects on safety and occupational health and socioeconomics will require evaluation.