

**Final Report**  
**Environmental Assessment**

**Construct a**  
**Ground-to-Air Transmitter and Receiver (GATR)**  
**Facility**  
**at**  
**Grand Forks Air Force Base**

**Prepared by**  
**Grand Forks Air Force Base, North Dakota**  
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## Report Documentation Page

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## **FINDING OF NO SIGNIFICANT IMPACT FOR CONSTRUCT GATR FACILITY**

AGENCY: Department of the Air Force

**PROPOSED ACTION:** The United States Air Force (USAF) proposes to construct a Ground-to-Air Transmitter and Receiver (GATR) facility on Grand Forks Air Force Base (AFB), North Dakota. The Communication Squadron is preparing to install new GATR communication antennas and systems, for tactical aircraft control and commercial air traffic control. The antennas are used to provide quick deployment and high-bandwidth communications in remote, hard-to-reach areas. These systems allow operators in central locations to communicate with aircraft operating in the locale where the ground-to-air center is deployed. The system is designed for unattended operation.

**Purpose and Need:** The purpose of the proposed action is to construct a Ground-to-Air Transmitter and Receiver (GATR) facility at Grand Forks AFB. A ground to air transmitter and receiver facility is required for regional military/commercial communications between air traffic controller and pilots during the launching and recovering of aircraft. Combining the UHF/VHF transmitter and receiver sites into one consolidated facility minimizes the footprint on the airfield and reduces long term cost of maintaining separate facilities.

A modern, functionally designed, facility is needed for an efficient, effective operation of the newly acquired GATR equipment. The existing facilities 819, Receiver Site, and 820, Transmitter Site, are in disrepair and not sufficient to meet the demands of the GATR equipment. Neither site has sufficient HVAC nor adequate electrical systems or backup power to support the proposed action. Both sites have electrical/backup problems as currently installed. A site survey was conducted in 2004 to determine the possibility of using one of the existing sites, 819 or 820, for the GATR site. One of the biggest obstacles to using 819 or 820 is keeping the communication hardware operational while renovating the surrounding facility.

The current antenna poles are condemned for climbing. The area floods after winter snow melts and is very swampy. Non-jurisdictional wetlands are abundant in the area. With the wet conditions of the area, the antenna slowly sinks and the input to the antenna corrodes, ultimately degrading and failing. However, the new facility would be best located in the vicinity of 819 or 820 to ease the communications transition, minimize downtime of the communication functions, and maximize the use of existing cable, communication and utility infrastructure. The proposed location avoids the wetlands in the area.

There was an alternative considered but eliminated from detailed study. In 2004 an original site survey at GFAFB for costing to consolidate the ATR Receiver (819) and Transmitter (820) to a single GATR site was accomplished by Tinker AFB. That survey recommended that the Transmitter site 820 be used as the consolidated site because it is in better overall condition, is a flatter site, and easier to get to. It is a smaller building at 1,200 SF; however, a supplemental storage area could provide the additional space needed. There is enough floor space to hold the additional equipment racks, if the racks are moved closer together, and a UPS placed on each

rack. The Receiver site 819 is a larger building at 1,500 SF; however it is of poorer condition. Both buildings need HVAC and electrical system upgrades. This survey to make Bldg 820 the consolidated site has since been discarded, due to the prohibitive costs to move cables twice.

The objectives for the proposed action is to construct a new facility to house the new state-of-the-art Ground-to-Air Transmitter and Receiver (GATR) equipment, with HVAC, mechanical and electrical and backup power support. The existing radio equipment racks (about 20 total) and radios (both UHF and VHF) will be consolidated from two into one facility. Both the transmitter and receiver UHF and VHF antennas will be consolidated onto new towers/poles. Current coaxial cable should be reusable. New antennas and associated cabling will be purchased with communication funds, due to the poor condition of the existing antenna from harsh weather conditions. The GATR project, common to the Air Force, will keep long term maintenance and facility costs down, while minimizing the footprint out on the airfield. The proposed location meets the criteria of the 7:1 imaginary surface of the potential future crosswind runway and will not require an airfield waiver.

The subsequent demolition of 819 and 820 will be addressed in a separate document. It will need to address storage tank, asbestos, and demolition issues.

Impacts from the Proposed Action would be concurrent with other actions occurring at Grand Forks AFB. There are several other construction and demolition projects occurring on Grand Forks AFB in the same time frame. These projects are addressed under separate NEPA documents. A related EIAP document is the Environmental Assessment (EA) and FONSI accomplished in #2002-116 to remove petroleum contaminated soil near 820. Multiple Transmitter (820) and Receiver (819) facility projects of the past have been categorically excluded, including an economic assessment to determine feasibility to repair versus construct a new facility; add 110V power in racks; emergency lights; lighting to illuminate AST; and denied request to add restroom and water.

Grand Forks AFB must decide whether to construct a Ground-to-Air Transmitter and Receiver (GATR) facility on this base.

## ALTERNATIVES CONSIDERED

No Action Alternative 1: The no action alternative would be to leave the base as it is. Communications support equipment would be located in substandard facilities. As deterioration progresses, the Communication Squadron may lose communication support or contact to aircraft. Loss of UHF/VHF receiver/transmitter site capability prohibits the ATC controllers to communicate with both military and civilian aircraft. Aircraft would need to be diverted to another location. The radio receivers and transmitters are critical for controllers to communicate with pilots for safe air traffic control. A poor working environment adversely affects the mission at Grand Forks AFB.

Proposed Action 2: : Construct a Ground-to-Air Transmitter and Receiver (GATR) facility to house the GATR state-of-the-art communications equipment at a location estimated 650' north of facility 819 on the east side of road. The Communication Squadron proposes a 50x35' facility,

but the final size is contingent on the AMC funding limit. The project requires three new, 80' metal antennas mounted on new guyed metal poles, each 50' from the facility in three directions. Replace the antenna couplers. The communication equipment contractor/designer must conduct a site survey, recommend suitable solutions and provide appropriate foundations, including tower locations and antenna placements on towers. The contractor through coordination with CES would be required to obtain a FAA Aerospace Waiver prior to use of any construction equipment on the airfield. Estimates for equipment power requirements are total equipment power of 8,975 watts, and total equipment BTU of 30,644 BTU.

Alternative Action 3: Locate the GATR facility 750' north of facility 819 on the west side of the road. The area has many wetlands which must be avoided when designing the facility and the three adjacent 80 ft antenna towers. This location would place the facility and antenna another 100 feet farther from the potential crosswind runway.

## ENVIRONMENTAL CONSEQUENCES

**Air Quality** - Air Quality is considered good and the area is in attainment for all criteria pollutants.

**Noise** - The equipment used in construction will create additional noise. The increase in noise will be negligible and only occur during construction.

**Wastes, Hazardous Materials, and Stored Fuels** - The increase in hazardous and solid wastes from construction will be temporary. Solid waste debris will be disposed of in an approved location, such as the Grand Forks Municipal Landfill. Inert construction debris will be disposed at an approved location, such as Berger Landfill.

**Water Resources** – Provided best management practices (BMPs) are followed, there will be minimal impacts on stormwater, ground water and water quality. The proposed action will have no impact on wastewater.

**Biological Resources** – BMPs and control measures, including storm drain covers and covering of stockpiles, will be implemented to ensure that impacts to biological resources be kept to a minimum. BMPs will be required to prevent the spread of noxious weeds, minimize soil erosion, and promote the establishment of native plant species.

**Socioeconomic Resources** - This action will have a minor positive effect on the local economy. Secondary retail purchases will make an additional contribution to the local communities. The implementation of the proposed action, therefore, will provide a short-term, beneficial impact to local retailers during the construction phase of the project.

**Cultural Resources** - The proposed action has little potential to impact cultural resources. In the unlikely event any such artifacts were discovered during the construction, the operator or contractor will be instructed to halt operations and immediately notify Grand Forks AFB civil engineers who will notify the State Historic Preservation Officer.

Land Use - The proposed operation will not have an impact on land use, since the areas will remain designated for the original use.

Transportation Systems – The proposed operation will have minor adverse impact to transportation systems on base due to vehicles traveling to and from the construction area.

Airspace/Airfield Operations - The proposed action will not impact aircraft safety or airspace compatibility.

Safety and Occupational Health – Participants on the installation must wear appropriate personnel protective equipment (PPE).

Environmental Management – The proposed action will not impact ERP Sites. BMPs will be implemented to prevent erosion.

Environmental Justice - EO 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There is no minority or low-income populations in the area of the proposed action or alternatives, and, thus, there will be no disproportionately high or adverse impact on such populations.

A copy of the EA is available at the Grand Forks AFB Public Affairs office. All interested agencies and persons are invited to submit written comments within thirty days from the public notice. The public notice appeared in the Grand Forks AFB Leader and the Grand Forks Herald.

No adverse environmental impact to any of the areas identified by the AF Form 813 is expected by the proposed action, Construct a Ground-to-Air Transmitter and Receiver (GATR) facility.

CONCLUSION: Based on the Environmental Assessment performed to Construct a Ground-to-Air Transmitter and Receiver (GATR) facility at Grand Forks AFB, no significant environmental impact is anticipated from the proposed action. Based upon this finding, an Environmental Impact Statement is not required for this action. This document and the supporting AF Form 813 fulfill the requirements of the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) regulations implementing NEPA, and Air Force Instruction 32-7061, which implements the CEQ regulations.



WAYNE A. KOOP, R.E.M., GM-13  
Environmental Management Flight Chief

Date: 12 MAY 06

Attachment:  
Environmental Assessment

## **Cover Sheet**

Agency: United States Air Force (USAF)

Action: The action proposes to construct a Ground-to-Air Transmitter and Receiver (GATR) facility at Grand Forks Air Force Base (AFB), North Dakota.

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Grand Forks AFB, ND 58205

Designation: Environmental Assessment (EA)

Abstract: This EA has been prepared in accordance with the National Environmental Policy Act, and assesses the potential environmental impacts to construct a Ground-to-Air Transmitter and Receiver (GATR) facility, located on Grand Forks Air Force Base in Grand Forks County, North Dakota. Resource areas analyzed in the EA include Air Quality; Noise; Wastes, Hazardous Materials, and Stored Fuels; Water Resources; Biological Resources; Socioeconomic Resources; Cultural Resources; Land Use; Transportation Systems; Airspace/Airfield Operations; Safety and Occupational Health; Environmental Management; and Environmental Justice.

In addition to the Proposed Action, the Alternative Action and the No Action Alternative were analyzed in the EA. The EA also addresses the potential cumulative effects of the associated activities along with other concurrent actions at Grand Forks AFB and the surrounding area.

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## ACRONYMS, ABBREVIATIONS, AND TERMS

AAM	Annual Arithmetic Mean
AC	Alternating Current
ACG	Architectural Compatibility Guidelines
ACM	Asbestos Containing Material
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
APZ	Accident Potential Zone
ARPA	Archeological Resource Protection Act
ARW	Air Refueling Wing
AST	Above Ground Storage Tank
ATC	Air Traffic Control
AT/FP	Antiterrorism Force Protection
ATR	Air Traffic Radio
Ave	Avenue
BASH	Bird Aircraft Strike Hazard
Bldg	Building
Blvd	Boulevard
BMP	Best Management Practice
BMX	Bike Motocross
BOD	Biochemical Oxygen Demand
BRAC	Base Realignment And Closure
BTU	British Thermal Unit
CAA	Clean Air Act
CDC	Child Development Center
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES	Civil Engineer Squadron
CEV	Environmental Management Flight
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
dB	decibel
dBA	Decibels Adjusted
DNL	Day-Night Average A-Weighted Sound Level
DoD	Department of Defense
EA	Environmental Assessment

EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Environmental Restoration Program
ESA	Endangered Species Act
F	Fahrenheit
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
ft	Feet
ft <sup>3</sup> /s	feet cubed per meter
FW	Fighter Wing
GATR	Ground-to-Air Transmitter and Receiver
GFAFB	Grand Forks Air Force Base
GPP	Green Procurement Program
HAP	Hazardous Air Pollutants
hr	Hour
HM	Hazardous Material
H <sub>2</sub> S	Hydrogen Sulfide
HVAC	Heating, Ventilation and Air Conditioning
HW	Hazardous Waste
IAW	in accordance with
IRP	Installation Restoration Program
INRMP	Integrated Natural Resources Management Plan
KV	Kilovolt
KVA	Kilovolt-Ampere
LT	Long-Term
MBTA	Migratory Bird Treaty Act
MFH	Military Family Housing
MILSTD	Military Standard
mph	Miles Per Hour
MSDS	Material Safety Data Sheet
MSL	Mean Sea Level
µg/m <sup>3</sup>	Micrograms Per Meter Cubed
MUX	Multiplex(er)

NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
ND	North Dakota
NDAAQS	North Dakota National Ambient Air Quality Standards
NDAC	North Dakota Administrative Code
NDDH	North Dakota Department of Health
NDPDES	North Dakota Pollutant Discharge Elimination System
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Act
NHPA	National Historic Preservation Act
NO <sub>x</sub>	Nitrogen Oxides
NO <sub>2</sub>	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
O <sub>3</sub>	Ozone
OSHA	Occupational Safety and Health Act
OWS	Oil Water Separator
P2	Pollution Prevention
Pb	Lead
PCS	Petroleum-Contaminated Soil
PEM	Palustrine Emergent Wetland
PM <sub>10</sub>	Particulate Matter 10 Microns in Diameter
PM <sub>2.5</sub>	Particulate Matter 25 Microns in Diameter
POL	Petroleum Oil Lubricant
PPE	Personal Protective Equipment
ppm	Parts Per Million
PSD	Prevention of Significant Deterioration
QA/QC	Quality Assessment and Quality Control
RACM	Regulated Asbestos Containing Materials
RCRA	Resource Conservation and Recovery Act
RCS	Report Control Symbol
RH	Relative Humidity
RI/FS	Remedial Investigation/Feasibility Study
RV	Recreational Vehicle
SAGE	Strategic Air Ground Equipment
SAIC	Science Applications International Corporation
SARA	Superfund Amendments and Reauthorization Act
SF	Square Feet

SNG	Synthetic Natural Gas
SO <sub>2</sub>	Sulfur Dioxide
SO <sub>x</sub>	Sulfur Dioxide
St	Street
ST	Short-Term
SWMU	Solid Waste Management Unit
TO	Technical Order
tpy	Tons Per Year
TSCA	Toxic Substance Control Act
TSI	Thermal System Insulation
UAV	Unmanned Aerial Vehicle
UHF	Ultra High Frequency
UPS	Uninterruptible Power Supply
US	United States
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USFWS	United States Fish and Wildlife Service
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VHF	Very High Frequency

## EXECUTIVE SUMMARY

The United States Air Force (USAF) proposes to construct a Ground-to-Air Transmitter and Receiver (GATR) facility on Grand Forks Air Force Base (AFB), North Dakota. The Communication Squadron is preparing to install new GATR communication antennas and systems, for tactical aircraft control and commercial air traffic control. The antennas are used to provide quick deployment and high-bandwidth communications in remote, hard-to-reach areas. These systems allow operators in central locations to communicate with aircraft operating in the locale where the ground-to-air center is deployed. The system is designed for unattended operation.

**Purpose and Need:** The Communication Squadron is preparing to install new Ground-to-Air Transmitter and Receiver (GATR) communication antennas and systems, for tactical aircraft control and commercial air traffic control. Currently there are two separate Air Traffic Control (ATC) radio facilities (a transmitter and a receiver site, Buildings 820 and 819). Both these facilities are in disrepair, with the need to upgrade and renovate due to water leaks (roof, floor, and walls) and rodent infestation. The current locations of the transmitter and receiver sites are located in the middle of a very swampy area with flooding after the winter snow melt. Non-jurisdictional wetlands are abundant in the area. The electrical systems in both buildings are marginal for communication equipment, backup power, and HVAC capacity. Short circuits in the equipment trip the main breaker and engage the back up generator instead of tripping the breaker which feeds that equipment. Antenna towers (wooden poles) are in poor condition and are unsafe for climbing, which hinders maintenance on the already aging and weather beaten antennas. With the wet conditions of the area, the antenna slowly sinks and the input to the antenna corrodes, ultimately degrading and failing. Intermittent problems with radio communication between ATC and aircraft on the ground in certain locations of the runway and ramp are evident (due to the tree line located outside the fence line). The current site along the base exterior fence line is also an AT/FP concern.

A modern, functionally designed, facility is needed for an efficient, effective operation of the new equipment. There was an alternative considered but eliminated from detailed study. In 2004 an original site survey at GFAFB for costing to consolidate the ATR Receiver (819) and Transmitter (820) to a single GATR site was accomplished by Tinker AFB. The initial survey recommended that the Transmitter site 820 be used as the consolidated site because it is in better overall condition, is a flatter site, and easier to reach than 819. It is a smaller building at 1,200 SF; however, a supplemental storage area could provide the additional space needed. There is enough floor space to hold the additional equipment racks, if the racks are moved closer together, and a UPS placed on each rack. The Receiver site 819 is a larger building at 1,500 SF; however it is of poorer condition. Both buildings need HVAC and electrical system upgrades. The existing facilities 819, Receiver Site, and 820, Transmitter Site, are not sufficient to meet the demands of the GATR equipment. One of the biggest obstacles to using 819 or 820 is keeping the communication hardware operational while renovating the surrounding facility. This survey to make Bldg 820 the consolidated site has since been discarded, due to the prohibitive costs to move cables twice.

The proposed project would provide a new Ground-to-Air Transmitter and Receiver (GATR) facility to house the new Ground-to-Air Transmitter and Receiver (GATR) equipment, with appropriate HVAC, mechanical, electrical and backup power support. The new facility would be located in the vicinity of 819 or 820 to ease the communications transition, minimize downtime of the communication functions, and maximize the use of existing cable, communication and utility infrastructure. The existing radio equipment racks (about 20 total) and radios (both UHF and VHF) will be consolidated from two into one facility. Both the transmitter and receiver UHF and VHF antennas will be consolidated onto new towers/poles. Current coaxial cable should be reusable. New antennas and associated cabling will be purchased with communication funds, due to the poor condition of the existing antenna from harsh weather conditions.

The term “GATR” refers to taking the transmitter and receiver sites and consolidating into one “ground-to-air transmitter and receiver (GATR)” site. It’s a very common project throughout the Air Force. It keeps long term maintenance and facility costs down, while minimizing the footprint out on the airfield. The proposed location meets the criteria of the 7:1 imaginary surface of the current runway and potential future crosswind runway and will not require an airfield waiver.

The subsequent demolition of 819 and 820 will be addressed in a later document. It will need to address storage tank, asbestos, and demolition issues.

Grand Forks Air Force Base must decide whether to construct a Ground-to-Air Transmitter and Receiver (GATR) facility on Grand Forks AFB.

No Action Alternative 1: The no action alternative would be to leave the base as it is. Communications support equipment would be located in substandard facilities. As deterioration progresses, the Communication Squadron may lose communication support or contact to aircraft. Loss of UHF/VHF receiver/transmitter site capability prohibits the ATC controllers to communicate with both military and civilian aircraft. Aircraft would need to be diverted to another location. The radio receivers and transmitters are critical for controllers to communicate with pilots for safe air traffic control. A poor working environment adversely affects the mission at Grand Forks AFB.

Proposed Action 2: Construct a Ground-to-Air Transmitter and Receiver (GATR) facility. See the AF 813 in Appendix D for a description of the proposal, and maps in Appendix E for the proposed location to construct a Ground-to-Air Transmitter and Receiver (GATR) facility. Construct a facility to house the GATR state-of-the-art communications equipment at a location estimated 650' north of 819 on the east side of road. The Communication Squadron proposes a 50x35' facility, but the final size is contingent on the AMC funding limit. Project shall include masonry construction (burnished black), concrete floor slab on grade with footings, standing seam metal roof, 12 foot high ceiling, underground electrical service, gravel access road, self-contained emergency generator, uninterrupted power supply (UPS), electric heat, air conditioning, facility penetration for communications, fire detection, and all required site improvements. No water, sewer, or fire suppression systems required. All work must be coordinated with the communication equipment contractor/designer. The electric will consist of commercial (12.47/7.2 KV grounded wye), primary/secondary pad mount transformer, and new

generator with AST (self-contained unit with fuel storage). An overhead wireway (4"x4"minimum) should be provided for power runs to equipment racks. A minimum of two 4-inch conduits with inner duct should be provided from the nearest manhole to the facility demarc for fiber and copper cables. A minimum of six 4-inch ducts (two for each antenna tower) are required from antenna towers to a large junction box mounted on wall of facility (for antenna surge suppressor mounting). Junction box with six 4-inch ports through the wall into the facility, with ground bar connected directly to the earth-electrode subsystem for grounding of surge suppressors. Overhead ladder rack should be provided above the entire length of the facility from the antenna ports to the equipment racks for communications and cabling. The HVAC should consist of all electric heat, AC (direct expansion) maintained at 70F 20-80% RH non-condensing. Facility floor should be grounded in accordance with MIL-HDBK-419A, MIL-STD-188-124B, MIL-HDBK-1857, and MIL-HDBK-454A and provided with Equipotential Ground Plane. In the event a pre-engineered metal building is used for funding reasons, all metal parts would be bonded in accordance with MILSTD-188-124B, Section 5.2. All structural joints would connect IAW paragraph 5.2.6. and mating surfaces cleaned IAW paragraph 5.2.8. to ensure electrical continuity of the structure is maintained.

The project requires three new, 80' metal antennas mounted on new guyed metal poles, each 50' from the facility in three directions. Replace the antenna couplers. The communication equipment contractor/designer must conduct a site survey, recommend suitable solutions and provide appropriate foundations. Tower locations and antenna placements on towers would be selected in accordance with guidelines contained in TO 31Z3-10-9. The contractor through coordination with CES would be required to obtain a FAA Aerospace Waiver prior to use of any construction equipment on the airfield. Estimates for equipment power requirements are total equipment power = 8975 watts, and total equipment BTU = 30,644 BTU; based on the use of 17 GRT-22 Transmitters x 140 watts = 2380 watts, 6 AM-6155 Amplifiers x 610 watts = 3660 watts, 16 GRR-24 Receivers x 50 watts = 800 watts, 9 GRT-21 Transmitters x 140 watts = 1260 watts, 11 GRR-23 Receivers x 50 watts = 550 watts, 1 G/A Patch Panel x 250 watts = 250 watts, and 1 Fiber Optic MUX x 75 watts = 75 watts. A facility UPS with capacity of 15 KVA sized for 20 minutes of reserve power is recommended. A distribution panel should be provided with minimum of 24 single pole 20A breakers to provide power for equipment racks. The back up generator should have an automatic transfer panel and be sized to power the UPS, lights, and HVAC for the facility, probably 25 KW. Purchase new generator--both the gensets at bldg 819 and 820 are over 15 years old and according to AMC policy are in the age window to be programmed for replacement by the time they are 20 years old. Also they are both only 15 KW generators and 240 volt single phase. Per new AMC AFI32-1063 in 2005, all gensets are to have a facility load of at least 75% of the generator rated load and if 3-phase power would be required, all automatic transfer switches installed are to be of the maintenance bypass/isolation type with a switched neutral (4-pole switch). The proposed location avoids the wetlands in the area.

Alternative Action 3: Locate the GATR facility 750' north of facility 819 on the west side of the road. The area has many wetlands which must be avoided when designing the facility and the three adjacent 80 ft antenna towers. This location would place the facility and antenna another 100 feet farther from the potential crosswind runway.

## Impacts by Resource Area

**Air Quality** - Air Quality is considered good and the area is in attainment for all criteria pollutants.

**Noise** - The equipment used in construction would create additional noise. The increase in noise would be negligible and only occur during construction.

**Wastes, Hazardous Materials, and Stored Fuels** - The increase in hazardous and solid wastes from construction would be temporary. Solid waste debris would be disposed of in an approved location, such as the Grand Forks Municipal Landfill. Inert construction debris would be disposed at an approved location, such as Berger Landfill.

**Water Resources** - Provided best management practices (BMPs) are followed, there would be minimal impacts on stormwater, ground water and water quality. The proposed action would have no impact on wastewater.

**Biological Resources** – BMPs and control measures, including storm drain covers and covering of stockpiles, would be implemented to ensure that impacts to biological resources be kept to a minimum. BMPs would be required to prevent the spread of noxious weeds, minimize soil erosion, and promote the establishment of native plant species.

**Socioeconomic Resources** - This action would have a minor positive effect on the local economy. Secondary retail purchases would make an additional contribution to the local communities. The implementation of the proposed action, therefore, would provide a short-term, beneficial impact to local retailers during the construction phase of the project.

**Cultural Resources** - The proposed action has little potential to impact cultural resources. In the unlikely event any such artifacts were discovered during the construction, the operator or contractor would be instructed to halt operations and immediately notify Grand Forks AFB civil engineers who would notify the State Historic Preservation Officer.

**Land Use** - The proposed operation would not have an impact on land use, since the areas would remain designated for the original use.

**Transportation Systems** – The proposed operation would have minor adverse impact to transportation systems on base due to vehicles traveling to and from the construction area.

**Airspace/Airfield Operations** - The proposed action would not impact aircraft safety or airspace compatibility.

**Safety and Occupational Health** – Participants in the construction must wear appropriate personnel protective equipment (PPE).

**Environmental Management** – The proposed action would not impact ERP Sites. BMPs would be implemented to prevent erosion.

Environmental Justice - EO 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There is no minority or low-income populations in the area of the proposed action or alternatives, and, thus, there would be no disproportionately high or adverse impact on such populations.

## 1.0 PURPOSE OF AND NEED FOR PROPOSED ACTION

This Environmental Assessment (EA) examines the potential for impacts to the environment resulting from construction of a Ground-to-Air Transmitter and Receiver (GATR) facility on Grand Forks Air Force Base (AFB). As required by the National Environmental Policy Act (NEPA) of 1969, federal agencies must consider environmental consequences in their decision making process. The EA provides analysis of the potential environmental impacts from both the proposed action and its alternatives. The proposed action was described in an AF 813, enclosed in Appendix D. The environmental assessment is assigned RCS number 2006-152. The CES project number assigned is Construct Ground-to-Air Transmitter and Receiver (GATR) Communication Facility, JFSD200601.

### 1.1 INTRODUCTION

Located in northeastern North Dakota (ND), Grand Forks AFB is the first core refueling wing in Air Mobility Command (AMC) and home to 51 KC-135R Stratotanker aircraft. The host organization at Grand Forks AFB is the 319th Air Refueling Wing (ARW). Its mission is to guarantee global reach, by extending range in the air, supplying people and cargo where and when they are needed and provides air refueling and airlift capability support to United States Air Force (USAF) operations anywhere in the world, at any time. Organizational structure of the 319th ARW consists primarily of an operations group, maintenance group, mission support group, and medical group.

The location of the proposed action and the alternative action would be at Grand Forks AFB, ND. Grand Forks AFB covers approximately 5,420 acres of government-owned land and is located in northeastern ND, about 14 miles west of Grand Forks, along United States (US) Highway 2. Grand Forks (population 49,321) is the third largest city in ND. Appendix A includes a Location Map. The city, and surrounding area, is a regional center for agriculture, education, and government. It is located approximately 160 miles south of Winnipeg, Manitoba, and 315 miles northwest of Minneapolis, Minnesota. The total base population, as of May 2005, is approximately 7,175. Of that, 2,842 are military, 3,953 are military dependents, and 380 civilians working on base (Grand Forks AFB, 2005).

The Base Realignment and Closure (BRAC) 2005 Report submitted by the President to Congress became final after November 8, 2005. This is an important milestone in the restructuring of DoD's domestic base structure within the process established by Congress. The Department must begin this implementation process within 2 years from the date the President submitted to the Congress (September 15, 2005) and complete it within 6 years. The BRAC Commission's final recommendation included realignment of the 319<sup>th</sup> Air Refueling Wing's KC-135-R/T aircraft to Scott AFB, Seymour-Johnson AFB, MacDill AFB, Hickam AFB and McConnell AFB. It recommended modification of infrastructure at Grand Forks AFB to accommodate the emerging Unmanned Aerial Vehicle (UAV) mission. Twelve KC-135 aircraft will remain at Grand Forks AFB to facilitate an efficient and cost effective bed down of UAVs. The tankers will remain in place until the UAVs are operational at GFAFB, but not later than 31 Dec 2010, unless otherwise required for national emergencies. Grand Forks will remain an active Air Force installation with a new active duty/Air National Guard association unit created in anticipation of

emerging missions at Grand Forks. The 119<sup>th</sup> Fighter Wing at Hector International Airport Air National Guard Station at Fargo ND will be redesignated as a UAV wing, and facilities in Fargo will be expanded to accommodate the UAV ground control and intelligence analysis functions and expeditionary combat support elements. The Air Force will construct appropriate facilities on GFAFB to launch, recover, maintain and support the UAVs assigned to the 119<sup>th</sup> FW. One of the facilities proposed is the construction of a Crosswind Runway, angling northwest from the south end of the existing runway. The proposed location for the GATR facility would take into consideration the 7:1 imaginary surfaces of a potential crosswind runway. A map of this proposed runway and its relationship to the proposed GATR facility is located in Appendix E.

## 1.2 NEED FOR THE ACTION

The Communication Squadron is preparing to install new Ground-to-Air Transmitter and Receiver (GATR) communication antennas and systems, for tactical aircraft control and commercial air traffic control. The antennas are used to provide quick deployment and high-bandwidth communications in remote, hard-to-reach areas. These systems allow operators in central locations to communicate with aircraft operating in the locale where the ground-to-air center is deployed. The system is designed for unattended operation.

Currently there are two separate Air Traffic Control (ATC) radio facilities (a transmitter and a receiver site, Buildings 820 and 819). Both these facilities are in disrepair, with the need to upgrade and renovate due to water leaks (roof, floor, and walls) and rodent infestation. The current locations of the transmitter and receiver sites are located in the middle of a very swampy area with flooding after the winter snow melt. Non-jurisdictional wetlands are abundant in the area. The electrical systems in both buildings are marginal for communication equipment, backup power, and HVAC capacity. Short circuits in the equipment trip the main breaker and engage the back up generator instead of tripping the breaker which feeds equipment. Antenna towers (wooden poles) are in poor condition and are unsafe for climbing, which hinders maintenance on the already aging and weather beaten antennas. With the wet conditions of the area, the antenna slowly sinks and the input to the antenna corrodes, ultimately degrading and failing. Intermittent problems with radio communication between ATC and aircraft on the ground in certain locations of the runway and ramp are evident (due to the tree line located outside the fence line). The current site along the base exterior fence line is also an AT/FP concern.

A modern, functionally designed, facility is needed for an efficient, effective operation of the new equipment. The existing facilities 819, Receiver Site, and 820, Transmitter Site, are not sufficient to meet the demands of the GATR equipment. A site survey was conducted in 2004 to determine the possibility of using one of the existing sites, 819 or 820, for the GATR site. One of the biggest obstacles to using 819 or 820 is keeping the communication hardware operational while renovating the surrounding facility.

## 1.3 OBJECTIVES FOR THE ACTION

The proposed project would provide a Ground-to-Air Transmitter and Receiver (GATR) facility to house the new Ground-to-Air Transmitter and Receiver (GATR) equipment, with appropriate

HVAC, mechanical, electrical and backup power support. The new facility would be located in the vicinity of 819 or 820 to ease the communications transition, minimize downtime of the communication functions, and maximize the use of existing cable, communication and utility infrastructure. The existing radio equipment racks (about 20 total) and radios (both UHF and VHF) will be consolidated from two into one facility. Both the transmitter and receiver UHF and VHF antennas will be consolidated onto new towers/poles. Current coaxial cable should be reusable. New antennas and associated cabling will be purchased with communication funds, due to the poor condition of the existing antenna from harsh weather conditions.

The term “GATR” refers to taking the transmitter and receiver sites and consolidating into one “ground-to-air transmitter and receiver (GATR)” site. It’s a very common project throughout the Air Force. It keeps long term maintenance and facility costs down, while minimizing the footprint out on the airfield. The proposed location meets the criteria of the 7:1 imaginary surface of the current runway and potential future crosswind runway and will not require an airfield waiver.

#### 1.4 SCOPE OF EA

This EA identifies, describes, and evaluates the potential environmental impacts associated with construction of a Ground-to-Air Transmitter and Receiver (GATR) facility on Grand Forks AFB. This analysis covers only this item. It does not include any previous construction or construction of facilities, parking lots, associated water drainage structures, or other non-related construction and construction activities.

The following must be considered under the NEPA, Section 102(E).

- Air Quality
- Noise
- Wastes, Hazardous Materials, and Stored Fuels
- Water Resources
- Biological Resources
- Socioeconomic Resources
- Cultural Resources
- Land Use
- Transportation Systems
- Airspace/Airfield Operations
- Safety and Occupation Health
- Environmental Management
- Environmental Justice

#### 1.5 DECISION(S) THAT MUST BE MADE

This EA evaluates the environmental consequences from construction of a Ground-to-Air Transmitter and Receiver (GATR) facility on Grand Forks AFB. NEPA requires that environmental impacts be considered prior to final decision on a proposed project. The

Environmental Management Flight Chief would determine if a Finding of No Significant Impact can be signed or if an Environmental Impact Statement (EIS) must be prepared. Preparation of an environmental analysis must be accomplished prior to a final decision regarding the proposed project and must be available to inform decision makers of potential environmental impacts of selecting the proposed action or any of the alternatives.

## 1.6 APPLICABLE REGULATORY REQUIREMENTS AND REQUIRED COORDINATION

These regulations require federal agencies to analyze potential environmental impacts of proposed actions and alternatives and to use these analyses in making decisions on a proposed action. All cumulative effects and irretrievable commitment of resources must also be assessed during this process. The Council on Environmental Quality (CEQ) regulations declares that an EA is required to accomplish the following objectives:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when an EIS is not necessary, and facilitate preparation of an EIS when necessary.

Air Force Instruction (AFI) 32-7061 as promulgated in 32 Code of Federal Regulations (CFR) 989, specifies the procedural requirements for the implementation of NEPA and the preparation of an EA. Other environmental regulatory requirements relevant to the proposed action and alternatives are also in this EA. Regulatory requirements including, but not restricted to the following programs would be assessed:

- AF Environmental Impact Analysis Process (EIAP) (32 CFR 989)
- AFI 32-7020, Environmental Restoration Program
- AFI 32-7040, Air Quality Compliance
- AFI 32-7041, Water Quality Compliance
- AFI 32-7042, Solid and Hazardous Waste Compliance
- AFI 32-7063, Air Installation Compatible Use Zone (AICUZ) Program
- AFI 32-7064, Integrated Natural Resource Management
- Archaeological Resources Protection Act (ARPA) [16 U.S.C. Sec 470a-11, et seq., as amended]
- Clean Air Act (CAA) [42 U.S.C. Sec 7401, et seq., as amended]
- Clean Water Act (CWA) [33 U.S.C. Sec 400, et seq.]
- CWA [33 U.S.C. Sec 1251, et seq., as amended]
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) [42 U.S.C. Sec. 9601, et seq.]
- Defense Environmental Restoration Program [10 U.S.C. Sec. 2701, et seq.]
- Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 [42 U.S.C. Sec. 11001, et seq.]
- Endangered Species Act (ESA) [16 U.S.C. Sec 1531-1543, et seq.]

- Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality as Amended by EO 11991
- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- EO 12372, Intergovernmental Review of Federal Programs
- EO 12898, Environmental Justice
- EO 12989 Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks
- Hazardous Materials Transportation Act of 1975 [49 U.S.C. Sec 1761, et seq.]
- NEPA of 1969 [42 U.S.C. Sec 4321, et seq.]
- National Historic Preservation Act (NHPA) of 1966 [16 U.S.C. Sec 470, et seq., as amended]
- The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 [Public Law 101-601, 25 U.S.C. Sec. 3001-3013, et seq.]
- Noise Control Act of 1972 [42 U.S.C. Sec. 4901, et seq., Public Law 92-574]
- ND Air Pollution Control Act (Title 23) and Regulations
- ND Air Quality Standards (Title 33)
- ND Hazardous Air Pollutants Emission Standards (Title 33)
- Occupational Safety and Health Act (OSHA) of 1970 [29 U.S.C. Sec. 651, et seq.]
- Resource Conservation and Recovery Act (RCRA) of 1976 [42 U.S.C. Sec. 6901, et seq.]
- Toxic Substances Control Act (TSCA) of 1976 [15 U.S.C. Sec. 2601, et seq.]

Grand Forks AFB has a National Pollutant Discharge Elimination System (NPDES) permit for both waste water and storm water to cover base-wide industrial activities. Implementation of the proposed actions or alternative actions in the construction could possibly disturb one acre. The contractor performing the installation would then need to obtain a separate NPDES construction permit from the North Dakota Department of Health (NDDH). If less than an acre, the base permit would allow discharge of storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover.

Scoping for this EA included discussion of relevant issues with members of the environmental management and bioenvironmental flights. Scoping letters requesting comments on possible issues of concern are sent to agencies with pertinent resource responsibilities, as listed in Section 6.0. In accordance with 32 CFR 989, a copy of the final EA is submitted to the ND Division of Community Services.

Applicable regulatory requirements and required coordination before and during construction include a Work Clearance Request, Stormwater Protection Plan, Dust Control Plan, Spill Control Plan, and Erosion and Sediment Control Plan to the CEV Water Program Manager; a Spill Control Plan and Waste Disposal Plan to the CEV Pollution Prevention Manager; and copies of all plans to the Contracting Officer.

## 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

### 2.1 INTRODUCTION

Based on the descriptions of the relevant environmental resources presented in Section 3 and the predictions and analyses presented in Section 4, this section presents a comparative summary matrix of the alternatives (the heart of the analysis), providing the decision maker and the public with a clear basis for choice among the alternatives.

This section has five parts:

- Selection Criteria for Alternatives
- Alternatives Considered but Eliminated from Detailed Study
- Detailed Descriptions of the Three Alternatives Considered
- Comparison of Environmental Effects of the Proposed Action and Alternatives
- Identification of the Preferred Alternative

### 2.2 SELECTION CRITERIA FOR ALTERNATIVES

Selection criteria used to evaluate the Proposed and Alternative Actions include the following:

- A cost effective method to provide a facility to house the GATR equipment at GFAFB.
- A location to meet the criteria of the 7:1 imaginary surface of a potential crosswinds runway, a potential project for a future UAV mission.
- Minimum mission requirements include efficiency, effectiveness, legality, force protection and safety to meet AF requirements.
- Minimum environmental standards include OSHA, AFOSH, NFPA, AFI, CFR, EPA and North Dakota standards for noise, air, water, safety, HM/HW, vegetation, cultural, geology, soils, and socioeconomic.

### 2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

There was an alternative considered but eliminated from detailed study. In 2004 an original site survey at GFAFB for costing to consolidate the ATR Receiver (819) and Transmitter (820) to a single GATR site was accomplished by Tinker AFB. The initial report recommended that the Transmitter site 820 be used as the consolidated site because it is in better overall condition, is a flatter site, and easier to get to. It is a smaller building at 1,200 SF; however, a supplemental storage area could provide the additional space needed. There is enough floor space to hold the additional equipment racks, if the racks are moved closer together, and a UPS placed on each rack. The Receiver site 819 is a larger building at 1,500 SF; however it is of poorer condition. Both buildings need HVAC and electrical system upgrades. This survey to make Bldg 820 the consolidated site has since been discarded, due to the prohibitive costs to move cables twice.

### 2.4 DESCRIPTION OF PROPOSED ALTERNATIVES

This section describes the activities that would occur under three alternatives: the no action alternative, the proposed action, and an action alternative. These three alternatives provide the decision maker with a reasonable range of alternatives from which to choose.

2.4.1 Alternative 1 (No Action Alternative): Status Quo. The no action alternative would be to leave the base as it is. Communications support equipment would be located in substandard facilities. As deterioration progresses, the Communication Squadron may lose communication support or contact to aircraft. Loss of UHF/VHF receiver/transmitter site capability prohibits the ATC controllers to communicate with both military and civilian aircraft. Aircraft would need to be diverted to another location. The radio receivers and transmitters are critical for controllers to communicate with pilots for safe air traffic control. A poor working environment adversely affects the mission at Grand Forks AFB.

2.4.2 Alternative 2 (Proposed Action): Construct a Ground-to-Air Transmitter and Receiver (GATR) facility. See the AF 813 in Appendix D for a description of the proposal, and maps in Appendix E for the proposed location to construct a Ground-to-Air Transmitter and Receiver (GATR) facility. Construct a facility to house the GATR state-of-the-art communications equipment at a location estimated 650' north of 819 on the east side of road. The Communication Squadron proposes a 50x35' facility, but the final size is contingent on the AMC funding limit. Project shall include masonry construction (burnished black), concrete floor slab on grade with footings, standing seam metal roof, 12 foot high ceiling, underground electrical service, gravel access road, self-contained emergency generator, uninterrupted power supply (UPS), electric heat, air conditioning, facility penetration for communications, fire detection, and all required site improvements. No water, sewer, or fire suppression systems required. All work must be coordinated with the communication equipment contractor/designer. The electric will consist of commercial (12.47/7.2 KV grounded wye), primary/secondary pad mount transformer, and new generator with AST (self-contained unit with fuel storage). An overhead wireway (4"x4" minimum) should be provided for power runs to equipment racks. A minimum of two 4-inch conduits with inner duct should be provided from the nearest manhole to the facility demarc for fiber and copper cables. A minimum of six 4-inch ducts (two for each antenna tower) are required from antenna towers to a large junction box mounted on wall of facility (for antenna surge suppressor mounting). Junction box with six 4-inch ports through the wall into the facility, with ground bar connected directly to the earth-electrode subsystem for grounding of surge suppressors. Overhead ladder rack should be provided above the entire length of the facility from the antenna ports to the equipment racks for communications and cabling. The HVAC should consist of all electric heat, AC (direct expansion) maintained at 70F 20-80% RH non-condensing. Facility floor should be grounded in accordance with MIL-HDBK-419A, MIL-STD-188-124B, MIL-HDBK-1857, and MIL-HDBK-454A and provided with Equipotential Ground Plane. In the event a pre-engineered metal building is used for funding reasons, all metal parts would be bonded in accordance with MILSTD-188-124B, Section 5.2. All structural joints would connect IAW paragraph 5.2.6. and mating surfaces cleaned IAW paragraph 5.2.8. to ensure electrical continuity of the structure is maintained.

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provide appropriate foundations. Tower locations and antenna placements on towers would be selected in accordance with guidelines contained in TO 31Z3-10-9. The contractor through coordination with CES would be required to obtain a FAA Aerospace Waiver prior to use of any construction equipment on the airfield. Estimates for equipment power requirements are total equipment power = 8975 watts, and total equipment BTU = 30,644 BTU; based on the use of 17 GRT-22 Transmitters x 140 watts = 2380 watts, 6 AM-6155 Amplifiers x 610 watts = 3660 watts, 16 GRR-24 Receivers x 50 watts = 800 watts, 9 GRT-21 Transmitters x 140 watts = 1260 watts, 11 GRR-23 Receivers x 50 watts = 550 watts, 1 G/A Patch Panel x 250 watts = 250 watts, and 1 Fiber Optic MUX x 75 watts = 75 watts. A facility UPS with capacity of 15 KVA sized for 20 minutes of reserve power is recommended. A distribution panel should be provided with minimum of 24 single pole 20A breakers to provide power for equipment racks. The back up generator should have an automatic transfer panel and be sized to power the UPS, lights, and HVAC for the facility, probably 25 KW. Purchase new generator--both the gensets at bldg 819 and 820 are over 15 years old and according to AMC policy are in the age window to be programmed for replacement by the time they are 20 years old. Also they are both only 15 KW generators and 240 volt single phase. Per new AMC AFI32-1063 in 2005, all gensets are to have a facility load of at least 75% of the generator rated load and if 3-phase power would be required, all automatic transfer switches installed are to be of the maintenance bypass/isolation type with a switched neutral (4-pole switch). The proposed location avoids the wetlands in the area

2.4.3 Alternative 3: Locate GATR facility 750' north of facility 819 on the west side of the road. The area has many wetlands which must be avoided when designing the facility and the three adjacent 80 ft antenna towers. This location would place the facility and antenna another 100 feet farther from the potential crosswind runway. The proposed location narrowly avoids the wetlands in the area

## 2.5 DESCRIPTION OF PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS RELEVANT TO CUMULATIVE IMPACTS

Impacts from the Proposed Action would be concurrent with other actions occurring at Grand Forks AFB. There are several other construction and demolition projects occurring on Grand Forks AFB in the same time frame. These projects are addressed under separate NEPA documents. A related EIAP document is the Environmental Assessment (EA) and FONSI accomplished in #2002-116 to remove petroleum contaminated soil near 820. Multiple Air Transmitter and Receiver (ATR) facility 819 and 820 projects of the past have been categorically excluded, including an economic assessment to determine feasibility to repair versus construct a new facility; add 110V power in racks; emergency lights; lighting to illuminate AST; and denied request to add restroom and water.

## 2.6 SUMMARY COMPARISON OF THE EFFECTS OF ALL ALTERNATIVES

Potential impacts from implementing the No Action Alternative, the Proposed Action, and Alternative are discussed in detail in Chapter 4.

## 2.7 IDENTIFICATION OF PREFERRED ALTERNATIVE

The preferred alternative is the proposed action to construct a Ground-to-Air Transmitter and Receiver (GATR) facility.

Table 2.6.1: Summary of Environmental Impacts

	No Action Alternative 1	Proposed Action 2	Alternative 3
Legend: ST = short-term; LT = long-term			
Air Quality	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Noise	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Wastes, Hazardous Materials, and Stored Fuels	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Water Resources			
Ground Water	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Surface Water	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Wastewater	None	None	None
Water Quality	None	None	None
Wetlands	None	Potential Adverse ST Impact	Potential Adverse ST Impact
Biological Resources			
Vegetation	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Noxious Weeds	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Wildlife	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Threatened and Endangered Species	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Socioeconomic Resources	None	Minor Positive ST Impact	Minor Beneficial ST Impact
Cultural Resources	None	None	None
Land Use	None	None	None
Transportation Systems	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Airspace/Airfield Operations			
Aircraft Safety	None	None	None
Airspace Compatibility	None	None	None
Safety and Occupational Health	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Environmental Management			
Installation Restoration Program	None	None	None
Geological Resources	None	None	None
Pesticide Management	None	Minor Adverse ST Impact	Minor Adverse ST Impact
Environmental Justice	None	None	None

### 3.0 AFFECTED ENVIRONMENT

#### 3.1 INTRODUCTION

This section succinctly describes the operational concerns and the environmental resources relevant to the decision that must be made concerning this proposed action. Environmental concerns and issues relevant to the decision to be made and the attributes of the potentially affected environment are studied in greater detail in this section. This descriptive section, combined with the definitions of the alternatives in Section 2, and their predicted effects in Section 4, establish the scientific baseline against which the decision-maker and the public can compare and evaluate the activities and effects of all the alternatives.

#### 3.2 AIR QUALITY

Grand Forks AFB has a humid continental climate that is characterized by frequent and drastic weather changes. The summers are short and humid with frequent thunderstorms. Winters are long and severe with almost continuous snow cover. The spring and fall seasons are generally short transition periods. The average annual temperature is 40 Farenheit (F) and the monthly mean temperature varies from 6° F in January to 70° F in July. Mean annual precipitation is 19.5 inches. Rainfall is generally well distributed throughout the year, with summer being the wettest season and winter the driest. An average of 34 thunderstorm days per year is recorded, with some of these storms being severe and accompanied by hail and tornadoes. Mean annual snowfall recorded is 40 inches with the mean monthly snowfall ranging from 1.6 inches in October to 8.0 inches in March. Relative humidity averages 58 percent annually, with highest humidity being recorded in the early morning. The average humidity at dawn is 76 percent. Mean cloud cover is 48 percent in the summer and 56 percent in the winter (USAF, 2003).

Table 3.2-1: Climate Data for Grand Forks AFB, ND

Month	Mean Temperature (°F)			Precipitation (Inches)		
	Maximum	Minimum	Monthly	Mean	Maximum	Minimum
January	15	-1	6	0.7	2.4	0.1
February	21	5	13	0.5	3.2	0.0
March	34	18	26	1.0	2.9	0.0
April	53	32	41	1.5	4.0	0.0
May	69	47	56	2.5	7.8	0.5
June	77	56	66	3.0	8.1	0.8
July	81	61	70	2.7	8.1	0.5
August	80	59	67	2.6	5.5	0.1
September	70	49	57	2.3	6.2	0.3
October	56	37	44	1.4	5.7	0.1
November	34	20	26	0.7	3.3	0.0
December	20	6	12	0.6	1.4	0.0

Source: AFCCC/DOO, October 1998

Wind speed averages 10 miles per hour (mph). A maximum wind speed of 74 mph has been recorded. Wind direction is generally from the northwest during the late fall, winter, and spring, and from the southeast during the summer.

Grand Forks County is included in the ND Air Quality Control Region. This region is in attainment status for all criteria pollutants. In 1997, the ND Department of Health (NDDH) conducted an Air Quality Monitoring Survey that indicated that the quality of ambient air in ND is generally good as it is located in an attainment area (NDDH, 1998). Grand Forks AFB has the following air permits: T5-F78004 (permit to operate) issued by NDDH and a CAA Title V air emissions permit.

The United States Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS), which define the maximum allowable concentrations of pollutants that may be reached, but not exceeded within a given time period. The NAAQS regulates the following criteria pollutants: Ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), and particulate matter. The ND Ambient Air Quality Standards (NDAAQS) were set by the State of ND. These standards are more stringent and emissions for operations in ND must comply with the Federal or State standard that is the most restrictive. There is also a standard for hydrogen sulfide (H<sub>2</sub>S) in ND.

Prevention of significant deterioration (PSD) regulations establishes SO<sub>2</sub>, particulate matter 10 microns in diameter (PM<sub>10</sub>), and NO<sub>2</sub> that can be emitted above a premeasured amount in each of three class areas. Grand Forks AFB is located in a PSD Class II area where moderate, well-controlled industrial growth could be permitted. Class I areas are pristine areas and include national parks and wilderness areas. Significant increases in emissions from stationary sources (100 tons per year (tpy) of CO, 40 tpy of nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), or sulfur oxides (SO<sub>x</sub>), or 15 tpy of PM<sub>10</sub>) and the addition of major sources requires compliance with PSD regulations. There is also a 25 ton/year level for total particulate.

Air pollutants include O<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, Pb, and particulate matter. Ground disturbing activities create PM<sub>10</sub> and particulate matter 2.5 microns in diameter (PM<sub>2.5</sub>). Combustion creates CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> particulate matter and the precursors (VOC and NO<sub>2</sub>) to O<sub>3</sub>. Only small amounts of Hazardous Air Pollutants (HAP) are generated from internal combustion processes or earth-moving activities. The Grand Forks AFB Final Emissions Survey Report (USAF, 1996) reported that Grand Forks AFB only generated small levels HAPs, 10.3 tpy of combined HAPs and 2.2 tpy maximum of a single HAP (methyl ethyl ketone). Methyl Ethyl Ketone is associated with aircraft and vehicle maintenance and repair. Secondary sources include fuel storage and dispensing (USAF, 2001a).

Table 3.2-2 National Ambient Air Quality Standards (NAAQS) and ND Ambient Air Quality Standards (NDAAQS)				
Pollutant	Averaging Time	NAAQS $\mu\text{g}/\text{m}^3$ (ppm) <sup>a</sup>		NDAAQS $\mu\text{g}/\text{m}^3$ (ppm) <sup>a</sup>
		Primary <sup>b</sup>	Secondary <sup>c</sup>	
O <sub>3</sub>	1 hr	235 (0.12)	Same	Same
	8 hr <sup>e</sup>	157 (0.08)	Same	None
CO	1 hr	40,000 (35)	None	40,000 (35)
	8 hr	10,000 (9)	None	10,000 (9)
NO <sub>2</sub>	AAM <sup>d</sup>	100 (0.053)	Same	Same
SO <sub>2</sub>	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 <sub>10</sub>	AAM	50	Same	Same
	24 hr	150	Same	Same
PM <sub>2.5</sub> <sup>e</sup>	AAM	65	Same	None
	24 hr	15	Same	None
Pb	¼ year	1.5	Same	Same
H <sub>2</sub> S	1 hr	None	None	280 (0.20)
	24 hr	None	None	140 (0.10)
	3 mth	None	None	28 (0.02)
	AAM	None	None	14 (10)
	Instantaneous	None	None	14 (10)

<sup>a</sup> $\mu\text{g}/\text{m}^3$  – micrograms per cubic meter; ppm – parts per million  
<sup>b</sup>National Primary Standards establish the level of air quality necessary to protect the public health from any known or anticipated adverse effects of pollutant, allowing a margin of safety to protect sensitive members of the population.  
<sup>c</sup>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.  
<sup>d</sup>AAM – Annual Arithmetic Mean.  
<sup>e</sup>The Ozone 8-hour standard and the PM 2.5 standards are included for information only. A 1999 federal court ruling blocked implementation of these standards, which USEPA proposed in 1997. USEPA has asked the US Supreme Court to reconsider that decision (USEPA, 2000).  
PM<sub>10</sub> is particulate matter equal to or less than 10 microns in diameter.  
PM<sub>2.5</sub> is particulate matter equal to or less than 2.5 microns in diameter.  
Source: 40 CFR 50, ND Air Pollution Control Regulations – North Dakota Administrative Code (NDAC) 33-15

### 3.3 NOISE

Noise generated on Grand Forks AFB consists mostly of aircraft, vehicular traffic and construction activity. Most noise is generated from aircraft during takeoff and landing and not from ground traffic. Noise levels are dependent upon type of aircraft, type of operations, and distance from the observer to the aircraft. Duration of the noise is dependent upon proximity of the aircraft, speed, and orientation with respect to the observer.

Table 3.3-1 Typical Decibel Levels Encountered in the Environment and Industry			
Sound Level (dBA) <sup>a</sup>	Maximum Exposure Limits	Source of Noise	Subjective Impression
10			Threshold of hearing
20		Still recording studio; Rustling leaves	
30		Quiet bedroom	
35		Soft whisper at 5 ft <sup>b</sup> ; Typical library	
40		Quiet urban setting (nighttime); Normal level in home	Threshold of quiet
45		Large transformer at 200 ft	
50		Private business office; Light traffic at 100 ft; Quiet urban setting (daytime)	
55		Window air conditioner; Men's clothing department in store	Desirable limit for outdoor residential area use (EPA)
60		Conversation speech; Data processing center	
65		Busy restaurant; Automobile at 100 ft	Acceptable level for residential land use
70		Vacuum cleaner in home; Freight train at 100 ft	Threshold of moderately loud
75		Freeway at 10 ft	
80		Ringling alarm clock at 2 ft; Kitchen garbage disposal; Loud orchestral music in large room	Most residents annoyed
85		Printing press; Boiler room; Heavy truck at 50 ft	Threshold of hearing damage for prolonged exposure
90	8 hr <sup>c</sup>	Heavy city traffic	
95	4 hr	Freight train at 50 ft; Home lawn mower	
100	2 hr	Pile driver at 50 ft; Heavy diesel equipment at 25 ft	Threshold of very loud
105	1 hr	Banging on steel plate; Air Hammer	
110	0.5 hr	Rock music concert; Turbine condenser	
115	0.25 hr	Jet plane overhead at 500 ft	
120	< 0.25 hr	Jet plane taking off at 200 ft	Threshold of pain
135	< 0.25 hr	Civil defense siren at 100 ft	Threshold of extremely loud

<sup>a</sup>dBA – decibals  
<sup>b</sup>ft – feet  
<sup>c</sup>hr - hours  
Source: US Army, 1978

Table 3.3-2 Approximate Sound Levels (dBA) of Construction Equipment						
Equipment Type	Sound Levels (dBA) at Various Distances (ft)					
	50	100	200	400	800	1,600
Front-end Loader	84	78	72	66	60	54
Dump Truck	83	77	71	65	59	53
Truck	83	77	71	65	59	53
Tractor	84	78	72	66	58	52

Source: Thurman, 1976; US Army, 1978

Because military installations attract development in proximity to their airfields, the potential exists for urban encroachment and incompatible development. The USAF utilizes a program known as AICUZ to help alleviate noise and accident potential problems due to unsuitable community development. AICUZ recommendations give surrounding communities alternatives to help prevent urban encroachment. Noise contours are developed from the Day-Night Average A-Weighted Sound Level (DNL) data which defines the noise created by flight operations and ground-based activities. The AICUZ also defines Accident Potential Zones (APZs), which are rectangular corridors extending from the ends of the runways. Recommended land use activities and densities in the APZs for residential, commercial, and industrial uses are provided in the base's AICUZ study. Grand Forks AFB takes measures to minimize noise levels by evaluating aircraft operations. Blast deflectors are utilized in designated areas to deflect blast and minimize exposure to noise.

### 3.4 WASTES, HAZARDOUS MATERIALS, AND STORED FUELS

#### 3.4.1 Hazardous Waste, Hazardous Material, Recyclable Material

Hazardous wastes, as listed under the RCRA, are defined as any solid, liquid, contained gaseous, or combination of wastes that pose a substantive or potential hazard to human health or the environment. On-base hazardous waste generation involves three types of on-base sites: an accumulation point (90-day), satellite accumulation points, and spill cleanup equipment and materials storage (USAF, 2001c). Discharge and emergency response equipment is maintained in accessible areas throughout Grand Forks AFB. The Fire Department maintains adequate fire response and discharge control and containment equipment. Equipment stores are maintained in buildings 409 and 530. Petroleum contaminated soils generated from excavations throughout the base can be treated at the land treatment facility located on base. These solid wastes are tilled or turned several times a year to remediate the soils to acceptable levels.

Recyclable materials from industrial facilities are collected in the recycling facility, in building 671. Paper, cardboard, and wood are collected in separate storage bins. Glass, plastics and metal cans are commingled. Curbside containers are used in housing for recyclable materials. A contractor collects these materials and transports them off base for processing.

The Environmental Management Flight manages the hazardous material through a contract with Science Applications International Corporation (SAIC). Typical hazardous materials include reactive materials such as explosives, ignitables, toxics, and corrosives. Improper storage can impact human health and the safety of the environment.

Grand Forks AFB does apply insecticides and herbicides on Grand Forks AFB property improved zones. Personnel from the 319 CES Entomology Flight and the ground maintenance contractor perform the application. Applicators have personal certifications from the state of North Dakota. Mixing of herbicides by the current grounds keeping contractor is done at their off-base location, and transported on base for application. A selective use herbicide containing 2-4-D or a low rate glyphosate, such as Roundup, is likely to be utilized under the maintenance phase of the plan. 2,4-dichlorophenoxyacetic acid (2,4-D), is the most widely used herbicide in the world to kill unwanted broad-leaf plants. Roundup contains glyphosate, isopropylamine salt,

and is a popular, effective herbicide. No additional pesticide/herbicide accumulation other than residential applications on a case-by-case basis is expected. Aerial spraying for mosquitoes has occurred in the area with base-wide spraying. All weeds and grass in shrubs, plant beds and landscaped areas shall be removed and may be followed by chemical treatment if necessary. The use of chemicals in landscaped areas is done at the contractors risk as any damaged plants would be replaced at contractor's expense. All herbicide usage on the installation is pre-approved and authorized under the Environmental Management Information System and the DoD Pesticide Standard Pesticide list. All applicators are certified in herbicide application.

### 3.4.2 Underground and Above Ground Storage Tanks

Since Grand Forks AFB is a military installation with a flying mission, there are several aboveground and underground fuel storage tanks (ASTs and USTs). Gasoline, diesel fuel, heating fuel, JP-8 aircraft fuel, and oil-water separator (OWS)-recovered oils are stored in thirty-nine (39) USTs. Twenty (20) regulated USTs include three (3) gasoline tanks, eight (8) diesel tanks, three (3) JP-8 tanks, and six (6) OWS product recovery tanks. Deferred USTs include five (5) JP-8 tanks. Five (5) USTs exempt from regulation include one (1) heating oil tank, three (3) emergency spill containment tanks, and one (1) hydraulic oil recovery tank. A map of UST locations is found in Appendix C.

Gasoline, diesel fuel, heating oil, JP-8, and used oil are stored in fifty-eight (58) ASTs. The majority of petroleum is JP-8 stored in six (6) tanks with a capacity of 3,990,000 gallons for the hydrant fuel system. Diesel fuel is stored in forty-five (45) tanks primarily for emergency generators. Other tanks include: heating oil stored in three (2) tanks; gasoline stored in two (2) tanks; and, used oil stored in three (3) tanks. All ASTs either have secondary containment or are programmed to have secondary containment installed. The six (6) hydrant fuel system tanks each are contained by a concrete dike system. A map of AST locations is found in Appendix C.

Runway deicing fluid (potassium acetate) is stored in two (2) 5000 gallon tanks while aircraft deicing fluid (propylene glycol) is stored in a 20,000 gallon tank (Type I) and a 4,000 gallon tank (Type IV). The Synthetic Natural Gas yard, including six tanks of propane, 60,000 gallons each, for a total of 360,000 gallons, is located north of the south gate. The propane is available for heating when the demand for natural gas is at peak.

### 3.4.3 Solid Waste Management

Hard fill, construction debris, and inert waste generated by Grand Forks AFB are disposed of at a permitted off-base landfill. All on-base household garbage and solid waste is collected by a contractor and transported to the Grand Forks Municipal Landfill, which opened in 1982. The majority of construction debris is disposed of at Berger Landfill (permit number IT-198) while municipal and asbestos waste is disposed of at the Grand Forks Municipal Landfill (SW-069).

GFAFB also operates a land treatment facility (IT-183) for the remediation of petroleum-contaminated soils (PCSs). PCSs are generated on-base through spills, are encountered while excavating for various subsurface repairs, or encountered while replacing or removing underground storage tanks and piping.

## 3.5 WATER RESOURCES

### 3.5.1 Ground Water

Chemical quality of ground water is dependent upon the amount and type of dissolved gases, minerals, and organic material leached by water from surrounding rocks as it flows from recharge to discharge areas. The water table depth varies throughout the base, from a typical 1-3 ft to 10 ft or more below the surface.

Even though the Dakota Aquifer has produced more water than any other aquifer in Grand Forks County, the water is very saline and generally unsatisfactory for domestic and most industrial uses. Its primary use is for livestock watering. It is sodium chloride type water with total dissolved solids concentrations of about 4,400 ppm. The water generally contains excessive chloride, iron, sulfate, total dissolved solids, and fluoride. The water from the Dakota is highly toxic to most domestic plants and small grain crops, and in places, the water is too highly mineralized for use as livestock water (Hansen and Kume, 1970).

Water from wells tapping the Emerado Aquifer near Grand Forks AFB is generally of poor quality due to upward leakage of water from underlying bedrock aquifers. It is sodium sulfate type water with excessive hardness, chloride, sulfate, and total dissolved solids. Water from the Lake Agassiz beach aquifers is usually of good chemical quality in Grand Forks County. The water is a calcium bicarbonate type that is relatively soft. The total dissolved content ranges from 308 to 1,490 ppm. Most water from beach aquifers is satisfactory for industrial, livestock, and agricultural uses (Hansen and Kume, 1970).

Grand Forks AFB draws 85 to 90 percent of its water for industrial, commercial and housing functions from the City of Grand Forks and 10 to 15 percent from Agassiz Water.

### 3.5.2 Surface Water

Natural surface water features located on or near Grand Forks AFB are the Turtle River and Kellys Slough National Wildlife Refuge (NWR). Drainage from surface water channels ultimately flows into the Red River.

The Turtle River, crossing the base boundary at the northwest corner, is very sinuous and generally flows in a northeasterly direction. It receives surface water runoff from the western portion of Grand Forks AFB and eventually empties into the Red River of the North that flows north to Lake Winnipeg, Canada. The Red River drainage basin is part of the Hudson Bay drainage system. At Manvel, ND, approximately 10 miles northeast of Grand Forks AFB, the mean discharge of the Turtle River is 50.3 feet cubed per second (ft<sup>3</sup>/s). Peak flows result from spring runoff in April and minimum flows (or no flow in some years) occur in January and February.

NDDH has designated the Turtle River to be a Class II stream, it may be intermittent, but, when flowing, the quality of the water, after treatment, meets the chemical, physical, and

bacteriological requirements of the NDDH for municipal use. The designation also states that it is of sufficient quality to permit use for irrigation, for propagation of life for resident fish species, and for boating, swimming, and other water recreation.

Kelly's Slough NWR occupies a wide, marshy flood plain with a poorly defined stream channel, approximately two miles east and downstream of Grand Forks AFB. Kellys Slough NWR receives surface water runoff from the east half of the base and effluent from the base sewage lagoons located east of the base. Surface water flow of the slough is northeasterly into the Turtle River Drainage from surface water channels ultimately flowing into the Red River. Floodplains are limited to an area 250 ft on either side of Turtle River (about 46 acres on base). Appendix C contains a map depicting floodplains. Any development in or modifications to floodplains must be coordinated with the Corps of Engineers and the Federal Emergency Management Agency (FEMA). The North Dakota State Water Commission requires that any structure in the floodplain have its lowest floor above the identified 100-year flood level.

Surface water runoff leaves Grand Forks AFB at four primary locations related to identifiable drainage areas on base. The four sites are identified as northeast, northwest, west, and southeast related to the base proper. These outfalls were approved by the NDDH as stated in the Grand Forks AFB ND Pollutant Discharge Elimination System (NDPDES) Permit NDR02-0314 Stormwater Discharges from Industrial Activity. Of the four outfall locations, the west and northwest sites flow into the Turtle River, the northeast site flows to the north ditch and the southeast outfall flows into the south ditch. The latter two flow to Kellys Slough and then the Turtle River. All drainage from these surface water channels ultimately flows into the Red River. The Bioenvironmental Engineering Office samples the four outfall locations during months when de-icing activities occur on base.

### 3.5.3 Waste Water

Grand Forks AFB discharges its domestic and industrial wastewater to four stabilization lagoons located east of the main base. The four separate treatment cells consist of one primary treatment cell, two secondary treatment cells, and one tertiary treatment cell. Wastewater effluent is discharged under ND Permit ND0020621 into Kellys Slough. Wastewater discharges occur several times, lasting up to one week each, sometime between mid-April through November. Industrial wastewater at the base comprises less than ten percent of the total flow to the lagoons.

### 3.5.4 Water Quality

According to the National Water Quality Inventory Report (USEPA, 1995), ND reports the majority of 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. Grand Forks AFB receives water from Grand Forks and Lake Agassiz Water. The city recovers its water from the Red River and the Red Lake River, while the water association provides water from aquifers. The water association recovers water from well systems within glacial drift aquifers (USAF, 1999). The 319th Civil Engineer Squadron tests the water received on base daily for fluorine and chlorine. The 319th

Bioenvironmental Flight collects monthly bacteriological samples to be analyzed at the ND State Laboratory.

### 3.5.5 Wetlands

About 246,900 acres in the county are drained wetland Type I (wet meadow) to Type V (open freshwater). Approximately 59,500 acres of wetland Type I to V are used for wetland habitat. Wetland Types IV and V include areas of inland saline marshes and open saline water. Kellys Slough NWR occupies a wide, marshy flood plain with a poorly defined stream channel, approximately two miles east and downstream of Grand Forks AFB. Kellys Slough NWR is the most important regional wetland area in the Grand Forks vicinity. EO 11990 requires zero loss of wetlands. Earlier surveys indicated Grand Forks AFB had 49 wetlands, covering 23.9 acres of wetlands, including 33 jurisdictional wetlands covering 12.2 acres. A wetland delineation conducted in 2004 indicated that the base has increased to 192 wetlands totaling 301 acres. Categorization includes 15 wetlands identified as jurisdictional comprising 145 acres on base; one Riverine wetland totaling 3 acres in Turtle River; one PEM/Lacustrine wetland totaling 47 acres; 190 Palustrine Wetlands totaling 251 acres, classified as 32 Scrub-shrub wetlands at 76 acres, 3 Forested Wetlands at approximately 1 acre, and 155 Emergent Wetlands at 174 acres. Vegetation is robust at GFAFB wetlands, and they are characterized as typical prairie potholes found within the northern plains ecoregion.

Wetlands on Grand Forks AFB occur frequently in drainage ways, low-lying depressions, and prairie potholes. Wetlands are highly concentrated in drainage ways leading from the wastewater treatment lagoons to Kellys Slough NWR. The majority of wetland areas occur in the northern and central portions of base, near the runway, while the remaining areas are near the eastern boundary and southeastern corner of base. Development in or near these areas must include coordination with the ND State Water Commission and the USACE. To help preserve wetlands, the North Dakota, Grand Forks County regional office of the Natural Resource Conservation Service recommends a 100-ft vegetated (grass) buffer with a perimeter filter strip.

## 3.6 BIOLOGICAL RESOURCES

### 3.6.1 Vegetation

Plants include a large variety of naturally occurring native plants. Hay land, wildlife management areas, waterfowl production areas, neighboring wildlife refuges, state parks, and conservation reserve program land have created excellent grassland and wetland habitats for wildlife in Grand Forks County. Pastures, meadows, and other non-cultivated areas create a prairie-land mosaic of grasses, legumes, and wild herbaceous plants. Included in the grasses and legumes vegetation species are tall wheat grass, brome grass, Kentucky bluegrass, sweet clover, and alfalfa. Herbaceous plants include little bluestem, goldenrod, green needle grass, western wheat grass, and bluegrama. Shrubs such as Juneberry, dogwood, hawthorn, buffaloberry, and snowberry also are found in the area. In wetland areas, predominant species include *Typha* sp., smartweed, wild millet, cord grass, bulrushes, sedges, and reeds. These habitats for upland wildlife and wetland wildlife attract a variety of species to the area and support many aquatic species.

Various researchers, most associated with the University of ND, have studied current native floras in the vicinity of the base. The Natural Heritage Inventory through field investigations has identified ten natural communities occurring in Grand Forks County (1994). Of these, two communities are found within base boundaries, River/Creek and Lowland Woodland. The River/Creek natural community refers to the Turtle River. This area is characterized by submergent and emergent aquatic plants, green algae, diatoms, diverse invertebrate animals such as sponges, flatworms, nematode worms, segmented worms, snails, clams, and immature and adult insects, fish, amphibians, turtles, and aquatic birds and mammals. Dominant trees in the Lowland Community include elm, cottonwood, and green ash. Dutch elm disease has killed many of the elms. European buckthorn (a highly invasive exotic species), chokecherry, and wood rose (*Rosa woodsii*) are common in the under story in this area. Wood nettle (*Laportea canadensis*), stinging nettle (*Urtica dioica*), beggars' ticks (*Bidens frondosa*), and waterleaf (*Hydrophyllum virginianum*) are typical forbes.

A prairie restoration project in the "Prairie View Nature Preserve" has been developed to restore a part of the native tallgrass prairie that once was dominant in this region. Plants thriving in this preserve include western wheatgrass, slender wheatgrass, big bluestem, little bluestem, Indian grass, switchgrass, blue gramma, buffalo grass, and many native wildflower species. The Grand Forks AFB Natural Resources Manager and volunteers installed a butterfly garden in the Prairie View Nature Preserve in the fall of 2005, on National Public Lands Day. Volunteers helped plant the 1,300 square foot garden with about 50 different perennial varieties and shrubs.

Two hundred and fifty five taxa were identified in the ND Natural Heritage Inventory and the BS Bioserve biological inventory update for Grand Forks Air Force Base. Two rare orchid species are known to exist on Grand Forks AFB, the Large and Small Yellow Lady's Slipper, identified during the 2004 inventory.

### 3.6.2 Wildlife

Grand Forks County is agrarian in nature, however it does have many wildlife management areas, waterfowl production areas, conservation reserve program land, and recreational areas providing excellent habitat for local wildlife within the county. Kellys Slough NWR is located a couple miles northeast of Grand Forks AFB. In addition to being a wetland, it is a stopover point for thousands of migratory birds, especially shorebirds. The Prairie Chicken Wildlife Management Area is located north of Mekinock and contains 1,160 acres of habitat for deer, sharp-tailed grouse, and game birds. Wildlife can also be found at the Turtle River State Park, the Bremer Nature Trail, and the Myra Arboretum.

The base supports a remarkable diversity of wildlife given its size and location within an agricultural matrix. The Turtle River riparian corridor, Prairie View Nature Preserve, grassland areas on the west side of the base, and the lagoons to the east of the base all provide important habitat for native plant and wildlife species and should be conserved as such within mission constraints. Many mammalian species are found on base such as the white tail deer, eastern cottontail, coyotes, beaver, raccoons, striped skunks, badgers, voles, gophers, shrews, mice, muskrat, squirrels, bats, and occasional moose and bear.

One hundred seventy bird species were identified in the 2004 biological survey, many of which include grassland bird species. Grassland bird populations are declining across North America due to huge losses of prime grassland habitat from conversion to agricultural, urban, and industrial development. No other avian group has experienced such dramatic losses as grassland birds. GFAFB is fortunate to support a large variety of grassland birds, many of which are listed on the Partners-in-Flight species of concern list, such as the grasshopper sparrow. Large blocks of grassland should be conserved to protect these grassland bird species if the mission constraints allow it.

### 3.6.3 Threatened and Endangered Species

According to the Biological Survey Update 2004 of GFAFB, 21 state-listed birds and 1 federally listed bird species, 2 state-listed plant species, 1 state-listed mammal species, and 1 state-listed amphibian have been identified at GFAFB. The base does have infrequent use by migratory threatened and endangered species, such as the bald eagle, but there are no critical or significant habitats for those species present. Several rare and state-listed species have been observed on base near Turtle River, the lagoons, and the grassland to the west of the airfield. The ESA does require that Federal Agencies not jeopardize the existence of a threatened or endangered species nor destroy or adversely modify designated critical habitat for threatened or endangered species.

## 3.7 SOCIOECONOMIC RESOURCES

Grand Forks County is primarily an agricultural region and, as part of the Red River Valley, is one of the worlds most fertile. Cash crops include sugar beets, beans, corn, barley, and oats. The valley ranks first in the nation in the production of potatoes, spring wheat, sunflowers, and durum wheat. Grand Forks County's population in 2000 was 66,109, a decrease of 6.5 percent from the 1990 population of 70,638 (ND State Data Center, No Date). Grand Forks County's annual mean wage in Oct 2001 was \$26,715 (Job Service of ND, 2001). Grand Forks AFB is one of the largest employers in Grand Forks County. As of May 2005, Grand Forks AFB had 2,842 active duty military members and 380 civilian employees. The total annual economic impact for Grand Forks AFB is \$379,712,357.

### 3.8 CULTURAL RESOURCES

According to the Grand Forks AFB Cultural Resources Management Plan, there are no archeological sites that are potentially eligible for the National Register of Historic Places (NRHP). A total of six archeological sites and six archeological find spots have been identified on the base. They include historic farmsteads and isolated historical artifacts. None meet the criteria of eligibility of the NRHP established in 36 CFR 60.4. There is no evidence for Native American burial grounds, or other culturally sensitive areas. Paleosols (soil that developed on a past landscape) remain a management concern requiring Section 106 compliance. Reconnaissance-level archival and archeological surveys of Grand Forks AFB conducted by the University of ND in 1989 indicated that there are no facilities (50 years or older) that possess historical significance. The base is currently consulting with the ND Historical Society on the future use of eight Cold War Era facilities. These are buildings 313, 606, 703, 704, 705, 706, 707, and 714.

### 3.9 LAND USE

Land use in Grand Forks County consists primarily of cultivated crops with remaining land used for pasture and hay, urban development, recreation, and wildlife habitat. Principal crops are spring wheat, barley, sunflowers, potatoes, and sugar beets. Turtle River State Park, developed as a recreation area in Grand Forks County, is located about five miles west of the base. Several watershed protection dams are being developed for recreation activities including picnicking, swimming, and ball fields. Wildlife habitat is very limited in the county. Kellys Slough NWR (located about two miles east of the base) and the adjacent National Waterfowl Production Area are managed for wetland wildlife and migratory waterfowl, but they also include a significant acreage of open land wildlife habitat.

The main base encompasses 5,420 acres, of which the USAF owns 4,830 acres and another 590 acres are lands containing easements, permits, and licenses. Improved grounds, consisting of all covered area (under buildings and sidewalks), land surrounding base buildings, the 9-hole golf course, recreational ball fields, and the family housing area, encompass 1,120 acres. Semi-improved grounds, including the airfield, fence lines and ditch banks, skeet range, and riding stables account for 1,390 acres. The remaining 2,910 acres of the installation consist of unimproved grounds. These areas are comprised of woodlands, open space, and wetlands, including four lagoons (180.4 acres) used for the treatment of base wastewater. Agricultural out leased land (1,040 acres) is also classified as unimproved. Land use at the base is solely urban in nature, with residential development to the south and cropland, hayfields, and pastures to the north, west, and east of the base.

### 3.10 TRANSPORTATION SYSTEMS

Seven thousand vehicles per day travel ND County Road B3 from Grand Forks AFB's east gate to the US Highway 2 Interchange (Clayton, 2001). Two thousand vehicles per day use the off-ramp from US Highway 2 onto ND County Road B3 (Dunn, 2001). US Highway 2, east of the base interchange, handles 10,800 vehicles per day. (Kingsley and Kuntz, 2001). A four lane arterial road has a capacity of 6,000 vehicles per hour and a two lane, 3,000, based on the

average capacity of 1,500 vehicles per hour per lane. Roadways adjacent to Grand Forks AFB are quite capable of accommodating existing traffic flows (USAF, 2001a).

Grand Forks AFB has good traffic flow even during peak hours (6-8 am and 4-6 pm). There are two gates: the main gate located off of County Road B3, about one mile north of U.S. Highway 2 and the Secondary Gate located off of U.S. Highway 2, about 3/4 mile west of County Road B3. The main gate is connected to Steen Boulevard (Blvd), which is the main east-west road, and serves the passenger traffic; and the south gate is connected to Eielson Street (St), which is the main north-south road and serves the truck traffic.

### 3.11 AIRSPACE/AIRFIELD OPERATIONS

#### 3.11.1 Aircraft Safety

Bird Aircraft Strike Hazard (BASH) is a major safety concern for military aircraft. Collision with birds may result in aircraft damage and aircrew injury, which may result in high repair costs or loss of the aircraft. A BASH hazard exists at Grand Forks AFB and its vicinity, due to resident and migratory birds. Daily and seasonal bird movements create various hazardous conditions. Although BASH problems are minimal, Kellys Slough NWR is a major stopover for migratory birds. Canadian Geese and other large waterfowl have been seen in the area (USAF, 2001b).

#### 3.11.2 Airspace Compatibility

The primary objective of airspace management is to ensure the best possible use of available airspace to meet user needs and to segregate requirements that are incompatible with existing airspace or land uses. The Federal Aviation Administration has overall responsibility for managing the nation's airspace and constantly reviews civil and military airspace needs to ensure all interests are compatibly served to the greatest extent possible. Airspace is regulated and managed through use of flight rules, designated aeronautical maps, and air traffic control procedures and separation criteria.

### 3.12 SAFETY AND OCCUPATIONAL HEALTH

Safety and occupational health issues include one-time and long-term exposure. Examples include asbestos/radiation/chemical exposure, explosives safety quantity-distance, and bird/wildlife aircraft hazard. Safety issues include injuries or deaths resulting from a one-time accident. Aircraft Safety includes information on birds/wildlife aircraft hazards and the BASH program. Health issues include long-term exposure to chemicals such as asbestos and lead-based paint. Safety and occupational health concerns could impact personnel working on the project and in the surrounding area.

The National Emission Standards for Hazardous Air Pollutants (NESHAP) of the CAA designates asbestos as HAP. OSHA provides worker protection for employees who work around or with asbestos containing material (ACM). Regulated ACM (RACM) includes thermal system

insulation (TSI), any surfacing material, and any friable asbestos material. Non-regulated Category I non-friable ACM includes floor tile and joint compound.

Lead exposure can result from paint chips or dust or inhalation of lead vapors from torch-cutting operations. This exposure can affect the human nervous system. Due to the size of children, exposure to lead based paint is especially dangerous to small children. OSHA considers all painted surfaces in which lead is detectable to have a potential for occupational health exposure.

### 3.13 ENVIRONMENTAL MANAGEMENT

#### 3.13.1 Environmental Restoration Program

The Environmental Restoration Program (ERP) is the AF's environmental restoration program based on the CERCLA. CERCLA provides for Federal agencies with the authority to inventory, investigate, and clean up uncontrolled or abandoned hazardous waste sites. There are seven ERP sites at Grand Forks AFB. These sites are identified as potentially impacted by past hazardous material or hazardous waste activities. They are the Fire Training Area/Old Sanitary Landfill Area, FT-02; New Sanitary Landfill Area, LF-03; Strategic Air Ground Equipment (SAGE) Building 306, ST-04; Explosive Ordnance Detonation Area, OT-05; Refueling Ramps and Pads, Base Tanks Area, ST-06; POL Off-Loading Area, ST-07; and Refueling Ramps and Pads, ST-08 (USAF, 1997b). Two sites are considered closed, OT-05 and ST-06. ST-08 has had a remedial investigation/feasibility study (RI/FS) completed and the rest are in long-term monitoring. Grand Forks AFB is not on the National Priorities List (NPL)

#### 3.13.2 GEOLOGICAL RESOURCES

##### 3.13.2.1 Physiography and Topography

The topography of Grand Forks County ranges from broad, flat plains to gently rolling hills that were produced mainly by glacial activity. Local relief rarely exceeds 100 ft in one mile, and, in parts of the lake basin, less than five ft in one mile.

Grand Forks AFB is located within the Central Lowlands physiographic province. The topography of Grand Forks County, and the entire Red River Valley, is largely a result of the former existence of Glacial Lake Agassiz, which existed in this area during the melting of the last glacier, about 12,000 years ago (Stoner et al., 1993). The eastern four-fifths of Grand Forks County, including the base, lies in the Agassiz Lake Plain District, which extends westward to the Pembina escarpment in the western portion of the county. The escarpment separates the Agassiz Lake Plain District from the Drift Plain District to the west. Glacial Lake Agassiz occupied the valley in a series of recessive lake stages, most of which were sufficient duration to produce shoreline features inland from the edge of the lake. Prominent physiographic features of the Agassiz Lake Plain District are remnant lake plains, beaches, inter-beach areas, and delta plains. Strandline deposits, associated with fluctuating lake levels, are also present and are indicated by narrow ridges of sand and gravel that typically trend northwest-southwest in Grand Forks County.

Grand Forks AFB lies on a large lake plain in the eastern portion of Grand Forks County. The lake plain is characterized by somewhat poorly drained flats and swells, separated by poorly drained shallow swells and sloughs (Doolittle et al., 1981). The plain is generally level, with local relief being less than one foot. Land at the base is relatively flat, with elevations ranging from 880 to 920 ft mean sea level (MSL) and averaging about 890 ft MSL. The land slopes to the north at less than 12 ft per mile.

### 3.13.2.2 Soil Type Condition

Soils consist of the Gilby loam series that are characterized by deep, somewhat poorly drained, moderately to slowly permeable soils in areas between beach ridges. The loam can be found from 0 to 12 inches. From 12 to 26 inches, the soil is a mixture of loam, silt loam, and very fine sandy loam. From 26 to 60 inches, the soil is loam and clay loam.

### 3.13.3 Pesticide Management

Pesticides are handled at various facilities including Environmental Controls, Golf Course Maintenance, and Grounds Maintenance. Other organizations assist in the management of pesticides and monitoring or personnel working with pesticides. Primary uses are for weed and mosquito control. Herbicides, such as picloram, nonselective glyphosate and 2, 4-D are used to maintain areas on base. Military Public Health and Bioenvironmental Engineering provide information on the safe handling, storage, and use of pesticides. Military Public Health maintains records on all pesticide applicators. The Fire Department on-base provides emergency response in the event of a spill, fire, or similar type incident.

## 3.14 ENVIRONMENTAL JUSTICE

Environmental justice addresses the minority and low-income characteristics of the area, in this case Grand Forks County. The county is more than 93 percent Caucasian, 2.3 percent Native American, 1.4 percent African-American, 1 percent Asian/Pacific Islander, less than 1 percent Other, and 1.6 percent "Two or more races". In comparison, the US is 75.2 percent Caucasian, 12.3 African-American, 0.9 percent Native American or Native Alaskan, 3.6 percent Asian, 0.1 Native Hawaiian or Pacific Islander, 5.5 percent Other, and 2.4 percent "Two or more races". Approximately 12.5 percent of the county's population is below the poverty level in comparison to 13.3 percent of the state (US Bureau of the Census, 2002). There are few residences and no concentrations of low-income or minority populations around Grand Forks AFB.

## 4.0 ENVIRONMENTAL CONSEQUENCES

### 4.1 INTRODUCTION

The effects of the proposed action and the alternatives on the affected environment are discussed in this section. The project involves construction of a Ground-to-Air Transmitter and Receiver (GATR) facility on Grand Forks AFB.

### 4.2 AIR QUALITY

#### 4.2.1 Alternative 1 (No Action)

The no action alternative would not impact air quality.

#### 4.2.2 Alternatives 2 (Proposed Action)

Short term effects involve heavy construction equipment emissions (not a concern as they are mobile sources) and fugitive dust (mentioned on our Title V permit). Air Quality is considered good and the area is in attainment for all criteria pollutants. Fugitive emissions from construction activities are expected to be below the regulatory threshold and would be managed in accordance with NDAC 33-15-17-03. The total emission of criteria pollutants from the proposed action is below the de minimus thresholds and less than 10 percent of the Air Quality Region's planning inventory. This construction action is not "regionally significant" and does not require a conformity determination in accordance with 40 CFR 93.153(1), Air Programs. Best management practices (BMPs) to reduce fugitive emissions would be implemented to reduce the amount of these emissions.

#### 4.2.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.3 NOISE

#### 4.3.1 Alternative 1 (No Action)

The no action alternative would not impact noise generation.

#### 4.3.2 Alternative 2 (Proposed Action)

The short-term operation of heavy equipment in the construction of a Ground-to-Air Transmitter and Receiver (GATR) facility area would generate additional noise. These noise impacts would exist only during construction and would cease after completion. The increase in noise from activities would not be significant.

#### 4.3.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

#### 4.4 WASTES, HAZARDOUS MATERIALS, AND STORED FUELS

##### 4.4.1 Alternative 1 (No Action)

The no action alternative would not impact hazardous or solid waste generation.

##### 4.4.2 Alternative 2 (Proposed Action)

All efforts to consider the use of Green Procurement Program (GPP) and other recycled materials for applicable construction materials to construct a Ground-to-Air Transmitter and Receiver (GATR) facility shall be implemented. The increase in hazardous and solid wastes from construction would be temporary. A small amount of debris would be generated. Solid waste debris would be disposed of in an approved location, such as the Grand Forks Municipal Landfill, which is located within 12 miles of the proposed site. All measures would be taken to minimize the disturbance of any asbestos-containing material and prevent any asbestos fiber release episodes in all areas. Removal of any friable asbestos-containing material would be accomplished in accordance with section 33-15-13-02 of the North Dakota air pollution control rules. All solid waste materials would be managed and transported in accordance with the state's solid and hazardous waste rules. Appropriate efforts to reduce, reuse and/or recycle waste materials are encouraged by the State of North Dakota. Inert waste should be segregated from non-inert waste, where possible, to reduce the cost of waste management.

In the event there is contact with surfaces covered with lead-based paint, the removal of lead-based paint would be properly handled to reduce or prevent exposing workers and building occupants to lead. The materials must be handled by properly trained individuals for removal and disposal.

Construction must not disturb OWSs, ASTs, USTs, UST piping, vapor probes, or groundwater monitoring wells. Maps of the UST and AST locations are included in Appendix C. There are no monitoring wells or vapor probes in the area. The self-contained AST for fuel storage proposed for the new facility must be double walled.

The subsequent demolition of 819 and 820 will be addressed in a later document. It will need to address storage tank, asbestos, and demolition issues.

##### 4.4.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

#### 4.5 WATER RESOURCES

##### 4.5.1 Alternative 1 (No Action Alternative)

The no action alternative would not impact groundwater, surface water, wastewater, water quality, or wetlands.

#### 4.5.2 Alternative 2 (Proposed Alternative)

4.5.2.1 Groundwater: Excavation would likely intercept the water table. If the excavated area fills with groundwater, water could be directly exposed to contaminants released from construction equipment. Provided best management practices are followed, there will be minimal impacts on ground water.

4.5.2.2 Surface Water: Surface water quality could be degraded in the short-term, during actual construction, and in the long term. Effects come from possible erosion contributing to turbidity of runoff and possible contamination from spills or leaks from construction equipment. Surface water could also be impacted if, due to storm water inflow to the excavation, the contractor would need to pump out the excavation. The contractor must utilize effective methods to control surface water runoff and minimize erosion. The long term effects come from the fact that additional impervious area is being added to a site where the drainage is already compromised and no additional consideration will be given to this drainage during this project. This could lead to overflowing ditches, increase in wetland area, and additional contaminants introduced to the water due to the increased flows. Proper stabilization and seeding the site immediately upon completion of the construction would provide beneficial vegetation, controlling erosion. Provided best management practices are utilized during construction, short term negative surface water impacts should be minimal. Long term negative impacts may occur with an overall decrease in water quality.

4.5.2.3 Wastewater: The proposed action would have no impact on wastewater.

4.5.2.4 Water Quality: Provided all containment needs are met and best management practices are used, the proposed action would have no impact to water quality.

4.5.2.5 Wetlands: The project is to occur directly adjacent to several wetland type areas so care must be taken to minimize impacts. Unavoidably, due to the additional surface runoff that is expected, some wetland areas will be minimally affected. Antenna installation activities should avoid any wetland areas. A USACE permit may be required for this. Activity in any wetlands cannot occur without a Clean Water Act section 404 permit from the Army Corps of Engineers. No dumping, filling, dredging, or changing of the wetland hydrologic structure is permitted without a permit.

#### 4.5.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.6 BIOLOGICAL RESOURCES

#### 4.6.1 Alternative 1 (No Action)

The no action alternative would not impact wildlife, vegetation, or other biological resources.

#### 4.6.2 Alternative 2 (Proposed Action)

4.6.2.1 Vegetation: BMPs and control measures, including covering of stockpiles and drain openings, would be implemented to ensure that impacts to biological resources be kept to a minimum. The amount of vegetation disturbed would be kept to the minimum required to complete the action. Disturbed areas should be re-established. There would be a short-term minimal loss of vegetation from construction activities.

4.6.2.2 Noxious Weeds: Public law 93-629 mandates control of noxious weeds. Limit possible weed seed transport from infested areas to non-infested sites. Avoid activities in or adjacent to heavily infested areas, or remove seed sources and propagules from site prior to conducting activities, or limit operations to non-seed producing seasons. Wash or otherwise remove all vegetation and soil from equipment before transporting to a new site. Mitigate activities which expose the soil by covering the area with weed seed free mulch and/or seed the area with native species. Covering the soil would reduce the germination of weed seeds, maintain soil moisture, and minimize erosion. If any fill material is used, it should be from a weed-free source.

4.6.2.3 Wildlife: Construction would have minimal impacts to wildlife. These areas provide foraging habitat for small mammals, such as mice and rabbits. The area is unimproved. Due to the abundance and mobility of these species and the profusion of similar areas in the general vicinity, any wildlife disturbed would be able to find similar habitat in the local area.

4.6.2.4 Threatened or Endangered Species: According to the Biological Surveys of 1994 and 2004, and bird surveys of 2001, 2004, and 2005, Grand Forks AFB has 56 bird species of concern: one federally threatened, 8 state-threatened and endangered, 29 state species of concern, 17 USFWS birds of conservation concern, and 22 DOD partners-in-flight species. In addition, referencing the 1994 and 2004 biological surveys, there are two state threatened plant species, one state species of concern for mammals, and one state species of concern for amphibians identified at GFAFB. The federally listed bird species (the Bald Eagle) has no critical habitat at GFAFB. Proposed activities should have no impact on these sensitive species, given all proposed actions are associated with buildings or areas that are located in a well traveled area.

#### 4.6.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.7 SOCIOECONOMIC RESOURCES

#### 4.7.1 Alternative 1 (No Action)

The no action alternative would not impact socioeconomics.

#### 4.7.2 Alternative 2 (Proposed Action)

Secondary retail purchases would make an additional contribution to the local communities. The implementation of the proposed action, therefore, would provide a short-term, minimal beneficial impact to local retailers during the construction phase of the project. There would be no long term impact to socioeconomic resources.

#### 4.7.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.8 CULTURAL RESOURCES

#### 4.8.1 Alternative 1 (No Action)

The no action alternative would not impact cultural resources.

#### 4.8.2 Alternative 2 (Proposed Action)

The proposed action has little potential to impact cultural resources. In the unlikely event any such artifacts were discovered during the construction activities, the contractor would be instructed to halt construction and immediately notify Grand Forks AFB civil engineers who would notify the State Historic Preservation Officer. Buildings 819 and 820 are not among the buildings that are National Register eligible.

#### 4.8.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.9 LAND USE

#### 4.9.1 Alternative 1 (No Action)

The no action alternative would not impact land use.

#### 4.9.2 Alternative 2 (Proposed Action)

The proposed operation would not have an impact on the land use currently designated for the area.

#### 4.9.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.10 TRANSPORTATION SYSTEMS

#### 4.10.1 Alternative 1 (No Action)

The no action alternative would not impact transportation.

#### 4.10.2 Alternative 2 (Proposed Action)

The proposed action would have minimal adverse impact to transportation systems on base due to vehicles traveling to and from areas during construction of a Ground-to-Air Transmitter and Receiver (GATR) facility.

#### 4.10.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.11 AIRSPACE/AIRFIELD OPERATIONS

#### 4.11.1 Alternative 1 (No Action)

The no action alternative would not impact aircraft safety or airspace compatibility.

#### 4.11.2 Alternative 2 (Proposed Action)

The proposed action would not impact aircraft safety or airspace compatibility. The proposed location is beyond the 7:1 imaginary surface of the existing runway and a potential crosswind runway, and therefore no airfield waiver would be required.

#### 4.11.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

### 4.12 SAFETY AND OCCUPATIONAL HEALTH

#### 4.12.1 Alternative 1 (No Action)

The no action alternative would not impact safety and occupational health.

#### 4.12.2 Alternative 2 (Proposed Action)

The proposed action would have no significant impact on safety and occupational health if the Architectural Compatibility Guidelines (ACG) are followed. Participants in construction of a Ground-to-Air Transmitter and Receiver (GATR) facility are required to wear appropriate personal protective equipment (PPE).

#### 4.12.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

#### 4.13 ENVIRONMENTAL MANAGEMENT

##### 4.13.1 Alternative 1 (No Action)

The no action alternative would not impact ERP Sites or geological resources.

##### 4.13.2 Alternative 2 (Proposed Action)

ERP: The proposed action would not impact ERP Sites.

Geology: The proposed action would not impact geological resources. Soils present in the proposed area include the Gilby series.

Pesticides: Pesticides would not be used during the construction of a Ground-to-Air Transmitter and Receiver (GATR) facility.

##### 4.13.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

#### 4.14 ENVIRONMENTAL JUSTICE

##### 4.14.1 Alternative 1 (No Action)

The no action alternative would not impact environmental justice.

##### 4.14.2 Alternative 2 (Proposed Action)

EO 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no minorities or low-income populations in the area of the proposed action or alternatives, and, thus, there would be no disproportionately high or adverse impact on such populations.

##### 4.14.3 Alternative 3

Impacts would be similar to those generated under the proposed action.

#### 4.15 INDIRECT AND CUMULATIVE IMPACTS

The short-term increases in air emissions and noise during construction and the impacts predicted for other resource areas, would not be significant when considered cumulatively with other ongoing and planned activities at Grand Forks AFB and nearby off-base areas. The cumulative impact of the Proposed Action or Alternative with other ongoing activities in the area would produce an increase in solid waste generation; however, the increase would be limited to

the timeframe of each project. The area landfills used for construction and construction debris do not have capacity concerns, and could readily handle the solid waste generated by the various projects.

#### 4.16 UNAVOIDABLE ADVERSE IMPACTS

The proposed action and alternatives would involve the use of construction related vehicles, and their short-term impacts on noise, air quality, and traffic are unavoidable.

#### 4.17 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed action and alternatives would involve the use of previously developed areas. No croplands, pastureland, wooded areas, or wetlands would be modified or affected as a result of implementing the Proposed Action and, consequently, productivity of the area would not be degraded.

#### 4.18 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Under the proposed action, fuels, manpower, economic resources, and other recovery materials related to the construction of a Ground-to-Air Transmitter and Receiver (GATR) facility would be irreversibly lost.

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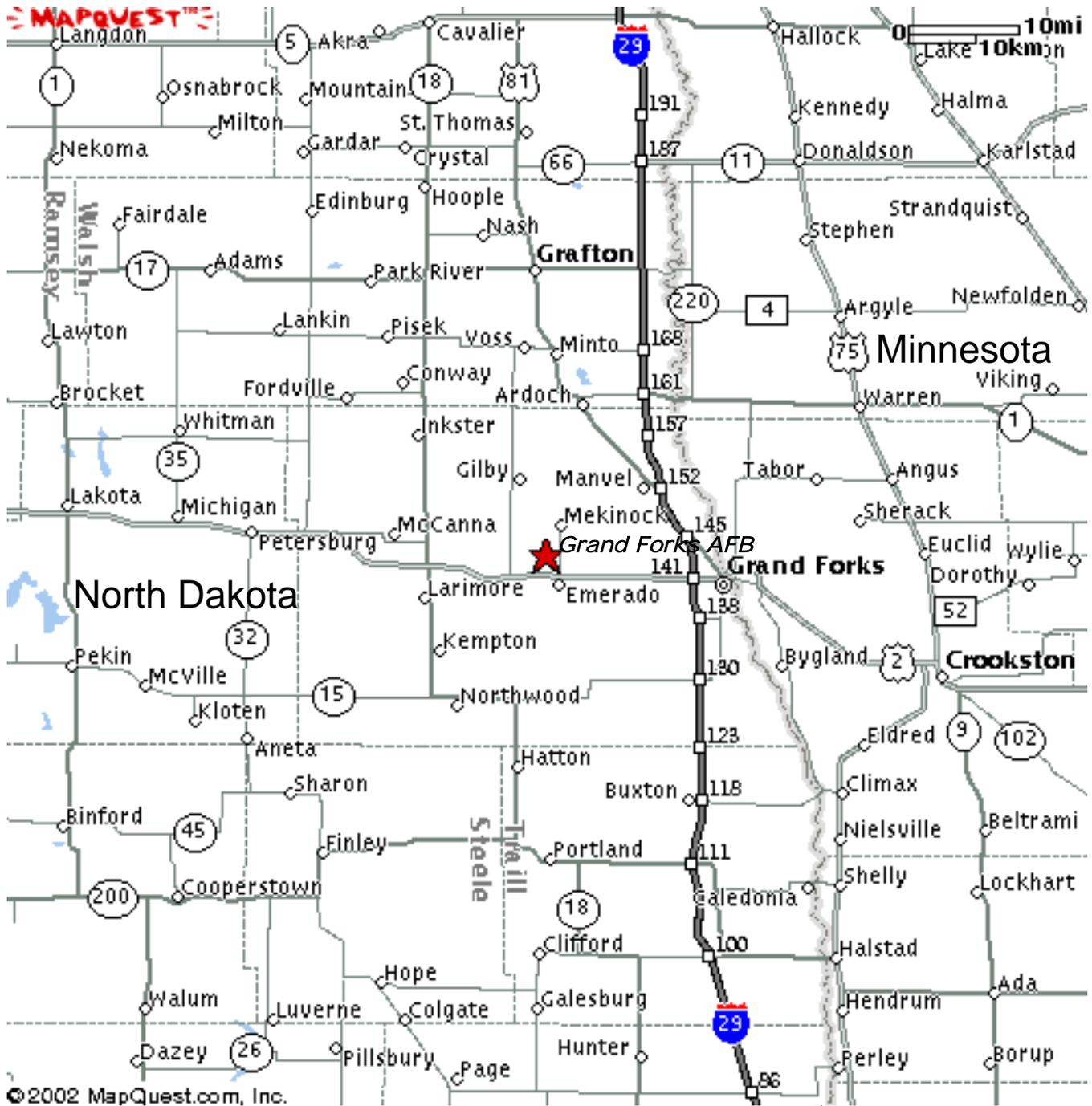
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APPENDIX A  
LOCATION MAP – GRAND FORKS AFB

# Grand Forks AFB, ND



State Boundary

APPENDIX B  
CULTURAL RESOURCE PROBABILITY MAP

Figure 3.5  
Survey Areas and  
Probabilities

Grand Forks Air Force Base  
Cultural Resources Management Plan

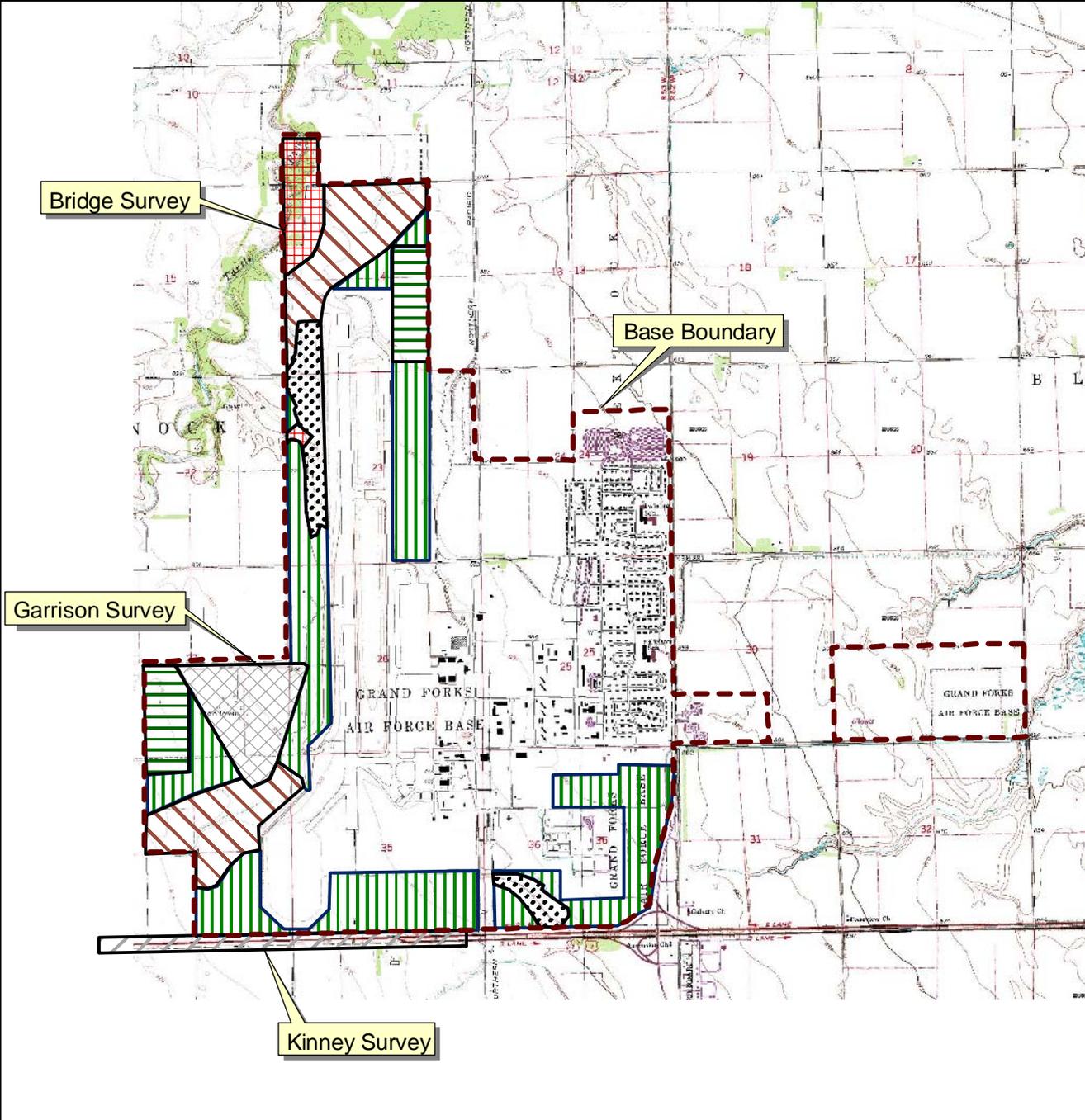
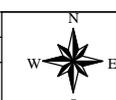
Legend

- Historic Bridge Inventory Survey
- Base Boundary
- High Probability
- Medium Probability (near water)
- Kinney Survey
- Medium Probability (beach ridge)
- Peace Keeper Rail Garrison Survey
- Low Probability (distance from water)
- Low Probability (10% sample)
- Previously Disturbed

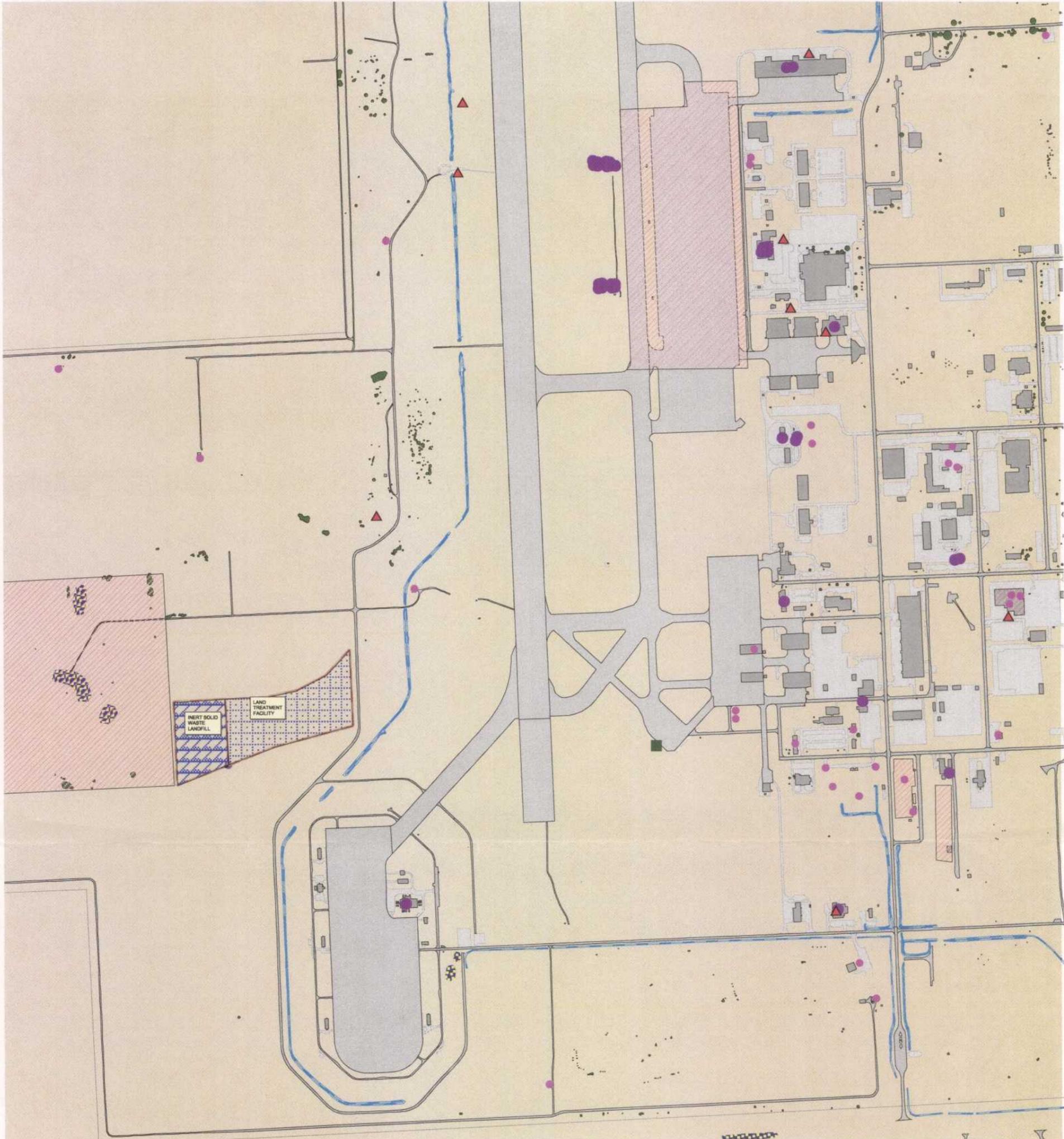
2000 0 2000 4000 Feet



Scale:	1:50000
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File:	y:\projects\federal\air force\grand forks...
Date:	5-16-02
Figure Number:	3.5
Page Number:	3-18



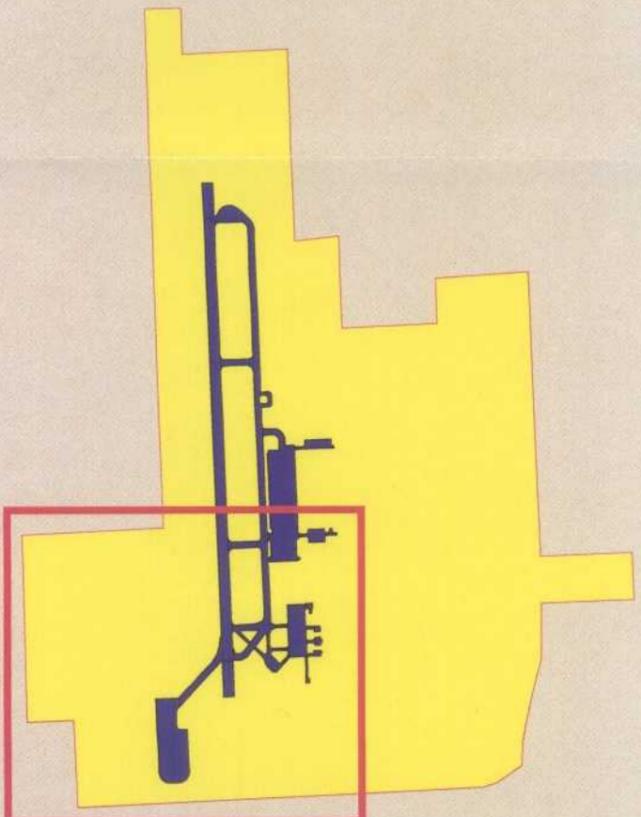
APPENDIX C  
ENVIRONMENTAL SITE MAP  
UST and AST LOCATION MAP



INERT SOLID WASTE LANDFILL  
LAND TREATMENT FACILITY

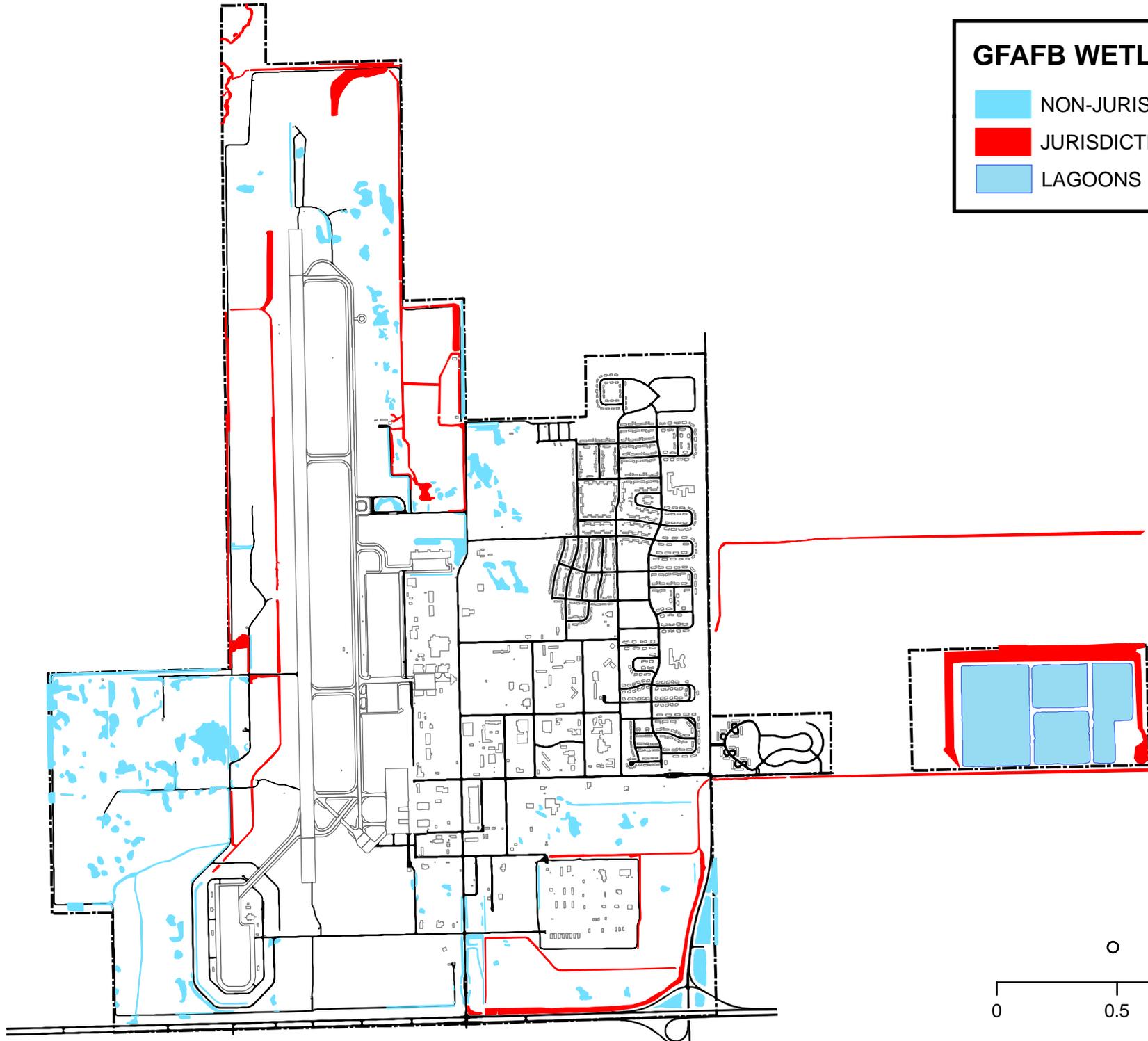
### Grand Forks AFB Environmental Sites (SW)

- Above Ground Storage Tanks (Fuel)
- ▲ Abandoned Fuel Lines
- ▲ Building 622 - Acid Dip Room
- Helicopter Wash Area
- ▲ Oil/Water Separator
- ▲ Satellite Accumulation Areas (Haz Waste)
- ▲ Scrap Storage Area
- S.H.P.O. (Buildings under consideration)
- ▲ Underground Waste Storage
- Underground Storage Tanks (Fuel)
- Ditches/Streams
- IRP Sites
- Landfill Caps
- Trees
- Wetlands
- Hydrography-flood zone area
- floodplain zone centroid

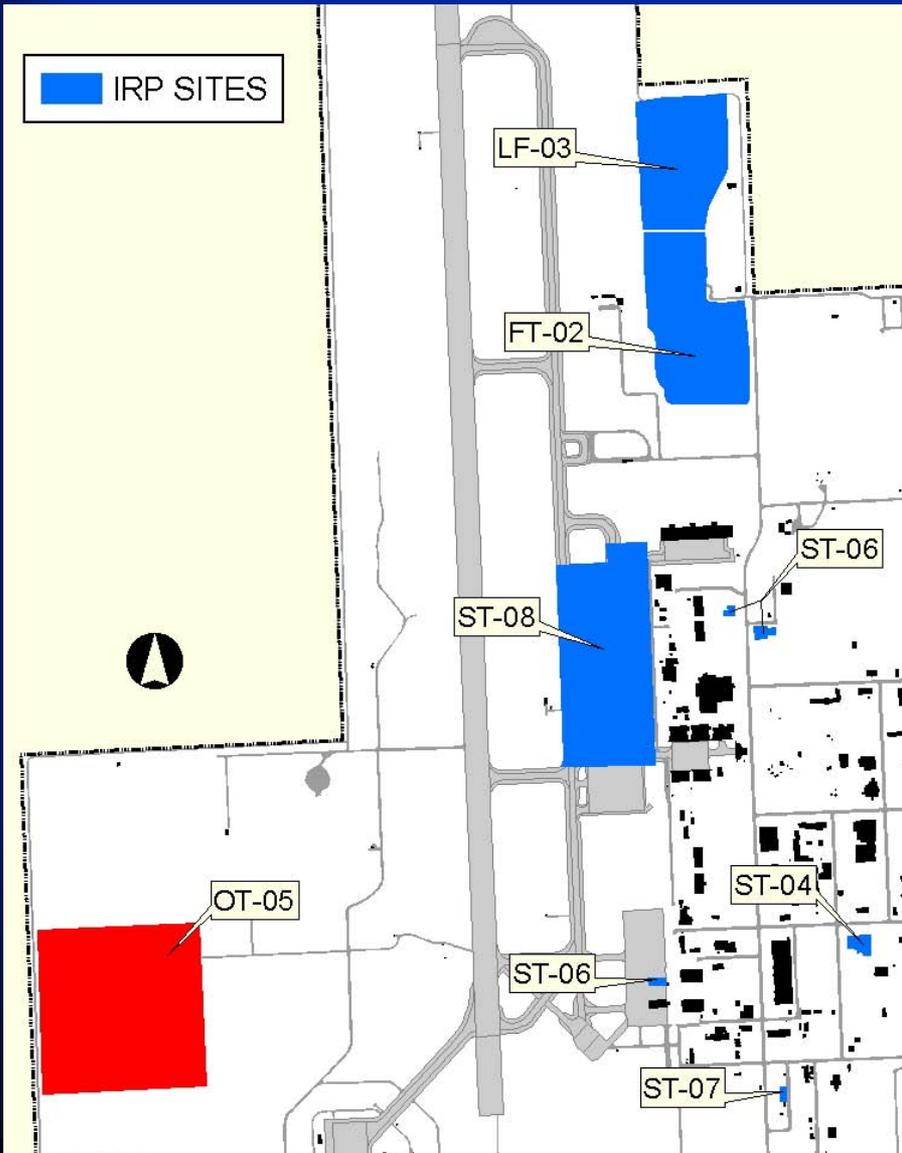


# GFAFB WETLANDS

-  NON-JURISDICTIONAL
-  JURISDICTIONAL
-  LAGOONS

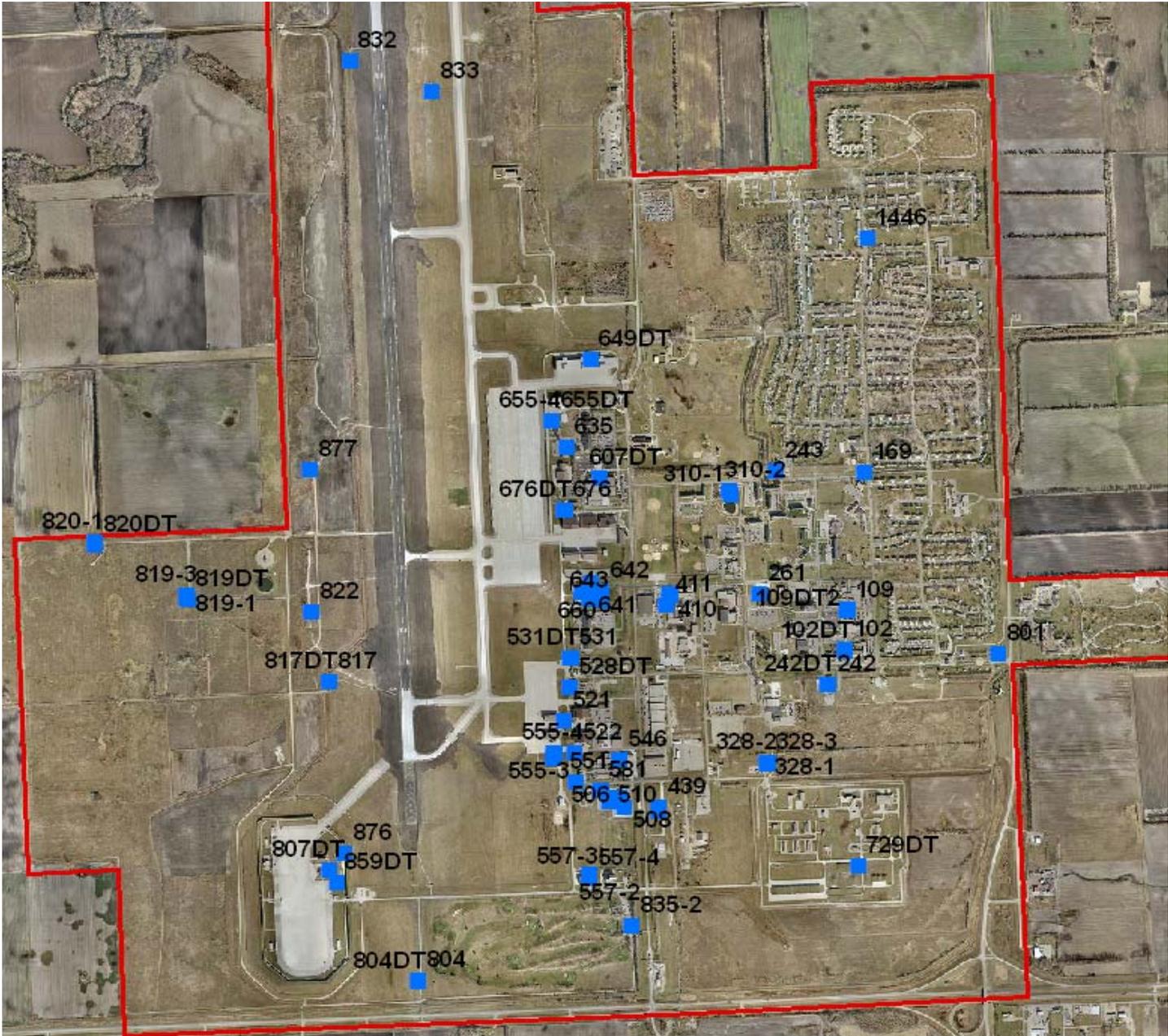


# OT-05

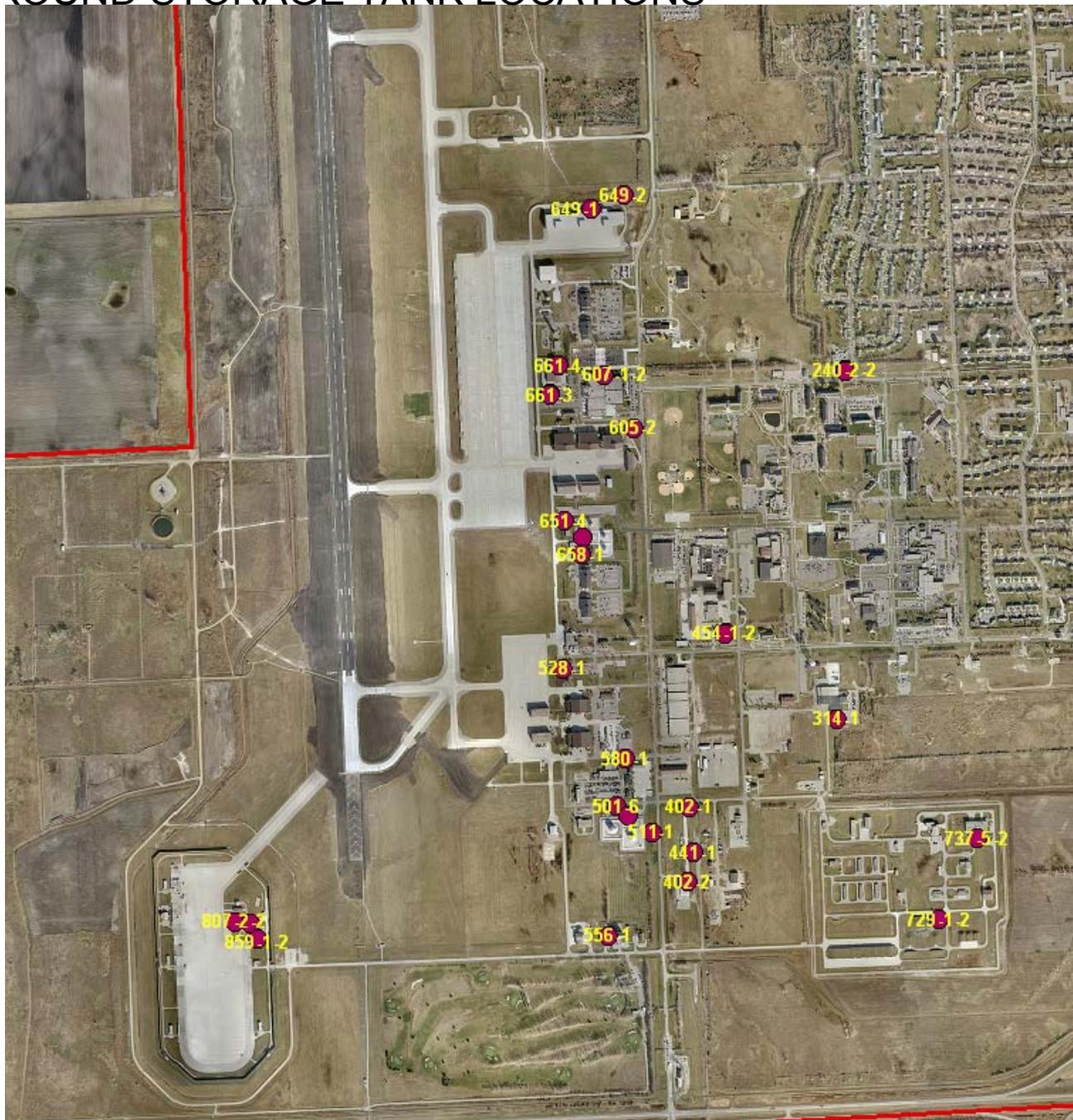


Old EOD –Explosive Ordnance Detonation range – clean and closed

# ABOVEGROUND STORAGE TANK LOCATIONS



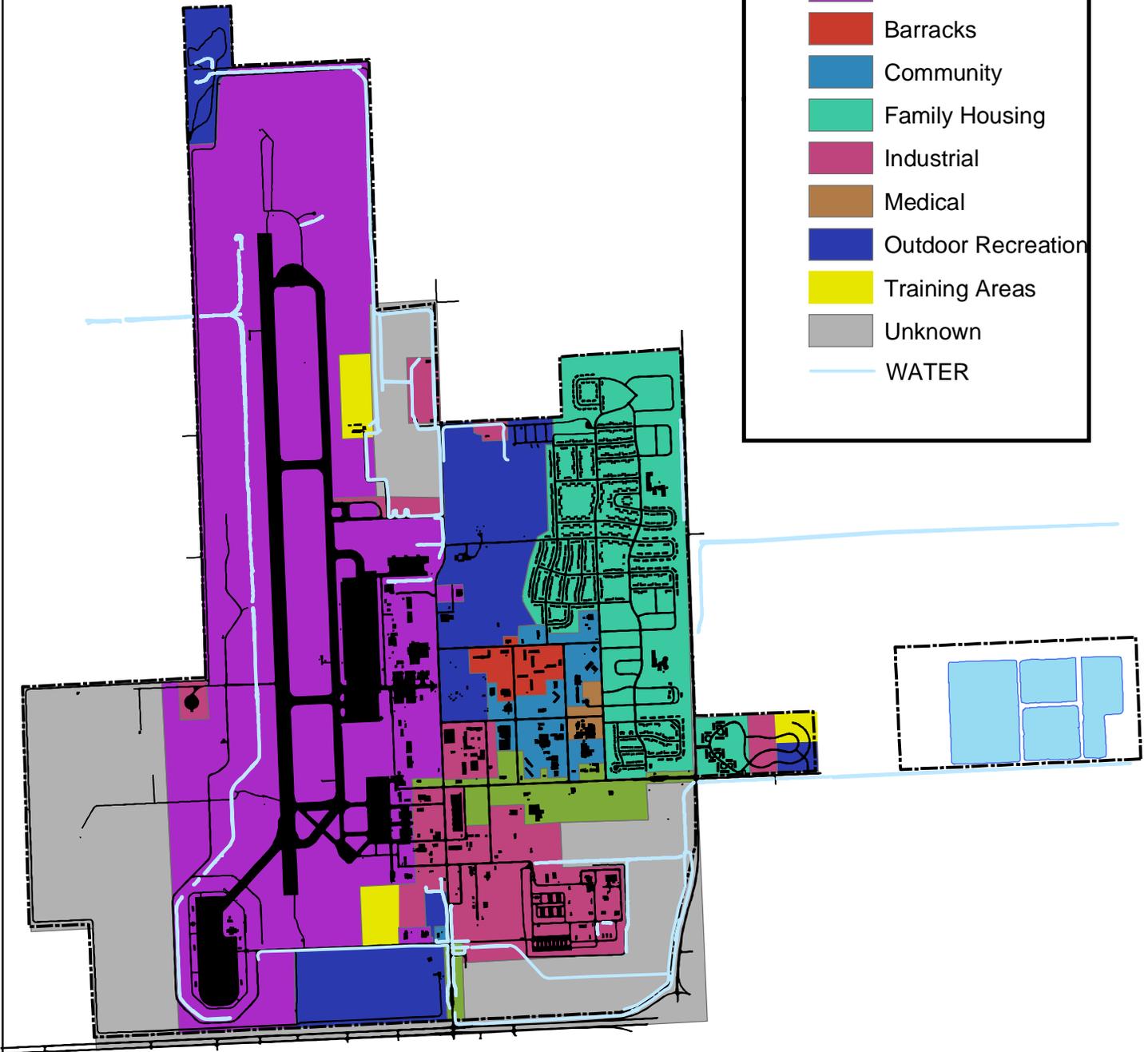
# UNDERGROUND STORAGE TANK LOCATIONS



# GFAFB LAND USE

## Land Use Categories

- Administrative
- Airfield Operations
- Barracks
- Community
- Family Housing
- Industrial
- Medical
- Outdoor Recreation
- Training Areas
- Unknown
- WATER



APPENDIX D  
AF FORM 813

**REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS**

Report Control Symbol  
RCS: 2006-152

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

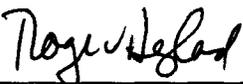
**SECTION I - PROPONENT INFORMATION**

1. TO (Environmental Planning Function) 319 CES/CEVA	2. FROM (Proponent organization and functional address symbol) MSgt Neil McComsey, 319 CS/SCXS	2a. TELEPHONE NO. 701-747-5327
---	---	-----------------------------------

3. TITLE OF PROPOSED ACTION  
Construct Ground-to-Air Transmit & Receive (GATR) Facility, JFSD200601

4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date)  
A modern, functionally designed, facility is needed for an efficient, effective operation. The current facilities 819 and 820 are in disrepair and not sufficient to meet the demands of the GATR equipment, with inadequate HVAC and electrical systems.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.)  
Repair existing or construct a facility to house the new state-of-the-art Ground-to-Air Transmitter and Receiver (GATR) equipment, with HVAC, mechanical and electrical support in the vicinity of 819 and 820.

6. PROPONENT APPROVAL (Name and Grade) Roger Hegland, GS-12, Chief Plans Flight 319 CS/SCX, (701) 747-5318	6a. SIGNATURE 	6b. DATE 17 MAR 06
--	---	-----------------------

**SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.** (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)

	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. WATER RESOURCES (Quality, quantity, source, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. OTHER (Potential impacts not addressed above.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION**

17.  PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # \_\_\_\_\_; OR  
 PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS  
  
This action is not "regionally significant" and does not require a conformity determination in accordance with 40 CFR 93.153(1). The total emission of criteria pollutants from the proposed action are below the de minimus thresholds and less than 10 percent of the Air Quality Region's planning inventory.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade) WAYNE A. KOOP, R.E.M., GS-13 Environmental Management Flight Chief	19a. SIGNATURE 	19b. DATE 21 MAR 06
---	--	------------------------

- 4.0 Purpose and Need for Action: Construct Ground-to-Air Transmit & Receive (GATR) Facility, JFSD200601
- 4.1 Purpose of the Action (mission objectives-who proposes to do what, where, when): Construct a facility to house the new Ground-to-Air Transmitter and Receiver (GATR) equipment, with HVAC, mechanical and electrical support. Locate in vicinity of 819 or 820 to ease transition, minimize downtime, and maximize use of existing communication & utility infrastructure.
- 4.2 Need for the Action (why this action is desired or required-why here, why now): A modern, functionally designed, facility is needed for an efficient, effective operation. The current facilities 819 and 820 are not sufficient to meet the demands of the GATR equipment. Neither site has sufficient HVAC or adequate electrical systems. Current antenna poles are condemned for climbing. Area floods after winter snow melts and is very swampy.
- 4.3 Objectives for the Action (what goal do you wish to accomplish): Provide appropriate facility to house GATR equipment
- 4.4 Related EIS/EAs and other documents (similar projects in the past): 02 EA to remove petroleum contaminated soil near 820; Catex for economic assessment to determine feasibility to repair vs build; add 110V power; emergency lights; AST lighting.
- 4.5 Decision that must be made: Construct Ground-to-Air Transmit & Receive (GATR) Facility, JFSD200601.
- 4.6 Applicable Regulatory Requirements and Required Coordination-- required permits, licenses, entitlements: Submit a Work Clearance Request, Stormwater Protection Plan, Dust Control Plan, Erosion and Sediment Control Plan to the CEV Water Program Manager; Spill Control Plan and Waste Disposal Plan to CEV Pollution Prevention Manager, and Contracting Officer.
- 5.1 Description of the Proposed Action (in brief, introduction): Construct GATR Facility, JFSD200601.
- 5.2 Selection criteria for Alternatives: location to meet 7:1 imaginary surface of potential crosswinds runway.
- 5.2.1 Minimum mission requirements: effectiveness, timeliness, cost effective, legality, safety, efficiency, force protection.
- 5.2.2 Minimum environmental standards : noise, air, water, safety, HW, vegetation, cultural, geology, soils, socioeconomic.
- 5.3 Alternatives Considered but Eliminated from Detailed Study: In 2004 an original site survey at GFAFB for costing to consolidate the ATR Receiver and Transmitter to a single GATR site was accomplished by Tinker AFB. This survey to make Bldg 820 the consolidated site has since been discarded, due to the prohibitive costs to move cables twice.
- 5.4.1 No-action alternative: Communications support equipment will be located in substandard facilities. As deterioration progresses, CS may lose communication support to aircraft. Poor working environment adversely affects the mission at GFAFB.
- 5.4.2 Proposed Action: Construct facility to house GATR state-of-the-art communications equipment at location est 650' north of 819 on the east side of road. Propose 50x35' facility, but final size contingent on AMC funding limit. If a pre-engineered metal building is used, all metal parts would be bonded in accordance with MILSTD-188-124B, Section 5.2. All structural joints would connect IAW para 5.2.6. and mating surfaces cleaned IAW para 5.2.8. to ensure electrical continuity of the structure is maintained. Requires three new, 80' metal antennas mounted on new guyed metal poles, 50' from the facility. Replace antenna couplers. Communication equipment contractor/designer must conduct site survey, recommend suitable solutions & provide appropriate foundations. Tower locations & antenna placements on towers will be selected in accordance with guidelines contained in TO 31Z3-10-9. Contractor through coordination with CES will be required to obtain FAA Aerospace Waiver prior to use of any construction equipment on the airfield. Estimates for equipment power requirements are Total equipment power = 8975 watts, and Total equipment BTU = 30,644 BTU; based on the use of 17 GRT-22 Transmitters x 140 watts = 2380 watts, 6 AM-6155 Amplifiers x 610 watts = 3660 watts, 16 GRR-24 Receivers x 50 watts = 800 watts, 9 GRT-21 Transmitters x 140 watts = 1260 watts, 11 GRR-23 Receivers x 50 watts = 550 watts, 1 G/A Patch Panel x 250 watts = 250 watts, and 1 Fiber Optic MUX x 75 watts = 75 watts. A facility UPS with capacity of 15 KVA sized for 20 minutes of reserve power is recommended. A distribution panel should be provided with minimum of 24 single pole 20A breakers to provide power for equipment racks. An overhead wireway (4x4 minimum) should be provided for power runs to equipment racks. The back up generator should have an automatic transfer panel, and be sized to power the UPS, lights, and HVAC for the facility, probably 25 KW. Facility floor should be grounded in accordance with MILSTD-188-124B and provided with Equipotential Ground Plane installed according to drawings. A minimum of two 4-inch conduits with inner duct should be provided from the nearest manhole to the facility demarc for fiber and copper cables. A minimum of six 4-inch ducts (two for each antenna tower) should be provided from antenna towers to a large junction box mounted on wall of facility (for antenna surge suppressor mounting). Junction box should be provided with six 4-inch ports through the wall into the facility. Junction box should also be provided with a ground bar connected directly to the earth-electrode subsystem for grounding of surge suppressors. Overhead cable ladder should be provided within the facility from the antenna ports to the equipment racks. Purchase new generator--both the gensets at bldg 819 & 820 are over 15 years old and according to AMC policy are in the age window to be programmed for replacement by the time they are 20 years old. Also they are both only 15 KW generators and 240 volt single phase. Per new AMC AFI32-1063 in 2005 all gensets are to have a facility load of at least 75% of the generator rated load and if 3-phase power will be required, all automatic transfer switches installed are to be of the maintenance bypass/isolation type with a switched neutral (4-pole switch).
- 5.4.3 Another Reasonable Action Alternative: Locate facility 750' north of 819 on W side of road. Area has many wetlands.
- 5.5 Description of Past and Reasonably Foreseeable Future Actions Relevant to Cumulative Impacts: Several other construction & demolition projects occur on GFAFB in the same time frame. These projects are addressed under separate NEPA documents.
- 5.6 Recommendation of preferred alternative: Construct Ground-to-Air Transmit & Receive (GATR) Facility, JFSD200601.

APPENDIX E  
GATR SITE AND LOCATION MAP

1. COMPONENT  
AF (AMC)

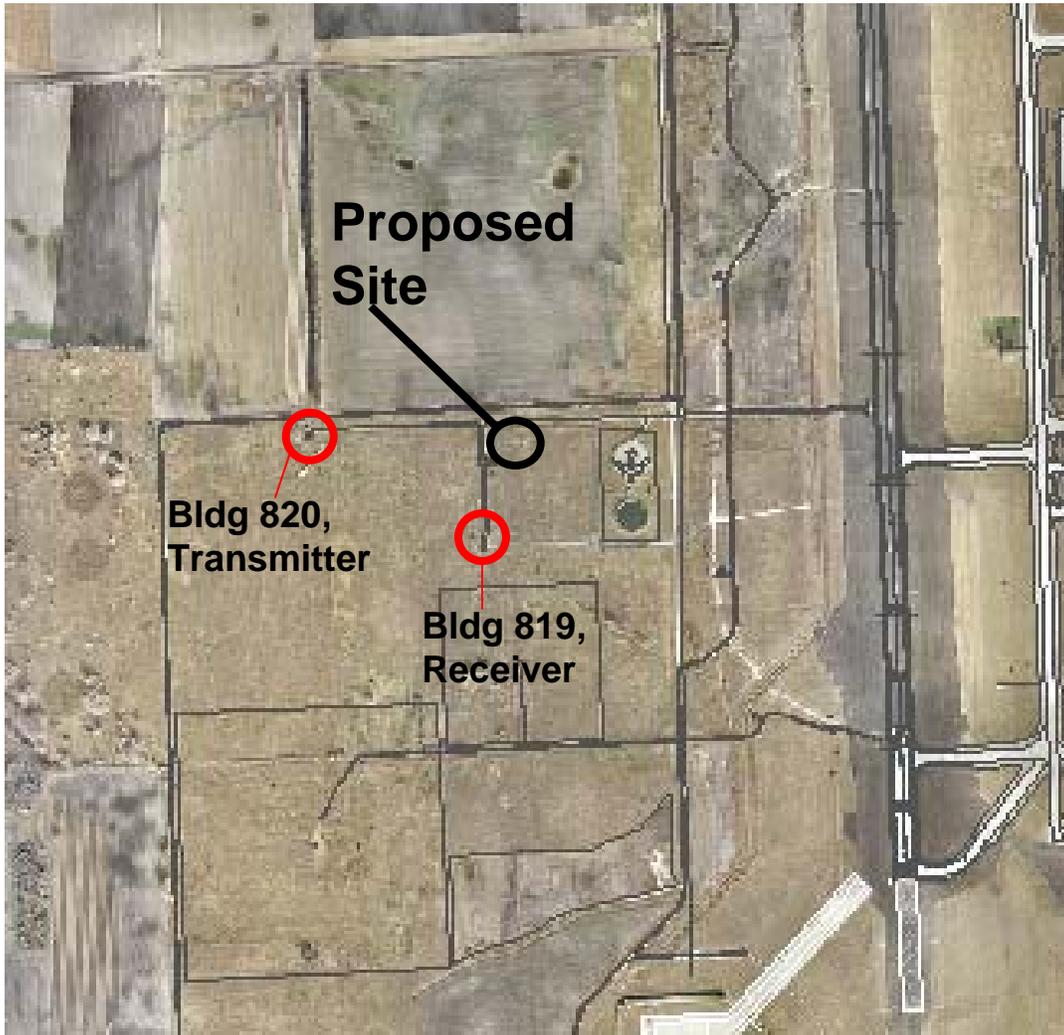
# FY 2006 MILITARY CONSTRUCTION DATA

2. DATE  
13 Mar 06

3. INSTALLATION AND LOCATION  
GRAND FORKS AFB, NORTH DAKOTA

4. PROJECT TITLE  
CONSTRUCT GATR COMM FACILITY

5. PROJECT NUMBER  
JFSD200601



## LOCATION PLAN



1. COMPONENT  
AF (AMC)

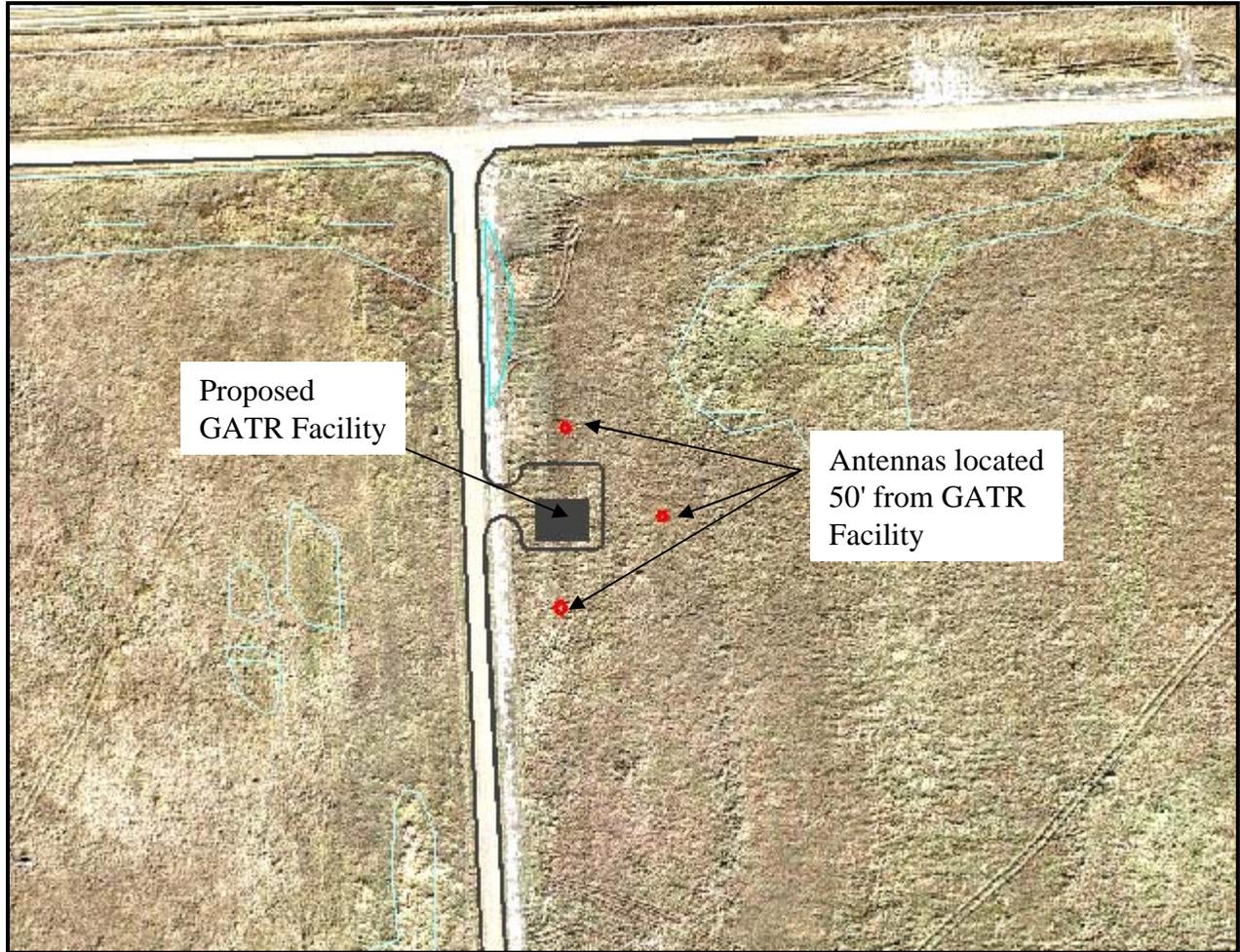
# FY 2006 MILITARY CONSTRUCTION DATA

2. DATE  
13 Mar 06

3. INSTALLATION AND LOCATION  
GRAND FORKS AFB, NORTH DAKOTA

4. PROJECT TITLE  
CONSTRUCT GATR COMM FACILITY

5. PROJECT NUMBER  
JFSD200601

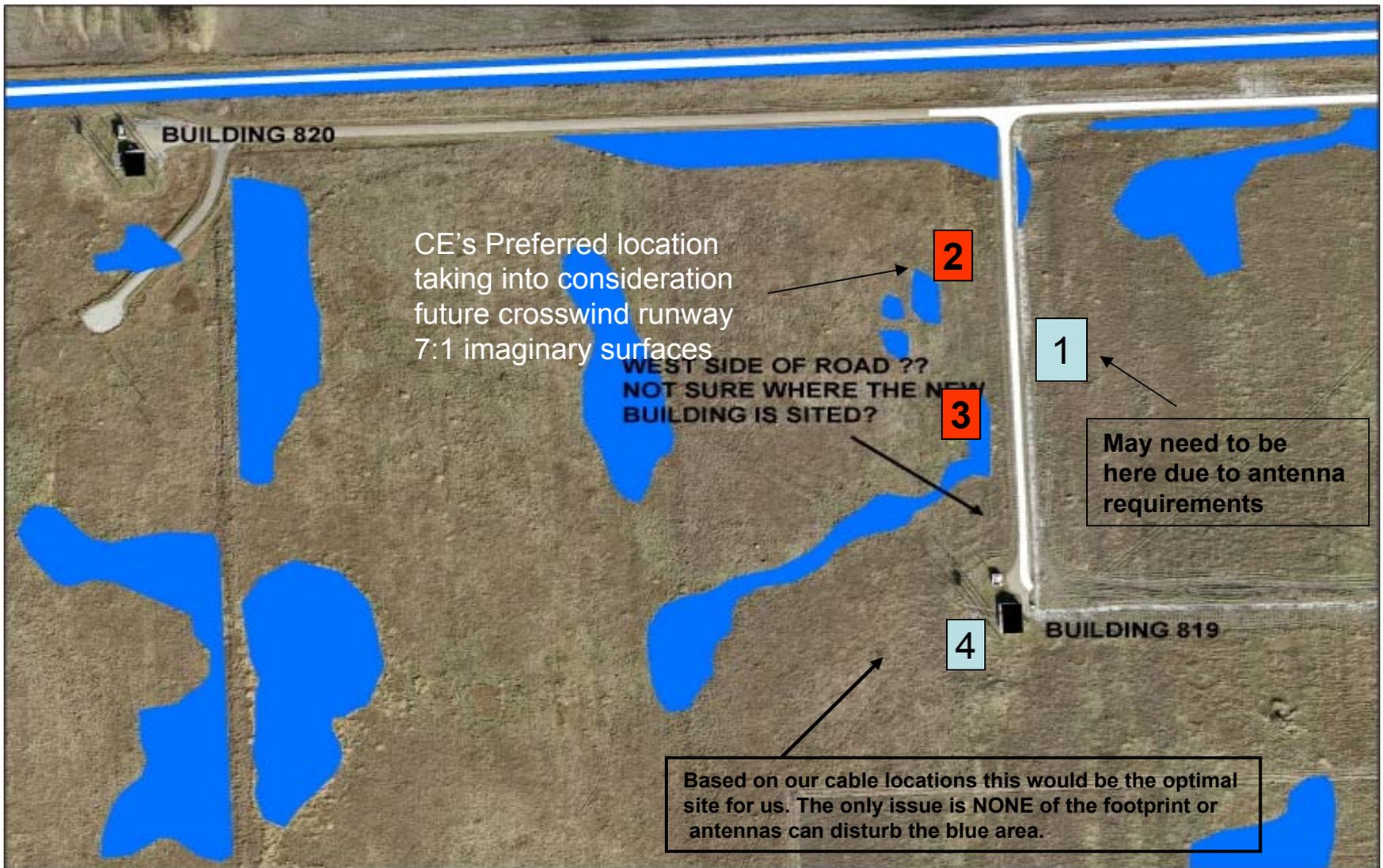


## SITE PLAN



\_\_\_\_\_  
FACILITY BOARD APPROVAL

\_\_\_\_\_  
DATE



- 1 – proposed location, due to higher ground & more room for antenna to avoid wetlands.
- 2 – alternative location; farthest from future crosswind runway 7:1 imaginary surface.
- 3 – poor alternative; many wetlands surround.
- 4- Comm's choice due to proximity to bldg 819 & existing cable locations; would need airfield waiver.

1. COMPONENT  
AF (AMC)

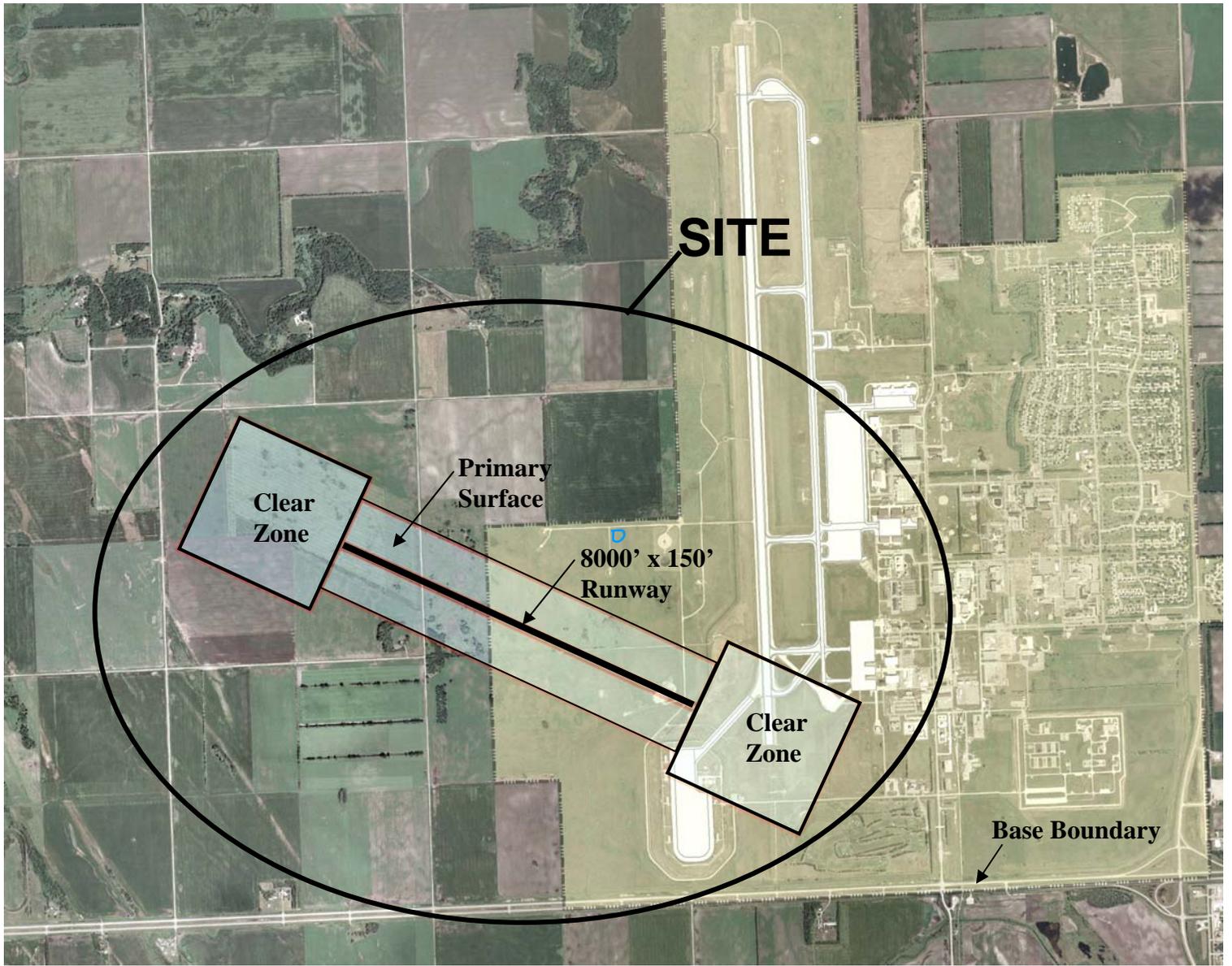
FY 2007 MILITARY CONSTRUCTION DATA

2. DATE  
28 Oct 05

3. INSTALLATION AND LOCATION  
GRAND FORKS AFB, NORTH DAKOTA

4. PROJECT TITLE  
BRAC-CONSTRUCT CROSSWIND RUNWAY

5. PROJECT NUMBER  
JFSD200607



**SITE PLAN**



APPENDIX F  
PUBLIC NOTICE AND INTERAGENCY RESPONSE

AFFIDAVIT OF PUBLICATION

STATE OF NORTH DAKOTA }  
COUNTY OF GRAND FORKS } SS.

W. Byrd of said State and County being first duly sworn, on oath says:

That { she } is { } a representative of the GRAND FORKS HERALD, INC.,

publisher of the Grand Forks Herald, Morning Edition, a daily newspaper of general circulation, printed and published in the City of Grand Forks, in said County and State, and has been during the time hereinafter mentioned, and that the advertisement of

Re: ground to air transmitters  
a printed copy of which is hereto annexed, was printed and published in every copy of the following issues of said newspaper, for a period of \_\_\_\_\_ time (s) to wit:

<u>3-28</u>	Yr. <u>06</u>	_____	Yr. _____
<u>3-30</u>	Yr. <u>06</u>	_____	Yr. _____
_____	Yr. _____	_____	Yr. _____
_____	Yr. _____	_____	Yr. _____

and that the full amount of the fee for the publication of the annexed notice inures solely to the benefit of the publishers of said newspaper; that no agreement or understanding for a division thereof has been made with any other person and that no part thereof has been agreed to be paid to any person whomsoever and the amount of said fee is \$ 18.76;

That said newspaper was, at the time of the aforesaid publication, the duly elected and qualified Official Newspaper within said County, and qualified in accordance with the law of the State of North Dakota to do legal printing in said County and State.

Publication Fee \$ 18.76

Subscribed and sworn to before me this 30 day of

Nov A.D. 06

Elaine Fawcett

Notary Public, Grand Forks, ND

**Public Notices**

**Air Force Base Public Notice**

Grand Forks Air Force Base has proposed the construction of a ground to air transmitter and receiver facility.

An environmental assessment has been conducted and a finding of no significant impact has been determined for this action.

Anyone wishing to view the support documents to this action should contact the 319th Air Refueling Wing Public Affairs Office within the next 30 days at 747-5017 or 747-5608. (March 28 & 30, 2006)

ELAINE FAWCETT  
NOTARY PUBLIC  
STATE OF NORTH DAKOTA  
My Commission Expires: Feb. 7, 2007

**1990 GLASTRON** 17' 4.3L Merc., nice, \$5400; 701-740-5108.

**BRAND new 2004** 191 Starcraft Islander, 3.0L Mercruiser with brand new trailer, asking \$17,000. Call 218-681-1755.

**WE BUY Used Boats.** All nice units will be considered. Call Hansen Cycle Marine, 877-808-4222.

**2004 SKIDOO** Rev Renegade 600HO, like new, \$5000. 2004 Arctic Cat Z370, electric start, 500 miles, \$2500; 218-779-8383.

**2005 F7 Sno Pro**, orange, 940 miles, \$5800. 2003 F7, 151" track, black, 3000 miles, one of a kind, \$5300; 701-351-3130.

**2006 POLARIS 600** HO Switchback, reverse, \$5900; Call 218-463-2300.

**2000 CHEVY** Silverado, under 45,000 miles, all bells & whistles. 218-773-9328.

**2001 FORD F-150** Super Crew XLT 4x4, 5.4L motor, cover, box liner. 218-222-3451.

**2002 AVALANCHE**, black, Z71, 85,000 mi., \$17,500; 701-739-6160

**2005 Colorado Crew** Cab 4x4, 27,000 mi., red in color, with extras. 218-425-7641.

control, sunroof, \$4900/offer. 741-3339.

**1999 OLDS** Eighty-Eight LS. Call (701) 740-9101 or 775-0282.

**1999 OLDS** Intrigue GL, 68,000 mi, 701-248-3376/360-0454.

**2001 AZTEC**, good gas mileage, 80,000mi, \$5500; 701-885-5330.

**2002 CHEVY** Cavalier Z24, excellent. Call 746-8837 or 739-4451 or 741-8341.

control, power sliding sunroof, Onstar system and 25,000 miles now at Dahlstrom Motors in Oslo MN or call 1-800-446-6756.

**2005 CHEVY** Suburban LT with navigation radio system, power sunroof, DVD entertainment system, 17,000 miles on this sand stoned colored 4 wheel drive now at Dahlstrom Motors in Oslo MN or call 1-800-446-6756.

**Public Notices**

**NOTICE OF SALE**

**NOTICE IS HEREBY GIVEN** that by virtue of a Judgment and Decree of Foreclosure rendered and given by the District Court in and for the County of Grand Forks, in the State of North Dakota, and entered and docketed in the Office of the Clerk of said Court on February 16, 2006, in an action wherein United Valley Bank was Plaintiff, and Robert J. Bohlman; Richard R. Bohlman; Grand Forks Grain Inspection Department, Inc.; United States of America; State of North Dakota; Alerus Financial N.A.; Job Service North Dakota; Keith Danks, Jr., and all persons unknown claiming any interest in or lien or encumbrance upon the real estate described in the Complaint were Defendants, adjudging that there is due and payable on the real estate Mortgage described in Plaintiff's Complaint the sum of \$81,522.90, which Judgment and Decree, among other things, directed the sale by me of the real estate hereinafter described to satisfy the amount of the Judgment with interest thereon and the costs and expenses of such sale or so much thereof as the proceeds of the sale applicable thereto will satisfy, and by virtue of a Writ to me issued out of the office of the Clerk and under the seal of the Court, directing me to sell the real property pursuant to said Judgment and Decree, the undersigned Sheriff of Grand Forks County, North Dakota, and the person appointed by the Court to make the sale, will sell the hereinafter described real estate to the highest bidder for cash at public auction at the front door of the Courthouse in the City of Grand Forks and the County of Grand Forks and the State of North Dakota, on April 11, 2006, at the hour of 10 o'clock in the forenoon of that day to satisfy the amount declared due and payable in said Judgment, with interests and costs thereon and the costs and expenses of such sale or so much thereof as the proceeds of such sale applicable thereto will satisfy. The premises to be sold pursuant to said Judgment and Decree and said Writ and to this Notice are located in Grand Forks County, North Dakota, and are described in the Judgment, Decree and Writ as follows, to-wit: Lots Five (5) and Six (6), in Block Fourteen (14), Skidmore's Addition to the Original Townsite of Grand Forks, Grand Forks County, North Dakota.

Also known as: 1504 Mill Road, Grand Forks, ND 58203

Dated this 8th day of March, A.D., 2006. /s/ Dan Hill, by: Greg Sampson, Deputy Sheriff the person to hold such sale and as the Sheriff/Chief Deputy of Grand Forks County, North Dakota  
Tracy A. Kennedy  
Zimney Foster PC  
3100 S. Columbia Rd. Ste. 200  
Grand Forks, ND 58208-3417  
Telephone No. (701) 772-8111  
(March 14, 21 & 28, 2006)

**IN DISTRICT COURT, GRAND FORKS COUNTY, NORTH DAKOTA**

John M. Solberg and Sharon A. Solberg, Plaintiffs,  
Vs.  
Lawrence Miller, Allan D. Brundell, Darlene D. Mikkelsen, Walter J. Mikkelsen Estate and all other persons unknown claiming any estate or interest in, or lien or encumbrance upon the property described in the Complaint. Defendants.

Civil No. 06C291  
**SUMMONS**  
THE STATE OF NORTH DAKOTA TO THE ABOVE-NAMED DEFENDANTS:

You are hereby summoned and required to appear and defend against the Complaint in the action, which is herewith served upon you or will be filed with the Clerk of District Court for Grand Forks County, P.O. Box 5939, Grand

**Public Notices**

Forks, North Dakota, 58206, by serving upon the undersigned an answer or other proper response within twenty (20) days after the last publication or service of the Summons, exclusive of the day of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in the Complaint.

Dated this 9th day of March, 2006.

Ted Maragos  
300 N. 5th St., Suite 2  
Grand Forks, ND 58203  
(701) 746-7366

N.D. License #03050  
Attorney for Plaintiffs.

**NOTICE OF PROPERTY DESCRIPTION**

The purpose of the above-entitled action is to quiet title to certain real estate located in the County of Grand Forks, State of North Dakota, described as follows:

Lots Five (5) and Six (6), in Block Forty-nine (49), of Budge and Eshelman's Third Addition to Grand Forks, according to the Plat thereof on file in the Office of the County Recorder within and for Grand Forks County, N.D., and recorded in Book "F" of Deeds, page 313.

The Plaintiffs seek to quiet title in and upon the real property described above by this action to terminate any rights, claims, or demands the Defendants may have upon the property. Plaintiffs do NOT seek any damages, monetary or otherwise, against the Defendants, and the only purpose of this action is to vest title in the property solely in the Plaintiffs.

Dated this 9th day of March, 2006.

Ted Maragos  
300 N. 5th St., Suite 2  
Grand Forks, ND 58203  
(701) 746-7366

N.D. License #03050  
Attorney for Plaintiffs.  
(March 14, 21 & 28, 2006)

**ADVERTISEMENT FOR BIDS**  
NORTH DAKOTA HERITAGE CENTER  
RESEARCH COLLECTIONS EXPANSION  
BISMARCK, NORTH DAKOTA  
LJA PROJECT NO. 04091

The State Historical Society of North Dakota requests Separate and/or Combined Sealed Proposals for General, Mechanical, and Electrical Construction work for the **North Dakota Heritage Center - Research Collections Expansion** in Bismarck, North Dakota. Bids will be received at the Lower Level Reception Desk for Support Services of the State Historic Society of North Dakota, 612 East Boulevard Avenue, Bismarck, North Dakota 58505, until **2:00 p.m. Central Time Zone, April 12, 2006**, at which time they will be opened and publicly read in the First Floor Project Room.

Bids shall be in accordance with and submitted on supplied Bid forms within the Bidding Documents prepared by Lightowler Johnson Associates Inc. Failure to do so will result in rejection of the Bid.

The work will consist of an addition to the existing North Dakota Heritage Center building. Construction involves three levels and an additional mechanical level under one portion of the addition.

Bidding Documents may be obtained from the office of Lightowler Johnson Associates Inc., 700 Main Ave., Fargo, North Dakota, 58103. Prime contractors may receive a full set of plans and specifications upon deposit of \$250.00 per set which will be refunded to those submitting bids and upon return of plans and specifications in good condition within ten (10) days after bid opening. Subcontractors may receive partial or complete sets of plans and specifications. These will be charged at the current reproduction rate and are not refundable. Completeness of partial sets shall be the responsibility of the party requesting.

**Public Notices**

Plans may be examined at the following locations until Bid opening time: Fargo-Moorhead Builders Exchange, Fargo, ND; Bismarck/Mandan Builders Exchange, Mandan, ND; Construction Plans Exchange, Bismarck, ND; Dickinson Builders Exchange, Dickinson, ND; Grand Forks Builders & Trades, Grand Forks, ND; Jamestown Builders Exchange; McGraw-Hill Construction Dodge/ReproMAX, Minneapolis, MN; and Minot Builders Exchange, Minot, ND. Each Bid submitted shall consist of two separate envelopes, attached together, with each envelope clearly marked on the outside "NORTH DAKOTA HERITAGE CENTER - RESEARCH COLLECTIONS EXPANSION, BISMARCK, NORTH DAKOTA, APRIL 2006."

Each Bidder shall submit in one envelope a Bidder's Security Bond in a sum equal to five percent (5%) of the full amount of the Bid to the North Dakota State Historical Society, executed by a surety company authorized to do business in North Dakota. All bonds shall comply with the North Dakota Century Code.

Each Bidder shall hold a current and valid North Dakota Contractor's License of the proper class issued by the Secretary of State, and shall enclose a copy of the license or certificate of renewal of the license in the same envelope as the Bidder's Security Bond. The license shall be for the highest amount of the Bidder's total bid combination including add alternates.

Each Bidder shall submit in the second envelope the Bid form supplied with the Bidding Documents or through addendum.

All bids must be upon the basis of cash payment for the work and materials and must be sealed.

No bids may be withdrawn for a period of thirty (30) days after the date and time set for the opening of bids.

The Board reserves the right to reject any or all bids, and to waive any informalities therein.

The successful bidder is required at the time the Contract is executed to provide a Sales Tax Certificate, Workers' Compensation Certificate, Certificate of Insurance, Company Safety Manual, Performance-Payment Bond, and Waiver of Subrogation.

State Historical Society of North Dakota  
Bismarck, North Dakota  
Mr. Thomas Linn  
Project Manager  
(March 21 & 28, April 4, 2006)

**SALE OF REAL PROPERTY**

The City of Grand Forks will receive bids for the sale of 223 Northridge Hills Court, a 3-bedroom, 2-story home plus basement with attached garage; the property is sold "as is." Minimum bid is \$187,000. Sealed bids will be publicly opened at the time and place listed below, with an auction following immediately. Only those submitting valid sealed bids will be allowed to participate in the auction. Bidding documents with additional information and open house schedule are available at the Office of Urban Development, 1405 1st Avenue N., Grand Forks, ND 58203; 701-746-2545. Sealed bids are due at the above address no later than 3:00 p.m. on April 25, 2006.

By Order of Greg Hoover, Director  
(March 25, 28 & 30, 2006)

**Air Force Base Public Notice**

Grand Forks Air Force Base has proposed the construction of a ground to air transmitter and receiver facility.

An environmental assessment has been conducted and a finding of no significant impact has been determined for this action.

Anyone wishing to view the support documents to this action should contact the 319th Air Refueling Wing Public Affairs Office within the next 30 days at 747-5017 or 747-5608.  
(March 28 & 30, 2006)

Compare properties makes us ant resource.



Elementary. This program is open to all base and surrounding community families with children who are 3 or 4-years-old by Aug. 31.

Four-year-old children from income-qualifying families or with special needs are accepted first, and 3-year-old children are accepted as slots are available.

Copies of parent's verification of income (leave and earnings statement) and children's birth certificate, shot records and social security number are needed. In addition, tours of Head Start will also be available.

For more information, call Carol Showers at 787-5028.

## Virtual employment for military spouses

The Staff Centrix program is designed to teach military spouses to launch and grow their own virtual assistant businesses, and embark on rewarding, challenging and portable careers.

The program is made up of a series of several workshops scheduled for April 20, 24, and 27. The application deadline is April 5. Participants are

selected based on the information they provide in their applications.

Candidates for the program should have a minimum of two years of administrative support experience, Internet access, a good working knowledge of basic software, a computer with the Windows 95 (or newer) operating system, and a strong desire for employment.

For more information to participate in this free training program, please submit the online application at [http://www.msvas.com/application\\_grandforks.html](http://www.msvas.com/application_grandforks.html) or contact Cheryl Anderson at 747-6436.

## AMXS spouses meeting

There will be a 319th Aircraft Maintenance Squadron spouses meeting Monday at 6 p.m. in the Sunflower Chapel basement.

The theme is "bring your scrapbook to share with others." This will be a time to share and learn about other squadron spouses' scrapbooking techniques.

Childcare will be provided.

For more information, call Mandy Roberts at 594-8334.

## Kickoff festivities

All members of the base community are invited to an event kicking off "Month of the Young Child," Saturday at 8:45 a.m. in the Community Activity Center. Rebecca Shelton (who recently won the state American Legion oratorical contest) will read a proclamation kicking off the month, which will be signed by Col. Bill Bender, 319th Air Refueling Wing commander. The event will also include a balloon drop and remarks by motivational speaker Tracey Ballas. For more information, please contact Kelly Painter at 747-4506.

## Environmental notice

Grand Forks Air Force Base has proposed the construction of a ground to air transmitter and receiver facility. An environmental assessment has been conducted and a finding of no significant impact has been determined for this action.

Anyone wishing to view the support documents to this action should contact the 319th Air Refueling Wing Public Affairs Office within the next 30 days at 747-5017 or 747-5608.



# Too Many Bills?

## Turn to Us.

**Choose wisely,  
Choose CCCS of The Village.**

- 114-year-old agency
- Get your bills under control
- Consolidate your payments

Call Consumer Credit Counseling Service  
of The Village Family Service Center.



**STATE  
HISTORICAL  
SOCIETY  
OF NORTH DAKOTA**

John Hoeven  
*Governor of North Dakota*

April 21, 2006

**North Dakota  
State Historical Board**

Marvin L. Kaiser  
*Williston - President*

Albert I. Berger  
*Grand Forks - Vice President*

Chester E. Nelson, Jr.  
*Bismarck - Secretary*

Gereld Gerntholz  
*Valley City*

A. Ruric Todd III  
*Jamestown*

Diane K. Larson  
*Bismarck*

John E. Von Rueden  
*Bismarck*

Sara Otte Coleman  
*Director  
Tourism Division*

Kelly Schmidt  
*State Treasurer*

Alvin A. Jaeger  
*Secretary of State*

Douglass Prchal  
*Director  
Parks and Recreation  
Department*

David A. Sprynczynatyk  
*Director  
Department of  
Transportation*

Merlan E. Paaverud, Jr.  
*Director*

Ms. Diane M. Strom  
Environmental Impact Analysis Program  
319 CES/CEVA, Room 128  
525 Tuskegee Airmen Blvd  
Grand Forks AFB ND 58205-6434

**ND SHPO 97-0527Y: GATR construction Grand Forks Air Force Base,  
North Dakota**

Dear Ms. Strom;

We reviewed ND SHPO 97-0527Y: GATR construction Grand Forks Air Force Base, North Dakota, and concur with a "No Historic Properties Affected" determination, provided the project is of the nature specified and takes place in the legal description outlined and mapped in the draft report. Any borrow fill, must come from an approved source, that is a source surveyed by an archaeologist and found to contain no significant cultural resources.

We concur that sites 32GF124 and 32GF125 are not eligible for nomination to the National Register of Historic Places.

If you have any questions please contact Susan Quinnell, at (701) 328-3576 or [squinnell@state.nd.us](mailto:squinnell@state.nd.us)

Sincerely,

Merlan E. Paaverud, Jr.  
State Historic Preservation Officer (North Dakota)

Accredited by the  
American Association  
of Museums

Rec 24 APR 06



May 2, 2006

Ms. Diane Strom  
Environmental Impact Analysis Program  
319 CES/CEVA, Room 128  
525 Tuskegee Airmen Blvd.  
Grand Forks AFB, ND 58205-6434

Re: Draft Environmental Assessment for Constructing a  
Ground-to-Air Transmitter & Receiver Facility at  
Grand Forks Air Force Base, Grand Forks County

Dear Ms. Strom:

This department has reviewed the information concerning the above-referenced project submitted under date of April 20, 2006, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.
2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.
3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

Environmental Health  
Section Chief's Office  
701.328.5150

Division of  
Air Quality  
701.328.5188

Division of  
Municipal Facilities  
701.328.5211

Division of  
Waste Management  
701.328.5166

Division of  
Water Quality  
701.328.5210

*Rec 8 May 06*

4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,



L. David Glatt, P.E., Chief  
Environmental Health Section

LDG:cc  
Attach.



**Construction and Environmental Disturbance Requirements**

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

**Soils**

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

**Surface Waters**

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

**Fill Material**

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

North Dakota  
Department of Commerce

Community Services

Economic  
Development & Finance

Tourism

Workforce Development



Century Center

1600 E. Century Ave

Suite 2

PO Box 2057

Bismarck, ND 58502-2057

Phone 701-328-5300

Fax 701-328-5320

www.ndcommerce.com



April 21, 2006

Diane M. Strom  
Dept. of the Air Force  
319 CES/CEVA, Room 128  
525 Tuskegee Airmen Blvd.  
Grand Forks AFB, ND 58205-6434

"Letter of Clearance" In Conformance with the North Dakota Federal Program  
Review System - State Application Identifier No.: ND060420-0160

Dear Ms. Strom:

**SUBJECT: Environmental Assessment - Construct a Ground-to-Air Transmitter  
and Receiver Facility**

The above referenced assessment has been reviewed through the North Dakota  
Federal Program Review Process. As a result of the review, clearance is given to the  
project only with respect to this consultation process.

If the proposed project changes in duration, scope, description, budget, location or  
area of impact, from the project description submitted for review, then it is necessary  
to submit a copy of the completed application to this office for further review.

We also request the opportunity for complete review of applications for renewal or  
continuation grants within one year after the date of this letter.

Please use the above SAI number for reference to the above project with this office.  
Your continued cooperation in the review process is much appreciated.

Sincerely,

A handwritten signature in cursive script that reads "James R. Boyd".

James R. Boyd  
Manager of Governmental Services  
Division of Community Services

bb

Rec 24 Apr 06

## Strom Diane Civ 319 CES/CEVA

---

**From:** Terry\_Ellsworth@fws.gov  
**Sent:** Friday, April 21, 2006 8:28 AM  
**To:** Strom Diane Civ 319 CES/CEVA  
**Cc:** Jeffrey\_Towner@fws.gov  
**Subject:** Re: EA to Construct a Ground-to-Air Transmitter and Receiver Facility at Grand Forks AFB

**Attachments:** EA FONSI draft.pdf



EA FONSI draft.pdf

Diane,

Thank you for the opportunity to review and comment on the Draft FONSI and EA for the construction of a Ground-to-Air Transmitter and Receiver (GATR) facility at Grand Forks Air Force Base. The proposed project will have minimal impacts to fish and wildlife resources and will not affect threatened and endangered species therefore the US Fish and Wildlife Service does not object to the construction of the preferred alternative as proposed.

Terry Ellsworth  
North Dakota Ecological Services Field Office  
3425 Miriam Avenue  
Bismarck, ND 58501

Office (701) 355-8505  
Fax (701) 355-8513  
Terry\_Ellsworth@fws.gov

"Strom Diane Civ 319  
CES/CEVA" To: <jboyd@state.nd.us>, <lknudtson@state.nd.us>, "Schumacher, John D."  
<Diane.Strom@grandfo <jdschumacher@state.nd.us>, <squinnell@state.nd.us>,  
<Terry\_Ellsworth@fws.gov>, <dglatt@state.nd.us>  
rks.af.mil> cc: <joleier@state.nd.us>, <tsteinwa@state.nd.us>, <sdylke@state.nd.us>,  
04/20/2006 01:24 PM <jeffrey\_towner@fws.gov>, <Marie\_Nelson@fws.gov>,  
<mpaaverud@state.nd.us>, <tdwelle@state.nd.us>  
Subject: EA to Construct a Ground-to-Air Transmitter and Receiver Facility at Grand  
Forks AFB

We are soliciting your views and comments on the proposed project. Any information or comments relating to environmental or other matters that you might provide will be used in identifying constraints that should be considered during the development of the proposed action.

Please forward any comments of information within twenty days. Thank you for your assistance. Any questions or concerns can be addressed to Diane Strom, Environmental Impact Analysis Program, 525 Tuskegee Airmen Blvd, Grand Forks AFB ND 58205-6434.

Sincerely,  
Diane M. Strom  
Environmental Impact Analysis Program  
319 CES/CEVA, Room 128  
525 Tuskegee Airmen Blvd  
Grand Forks AFB ND 58205-6434  
Phone (701) 747-6394; DSN 362-6394  
FAX (701) 747-6155; DSN 362-6155  
Diane.Strom@grandforks.af.mil  
(See attached file: EA FONSI draft.pdf)

**From:** Schumacher, John D. [jdschumacher@nd.gov]

**Sent:** Tuesday, May 02, 2006 5:35 PM

**To:** Strom Diane Civ 319 CES/CEVA

**Subject:** RE: EA to Construct a Ground-to-Air Transmitter and Receiver Facility at Grand Forks AFB  
The North Dakota Game and Fish Department has reviewed this project for wildlife concerns. We do not believe it will have any significant adverse effects on wildlife or wildlife habitat, including endangered species, based on the information provided.

Sincerely,  
John Schumacher  
Resource Biologist  
PH: 701-328-6321  
[jdschumacher@nd.gov](mailto:jdschumacher@nd.gov)

-----Original Message-----

**From:** Strom Diane Civ 319 CES/CEVA [mailto:Diane.Strom@grandforks.af.mil]

**Sent:** Thursday, April 20, 2006 1:25 PM

**To:** Boyd, James R.; Knudtson, Larry J.; Schumacher, John D.; Quinnell, Susan L.;  
Terry\_Ellsworth@fws.gov; Glatt, Dave D.

**Cc:** Leier, Joleen M.; Steinwand, Terry R.; Dyke, Steve R.; jeffrey\_towner@fws.gov;  
Marie\_Nelson@fws.gov; Paaverud, Merl E.; Dwelle, Terry L.

**Subject:** EA to Construct a Ground-to-Air Transmitter and Receiver Facility at Grand Forks AFB

We are soliciting your views and comments on the proposed project. Any information or comments relating to environmental or other matters that you might provide will be used in identifying constraints that should be considered during the development of the proposed action.

Please forward any comments of information within twenty days. Thank you for your assistance. Any questions or concerns can be addressed to Diane Strom, Environmental Impact Analysis Program, 525 Tuskegee Airmen Blvd, Grand Forks AFB ND 58205-6434.

Sincerely,

Diane M. Strom

Environmental Impact Analysis Program

319 CES/CEVA, Room 128

525 Tuskegee Airmen Blvd

Grand Forks AFB ND 58205-6434

Phone (701) 747-6394; DSN 362-6394



## DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 319TH AIR REFUELING WING (AMC)  
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

11 May 2006

MEMORANDUM FOR 319 CES/CEVA

FROM: 319 ARW/JA

SUBJECT: Legal Review – Construction of a Ground to Air Transmitter and Receiver (GATR) Facility. (EA/FONSI)

1. Based upon my review the proposed Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) complies with 32 CFR part 989 and is legally sufficient.
2. 32 CFR §. 989.14 states an EA must discuss the need for the proposed action, reasonable alternatives to the proposed action, the affected environment, the environmental impacts of the proposed action and alternatives (including the "no action" alternative), and a listing of agencies and persons consulted during preparation. The EA meets these requirements and follows the alternatives analysis guidance outlined in Sec. 989.8.
3. 32 CFR §. 989.14(g) states when the action selected is located in wetlands or floodplains, it must discuss why no other practicable alternative exists to avoid impacts. See AFI 32-7064, *Integrated Natural Resources Management*. The proposed alternative has no impact on wetlands.
4. Public notification was accomplished on March 28, 30 and 31, 2006. No public comments were received. Agency comments are included at the end of the EA. None appear to raise extraordinary environmental issues.
5. If you have any questions about these comments, please contact the undersigned at 7-3606.

A handwritten signature in black ink, appearing to read "Mark W. Hanson", is positioned above the typed name.

MARK W. HANSON, GS-12, DAF  
Chief, General Law