



Ground-Based Midcourse Defense (GMD) Validation of Operational Concept (VOC)



Supplemental Environmental Assessment

12 December 2002



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND
POST OFFICE BOX 1500
HUNTSVILLE, ALABAMA 35807-3801

December 12, 2002

Environmental Division

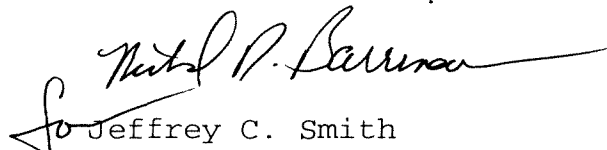
To Whom It May Concern:

Enclosed for your information and use are the final Ground-Based Midcourse Defense (GMD) Validation of Operational Concept (VOC) Supplemental Environmental Assessment and draft Finding of No Significant Impact. This office will receive comments on these documents until the close of business on 13 January 2003.

Questions and comments regarding these documents or requests for additional copies should be addressed to:

U.S. Army Space and Missile Defense Command
SMDC-EN-V/Mr. Kenneth R. Sims
P.O. Box 1500
Huntsville, Alabama 35807-3801

Sincerely,


Jeffrey C. Smith
Colonel, U.S. Army
Deputy Chief of Staff,
Engineer

Enclosures

**GROUND-BASED MIDCOURSE DEFENSE (GMD)
VALIDATION OF OPERATIONAL CONCEPT (VOC)
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

MISSILE DEFENSE AGENCY

AGENCY: Missile Defense Agency

ACTION: Finding of No Significant Impact

BACKGROUND: Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense (DoD) Instruction 4715.9, and 32 CFR Part 651, *Environmental Analysis of Army Actions* (Army Regulation 200-2), which implement these regulations, a Supplemental Environmental Assessment (EA) to analyze the environmental consequences of the Ground-Based Midcourse Defense (GMD) Validation of Operational Concept (VOC) activities has been completed.

Within the DoD, the Missile Defense Agency (MDA) is responsible for developing, testing, and deploying ballistic missile defense systems. One of these systems is the GMD (formerly known as National Missile Defense [NMD]), which is designed to intercept long-range ballistic missiles during the midcourse (ballistic) segment of their flight, before their reentry into the earth's atmosphere.

The purpose of the GMD is to defend all 50 States of the United States against limited ballistic missile attack. MDA prepared the NMD Deployment Environmental Impact Statement (EIS) to support a future deployment decision. The EIS was completed in July 2000. MDA issued a Record of Decision based on analysis in the NMD Deployment EIS to conduct initial site preparation activities for the Fort Greely, Alaska portion of a GMD test site. However, after a Department of Defense (DoD) review and reorganization in 2001, MDA re-focused the GMD from near-term deployment to an effort that would provide operationally realistic testing. To support subsequent decisions concerning construction and operation of GMD VOC test facilities, MDA prepared the original GMD VOC EA. The EA analyzed potential Ground-Based Interceptor (GBI) VOC test sites in Alaska and related actions at sites outside Alaska from among those sites that were evaluated in the NMD Deployment EIS.

The Proposed Action analyzed in the GMD VOC EA included construction and operation of six GBI silos and supporting facilities. The GMD VOC EA Finding of No Significant Impact was issued in April 2002 and MDA decided to construct and operate GMD VOC test components at the preferred locations, including a GBI VOC test site at Fort Greely.

The GMD VOC EA described Fort Greely with an area of 267,519 hectares (661,051 acres), consisting of the Main Post, two large training areas, and three outlying sites. As of 1 October 2002, the U.S. Army Space and Missile Defense Command became the Senior Mission Command for Fort Greely, which was reconfigured to support proposed missile defense activities. The current Fort Greely is approximately 2,914 hectares (7,200 acres). The Donnelly Training Areas East and West remain under U.S. Army Alaska control.

DESCRIPTION OF THE PROPOSED ACTION: The purpose of the Proposed Action is to provide security enhancements to ensure adequate force protection, land security, and air safety measures for Fort Greely, and to support supplemental activities that will validate the operational concept of GMD. The security enhancements are needed to comply with Army Regulation 325-13, which states that “commanders will ensure that [antiterrorism] specific security procedural and physical measures are employed to protect personnel, information, and material resources from terrorist threats.” The air safety enhancements are needed to provide better airspace control for military and civilian aircraft using Allen Army Airfield.

If the Proposed Action is approved, construction of the additional security measures analyzed in this Supplemental EA is scheduled to begin in Spring 2003 and upgrades at Allen Army Airfield would begin no earlier than Spring 2004. The additional activities proposed at Fort Greely include the following:

- Construction of security fences around three areas: the cantonment area, the southern boundary area, and the Allen Army Airfield;
- Extension of the Allen Army Airfield south-north runway (18/36) and the addition of turnarounds and approach lighting at each end;
- Improvements to the east-west runway (9/27) to upgrade the runway surface, add turnarounds to each end, and add lateral lighting systems;
- Designation of a hotspot at the north end of the 18/36 runway and the northeast end of the northeast-southwest runway (6/24). The hotspots require minimum safety setbacks of 434 meters (1,425 feet) for one interceptor and 547 meters (1,795 feet) assuming two interceptors are being loaded/unloaded;
- Provisions for deicing activities at the turnarounds at each end of the 18/36 and 9/27 runways; and
- Modifications to activities at Allen Army Airfield to include adding Class D to the existing Class E controlled airspace, reactivation of the control tower or construction of a new control tower, and installation and use of an ASR-11 or similar type airport surveillance radar.

The No-action Alternative and other alternatives previously analyzed in the GMD VOC EA were also considered.

ENVIRONMENTAL EFFECTS: Thirteen broad areas of environmental consideration were reviewed to provide a context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the severity of potential impacts. These areas included: air quality, airspace, biological resources, cultural resources, environmental justice, geology and soils, hazardous materials and waste, health and safety, infrastructure, land use, noise, socioeconomics, and water resources. These resource areas were analyzed as applicable for each proposed alternative or activity.

The results of this analysis indicated the Proposed Action would not significantly impact air quality standards; would improve airspace safety; would not result in a significant impact to wildlife resources, including moose habitat; would avoid known cultural resource sites; would not adversely impact any minority or low-income populations; would not significantly increase erosion or stormwater runoff; would not significantly increase hazardous material usage or hazardous waste production; would improve the health and safety of installation personnel; would not adversely impact installation infrastructure; would not significantly impact land use; would not increase noise levels above historic levels; would improve the short-term socioeconomic condition of the area due to improved employment; and would avoid impacts to wetlands.

CONCLUSION: The resulting environmental analysis determined that no significant impacts would occur as a result of the construction and operation of the security enhancements and air safety measures for Fort Greely. Preparation of an EIS, therefore, is not required.

DEADLINE FOR RECEIPT OF WRITTEN COMMENTS: 13 January 2003

POINT OF CONTACT: Submit written comments or requests for a copy of the EA to:

U.S. Army Space and Missile Defense Command
Attention: SMDC-EN-V (Kenneth R. Sims)
Post Office Box 1500
Huntsville, Alabama 35807-3801

**GROUND-BASED MIDCOURSE DEFENSE (GMD)
VALIDATION OF OPERATIONAL CONCEPT (VOC)
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

AGENCY: Missile Defense Agency

ACTION: Finding of No Significant Impact

APPROVED:

DATE: _____

RONALD T. KADISH
Lieutenant General, USAF
Director

DRAFT

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Block 19 (Continued):

Validation of the operational concept (VOC) through ground testing of the GMD is a vital part of operationally realistic testing. The initial test site preparation activities in the NMD Deployment EIS Record of Decision did not include construction and operation of a GMD VOC test site at Fort Greely. In March 2002, MDA published the GMD VOC Environmental Assessment (EA), which analyzed the facilities and operations to validate the GMD operational concept of the Ballistic Missile Defense System Test Bed.

The GMD VOC EA Finding of No Significant Impact was issued in April 2002 and MDA decided to construct and operate GMD VOC test components at the preferred location, including a GBI test site at Fort Greely, Alaska. Since that time, additional actions required to support the VOC activities have been identified. Accordingly, this supplemental EA examines the potential for impacts to the environment as a result of additional proposed GMD VOC activities.

The additional GMD test activities proposed at Fort Greely include the following.

- Construction of security fences around three areas: the cantonment area, the southern boundary area, and the Allen Army Airfield
- Extension of the Allen Army Airfield south-north runway (18/36) and the addition of turnarounds and approach lighting at each end
- Improvements to the east-west runway (9/27) to upgrade the runway surface, add turnarounds to each end, and add lateral lighting systems
- Designation of a hotspot (a location with minimum safety setbacks for loading/unloading interceptors) at the north end of the 18/36 runway and the northeast end of the northeast-southwest runway (6/24)
- Provisions for deicing activities at the turnarounds at each end of the 18/36 and 9/27 runways
- Modifications to activities at Allen Army Airfield to include adding Class D to the existing Class E controlled airspace, reactivation of the control tower or construction of a new control tower, and installation and use of an ASR-11 or similar type airport surveillance radar

EXECUTIVE SUMMARY

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Introduction

Within the Department of Defense, the Missile Defense Agency (MDA) is responsible for developing and testing the Ballistic Missile Defense System. There are three segments of this system currently under development: Boost Phase Defense, Midcourse Defense, and Terminal Defense. An element of the Midcourse Defense Segment is the Ground-Based Midcourse Defense (GMD), formerly known as the National Missile Defense (NMD). The operational concept of a GMD is that it could effectively protect all 50 states from a limited ballistic missile attack. The GMD Joint Program Office, within MDA, is responsible for the GMD, which is designed to intercept long-range ballistic missiles during the midcourse (ballistic) phase of their flight, before their reentry into the earth's atmosphere.

MDA completed the NMD Deployment Environmental Impact Statement (EIS) in July 2000 to support a future deployment decision. The NMD Deployment EIS evaluated site preparation activities encompassing an area of 243 hectares (600 acres) consisting of site layout, clearing of vegetation, initial earthwork related to site and road grading, and preparation for facility construction activities at Fort Greely. MDA issued a Record of Decision for initial site preparation activities based on analysis in the NMD Deployment EIS that identified disturbance to approximately 54 hectares (134 acres) within the area analyzed in the EIS.

Specific actions included installing and developing two water wells and site preparation work for test bed buildings, the main access road up to the Trans-Alaska Pipeline crossing, and a single missile field. These initial site preparation activities were considered not to be of sufficient magnitude to limit any later selection of the alternatives analyzed in the NMD Deployment EIS. This decision did not include construction and operation of a GMD Validation of Operational Concept (VOC) test site at Fort Greely. Following reviews directed by the current Bush Administration, MDA re-focused the GMD from near-term deployment to an effort that would provide operationally realistic testing.

The GMD Extended Test Range (ETR) EIS is currently being prepared and analyzes potential activities associated with the construction, operation, and test activities associated with the proposed GMD ETR. Under this Proposed Action, additional test facilities, infrastructure, and communications links would be constructed and operated for the purpose of providing more realistic GMD flight testing in the North Pacific Region. Existing range facilities would be enhanced, and additional launch and support sites would be established to support more robust missile flight tests. Fort Greely is not a facility being evaluated as a part of the GMD ETR Proposed Action.

The GMD VOC Environmental Assessment (EA) analyzed potential activities associated with validating the GMD operational concept necessary to test the interoperability of the GMD components in a realistic environment. A total area of 162 hectares (400 acres), including the previously mentioned 54 hectares (134 acres), was determined to be needed for the VOC EA activities. The activities evaluated included construction techniques, operational procedures, installation, checkout, assembly, and maintenance. These activities would produce significantly enhanced realistic Battle Management Command, Control, and Communications (BMC3) tests

conducted from existing facilities. They would also provide vital validation of the operational concept through distributed integrated ground tests using GMD components located in operationally representative locations and environments.

The GMD VOC EA Finding of No Significant Impact was issued in April 2002 and MDA decided to construct and operate GMD VOC test components at the preferred locations, including a Ground-Based Interceptor VOC test site at Fort Greely, Alaska. Accordingly, this supplemental EA examines the potential for impacts to the environment as a result of additional proposed GMD VOC activities.

The GMD VOC EA described Fort Greely with an area of 267,519 hectares (661,051 acres), consisting of the Main Post, two large training areas, and three outlying sites. As of 1 October 2002, the U.S. Army Space and Missile Defense Command became the Senior Mission Command for Fort Greely, which was reconfigured to support the proposed missile defense activities. The current Fort Greely is approximately 2,914 hectares (7,200 acres). The Donnelly Training Areas East and West remain under U.S. Army Alaska control.

This supplemental EA examines the potential for impacts to the environment, for planning purposes, as a result of additional GMD VOC activities.

Proposed Action

The additional GMD VOC activities analyzed in this supplemental EA would involve the following proposed actions:

- Construction of security fences around three areas: the cantonment area, the southern boundary area, and the Allen Army Airfield
- Extension of the Allen Army Airfield south-north runway (18/36) and the addition of turnarounds and approach lighting at each end
- Improvements to the east-west runway (9/27) to upgrade the runway surface, add turnarounds to each end, and add lateral lighting systems
- Designation of a hotspot (a location with minimum safety setbacks for loading/unloading interceptors) at the north end of the 18/36 runway and the northeast end of the northeast-southwest runway (6/24)
- Provisions for deicing activities at the turnarounds at each end of the 18/36 and 9/27 runways
- Modifications to activities at Allen Army Airfield to include adding Class D to the existing Class E controlled airspace, reactivation of the control tower or construction of a new control tower, and installation and use of an ASR-11 or similar type airport surveillance radar

In order to protect the installation's facilities and personnel, a series of fences as listed above would be installed at Fort Greely. The fences would be 2.4-meter (8-foot) high chain-link fencing with barbed wire above. Gates would be sited to facilitate ease of operations, emergency crew access, and security. Vegetation would be cleared from designated areas inside and outside the fence boundaries. The security fences may be constructed in series or all at one time, depending on funding and additional security requirements.

The first fence proposed for construction would be around the cantonment area to provide protection to the majority of the installation's facilities and personnel. The second series includes a preferred alignment and four alternative alignments that would involve additional fencing around the southern portion of Fort Greely and would provide additional security for the Ground-Based Interceptor VOC test site described in the GMD VOC EA. The third series would involve a fence around the airfield portion of the installation. For those areas within the pipeline easement that need to be cleared to meet the approximate 3.7-meter (12-foot) clear zone outside the fence, a Right-of-Way User Guideline would be obtained from Alyeska Pipeline Service Company. The Right-of-Way User Guideline would describe the activities allowed within the pipeline easement.

The area in the immediate vicinity of Fort Greely has a high density of small civilian aircraft that could present a safety risk to military aircraft. Improving air safety for continued military use of Allen Army Airfield would involve a phased approach that may include all or some of the proposed airfield modifications and air control activities.

The proposed extension of runway 18/36 at Allen Army Airfield would add approximately 305 meters (1,000 feet) at the north end and approximately 152 meters (500 feet) at the southern end as shown in figure 2-9. Because the runway would also be used as a taxiway, a turnaround area would be added at each end of the runway extension. The additional area would be a semi-circle with an approximate radius of 46 meters (150 feet).

Approach lighting would be added at each end of the extended runway. The lighting would be extended 914 meters (3,000 feet) past the threshold or end of the existing runway on both the north and south ends. The areas to each side of the approach light structures would be cleared to a total width of approximately 122 meters (400 feet). Hotspot areas would be designated at the north end of the 18/36 runway and the east end of the 9/27 runway for loading and unloading of interceptors. Deicing areas would be established at the turnarounds at each end of the 18/36 and 9/27 runways to ensure aircraft safety during all seasons.

The proposed improvements to runway 9/27 would include repairing and resurfacing the runway. Additionally, lateral clearing of approximately 244 meters (800 feet) on each side of the runway would be performed for safety purposes. The runway would not be extended; however, turnarounds would be added to each end of the runway because the runway would also be used as a taxiway. A standard lateral lighting system would be installed, as well as special lighting to be used by the Air National Guard.

To increase safety for military aircraft approaching Fort Greely, Class D airspace would be established at Allen Army Airfield. Class D airspace generally extends from the surface to 762 meters (2,500 feet) above ground level for a radius of approximately 7.4 kilometers (4 nautical miles) around the airfield. Class D airspace requires communication between arriving aircraft and the controller before entry, and thereafter those communications are maintained while in the Class D airspace. The controllers would be located at the reactivated Allen Army Airfield Control Tower or a new control tower constructed adjacent to the existing tower.

As an additional safety measure, an ASR-11 or similar type airport surveillance radar would be installed on Fort Greely. The radar would be installed on a tower to place the radar line-of-site above the trees and to provide coverage below 762 meters (2,500 feet) altitude. Two locations

are being considered. An area of approximately 0.4 hectare (1 acre) would be cleared for the radar and associated fencing. Trenching for power and communication lines may be required from the radar site to the modified control tower in Building 100 or a new control tower.

Visual and Instrument Flight Rules would be necessary at the Fort Greely airfield to support Ground-Based Interceptor requirements and would require an Air Traffic Control presence. Reactivation of the Allen Army Airfield control tower equipment and manpower would be key to controlling Fort Greely airspace. Estimated manpower for the tower would be 14 personnel. The existing tower would be modified or a new tower would be constructed adjacent to the existing control tower.

Alternatives Considered But Not Carried Forward

A potential alternative to construction of a fence at Fort Greely would be the use of additional personnel to provide force protection and security for the installation. This alternative would require a larger workforce but would not provide the level of force protection and security required. For this reason, this alternative was not carried forward.

A potential alternative to the three separate fences would be fencing completely around the installation's perimeter. This alternative was not considered feasible because the additional force protection and security provided for such a large area were not required, and, therefore, the additional costs and associated environmental impacts were not warranted.

No-action Alternative

Under the No-action Alternative, security fence construction, runway 18/36 modifications, runway 9/27 improvements, hotspot designations, deicing provisions, controlled airspace upgrade, control tower reactivation or construction, and radar construction would not be conducted. Without the fence, Fort Greely personnel and facilities would be at a security risk. The airfield and air control activities would not be accomplished, providing less than optimal safety for aircraft activities. The controlled airspace, reactivation of the control tower, and installation of a radar would not be implemented and Class E airspace would remain in effect for the Fort Greely area.

Methodology

To assess the significance of any impact, a list of activities necessary to accomplish the Proposed Action was developed. The affected environment at all applicable locations was then described. Next, those activities with the potential for environmental consequences were identified. The degree of analysis of proposed activities is proportionate to their potential to cause environmental impacts. This supplemental EA incorporates by reference much of the analysis in the NMD Deployment EIS and the GMD VOC EA. Proposed activities not addressed in those documents will be analyzed in detail in this supplemental EA.

Thirteen broad areas of environmental consideration were considered to provide a context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the severity of potential impacts. These areas included air quality, airspace, biological resources, cultural resources, geology and soils, hazardous materials and waste, health and safety, infrastructure, land use, noise, socioeconomics, water resources, and environmental justice. The areas were analyzed as applicable for each proposed location or activity.

Results

This section summarizes the conclusions of the analyses made for each of the areas of environmental consideration based on the application of the described methodology. Within each resource summary, only those activities for which a potential environmental concern was determined are described.

Air Quality—All areas under consideration are in attainment areas, and as such no General Conformity Applicability Analysis requirements are anticipated for the Proposed Action. Construction and operation emissions would be intermittent and are not anticipated to cause exceedances of air quality standards.

Airspace—The Proposed Action would require a change in airspace definition and control by adding Class D to the existing Class E controlled airspace. The configuration of each area of Class D airspace is individually tailored and would be designed to contain published instrument flight procedures. The final design would be published in Federal Aviation Administration Order 7400.9J. Class D airspace is generally designed as the airspace from the surface to 762 meters (2,500 feet) above the airport elevation surrounding those airports that have an operational control tower. Class D airspace also requires two-way communication within a 7.4-kilometer (4-nautical mile) radius of the airfield. The Proposed Action would likely result in a minor operational inconvenience to local pilots that choose not to avoid the Class D airspace by flying around the controlled airspace. Those pilots that choose to fly through the Class D airspace would be required to have operational communication equipment in the aircraft. Accordingly, flight safety would improve due to the availability of aviation advisory services to the local pilots.

Biological Resources—Rights-of-way along existing roads, trails, and the Trans-Alaska pipeline would be used when possible to minimize the potential for impact to vegetation. No threatened or endangered species have been identified within the proposed project areas. No designated anadromous streams would be impacted. Ground disturbance and equipment noise-related impacts would include loss of a small amount of habitat, displacement of wildlife, increased stress, and disruption of daily/seasonal behavior. The fencing would pose a barrier to mammals, other than small rodents, and restrict their movement into the fenced areas. However, additional similar habitat is adjacent to the proposed fence routes. The presence of personnel during construction may cause wildlife to avoid the area, at least temporarily, and could reduce the potential for impacts from elevated noise levels during construction. Approach lights would be red in color and directed upward; thus, the effects to wildlife would be minimized. Large mammals, primarily moose, would be herded from the fenced area before enclosing the fences to ensure their safety, as well as that of personnel. An estimated three to five moose would be displaced from the current Fort Greely if the cantonment, airfield, and Preferred Southern Boundary fences were constructed.

Any disturbance to wetlands by the Proposed Action would be minimized by implementing appropriate techniques to control runoff and other Best Management Practices, such as stabilizing fill slopes from erosion and the use of hay bales to filter sediment from storm water runoff at construction sites. Palustrine Emergent wetlands southeast of the landfill would be impacted by construction of Alternative Alignment 1 of the southern fencing proposal. A wetlands permit from the U.S. Army Corps of Engineers would be required.

Cultural Resources— Much of the proposed construction areas are heavily disturbed from previous clearing and operational activities, and the likelihood of historic properties being present is low. Two known cultural resource sites exist in the vicinity of the alternative site on the knoll south of the airfield. The final siting of this alternative location would avoid these sites.

If during the course of supplemental GMD VOC activities, cultural items are discovered, activities would cease in the immediate area and the State Historic Preservation Office and potentially affiliated Native Alaskan entities would be notified in accordance with Fort Greely procedures.

Geology and Soils—Impacts to geology and soils during construction of the security fences and the airfield modifications would occur during excavations, clearing, trenching, and pole emplacements, all of which would be short-term in nature. Best Management Practices incorporated into the Proposed Action such as stabilizing fill slopes from erosion, hand clearing along the bank of Jarvis Creek and leaving stumps, and the use of erosion control measures to filter sediment from storm water runoff would be followed to reduce the potential for soil erosion. Geotechnical studies conducted in the vicinity did not discover any ice lenses or other permafrost features; therefore, no impacts to permafrost would be expected.

Hazardous Materials and Waste—Temporary storage tanks and other facilities for the storage of hazardous materials would be located in protected and controlled areas designed to comply with site-specific spill prevention and countermeasure plans. All hazardous materials used and hazardous waste generated during construction would be handled in accordance with the Fort Greely Environmental Procedures. The supplemental GMD VOC activities on Fort Greely are not anticipated to impact ongoing cleanup efforts. Modifications to the existing control tower would consider the potential presence of lead-based paint and asbestos. If present, all activities would be performed in accordance with the Fort Greely Environmental Procedures. Deicing fluids would be captured in a sump and collected for disposal.

Health and Safety—Construction would be conducted in accordance with applicable regulations and permits and no impacts to health and safety are anticipated. The security fencing would enhance the safety of Fort Greely personnel. The extension of the runway to provide overruns for aircraft and the installation of approach lighting to aid in navigation would provide a safer airfield during operations. Class D airspace designation and accompanying operational requirements would provide increased safety for flight operations for all airspace users. Because the fire station is located near the proposed main gate to the cantonment area, the proposed fencing would not cause an impact to emergency personnel response time to most locations on Fort Greely. The current level of fire protection services at Fort Greely is considered adequate to provide coverage of mission activities at Allen Army Airfield. Designation of hotspots and associated safety setback distances on runways 18/36 and 6/24 would not impact any inhabited buildings. Operation of an airport surveillance radar would generate electric and magnetic fields, including radio frequency radiation. At all locations near the radar, the airport surveillance radar signal would comply with the guideline levels for occupational exposure.

Infrastructure—The reduction in the number of personnel on Fort Greely has resulted in an increase in available utility capacities. The supplemental GMD VOC activities at Fort Greely would have a minimal impact on infrastructure. All current infrastructure systems have adequate capacity to support anticipated demands.

Land Use—The construction of security fencing would be compatible with regional and local planning/zoning and surrounding on and off installation land uses. The airfield fence would not change any existing land uses and would take into account airfield safety and clear zones. The construction and operation of the approach lighting could change the use of the cleared area surrounding the light structures on Donnelly Training Areas East and West. But the overall impact of the change in training use would be minimal to the training mission at Donnelly Training Area.

Noise—Since no noise sensitive receptors are known to exist within 1.9 kilometers (1.2 miles) of the proposed construction locations at Fort Greely, no impacts to the noise environment would be expected from construction equipment noise. Operation of the supplemental GMD VOC activities is not expected to result in any adverse noise impacts near Fort Greely. The proposed use of the installation, including aircraft landings, would be less than when Fort Greely was a fully operational installation.

Socioeconomics—Supplemental GMD VOC construction activities would require 10 to 35 construction personnel. The operational phase of the supplemental GMD VOC activities could result in employing 5 to 10 contract security personnel. Up to 14 full time personnel may be needed to staff the control tower. It is anticipated that construction and operation would result in a slight economic benefit to the installation and surrounding region.

Water Resources—A minor potential exists for short-term increases to sediment in surface water during construction. Due to the relatively level topography and low precipitation, drainage patterns would only be altered slightly, and surface water runoff and erosion would be minimal. Disturbance to stream channels, drainage patterns, and stream banks would be minimized to the extent practicable. Best Management Practices such as stabilizing fill slopes from erosion and the use of erosion control measures to filter sediment from storm water runoff would be implemented. Potential impacts to water resources resulting from accidental spills of hazardous materials during construction would be minimized because all activities would follow the Fort Greely Environmental Procedures. Deicing areas would be sloped to prevent deicing fluids from reaching surface water areas.

Environmental Justice—No low-income or minority populations would be disproportionately affected by the proposed supplemental GMD VOC activities.

Cumulative Impacts—There may be some temporary, minor cumulative impacts to air quality during construction of the proposed actions. Similarly, there would be a minor cumulative increase in the use of hazardous materials, generation of hazardous waste, and demand on infrastructure and utility systems during the various construction phases. Given the small amount of loss of wildlife habitat in the region of Fort Greely from past and current development, the additional loss of habitat from the proposed actions would not result in a substantial cumulative reduction in habitat or wildlife populations. There would be no long-term significant cumulative impacts to soils or water quality, since disturbed areas would be grassed after construction is completed. There would be a slight loss of wetlands (Southern Boundary Fence Alternative Alignment 1). Some cumulative beneficial impacts on local economies from construction and operation activities would be expected. Operations and maintenance activities would not result in a substantial cumulative impact.

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ACRONYMS AND ABBREVIATIONS

ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
AFB	Air Force Base
ANSI	American National Standards Institute
ASR	Airport Surveillance Radar
BMC2	Battle Management, Command and Control
BMC3	Battle Management, Command, Control, and Communications
BMP	Best Management Practices
CFR	Code of Federal Regulations
CTA	Control Area
dB	Decibel
dBA	Decibel, A-weighted
DNL (L_{dn})	A-weighted Day-Night Equivalent Sound Level
DoD	Department of Defense
DSCS	Defense Satellite Communication System
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FIR	Flight Information Region
FONSI	Finding of No Significant Impact
GBI	Ground-Based Interceptor
GMD	Ground-Based Midcourse Defense
HABS	Historic American Buildings Survey
IDT	In-Flight Interceptor Communication System Data Terminal
IEEE	Institute of Electrical and Electronics Engineers
IFR	Instrument Flight Rules
IRP	Installation Restoration Program
kW	Kilowatt
$L_{eq}(1 \text{ hour})$	Continuous Equivalent Sound Level
MDA	Missile Defense Agency
MHz	Megahertz
MPE	Maximum Permissible Exposure

MSL	Mean Sea Level
MW	Megawatt
mW/cm ²	Milliwatt(s) per Square Centimeter(s)
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMD	National Missile Defense
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
PM-10	Particulate Matter of 10 Microns in Diameter or Smaller
RFR	Radio Frequency Radiation
ROI	Region of Influence
ROD	Record of Decision
SHPO	State Historic Preservation Officer
SWPPP	Storm Water Pollution Prevention Plan
USARAK	United States Army Alaska
USASMDC	United States Army Space and Missile Defense Command
USFWS	United States Fish and Wildlife Service
VFR	Visual Flight Rules
VHF	Very High Frequency
VOC	Validation of Operational Concept
VOR	Very High Frequency Omni-directional Range

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1.0
PURPOSE AND NEED

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, Department of Defense (DoD) Instruction 4715.9, and the applicable service environmental regulations, which implement these laws and regulations, direct DoD officials to consider environmental consequences when authorizing and approving federal actions. In March 2002, the Missile Defense Agency (MDA) published the *Ground-Based Midcourse Defense (GMD) Validation of Operational Concept (VOC) Environmental Assessment (EA)*, which analyzed facilities and operations necessary to validate the GMD operational concept of the Ballistic Missile Defense System Test Bed. Since that time, additional actions required to support the VOC activities have been identified. Accordingly, this supplemental EA examines the potential for impacts to the environment, for planning purposes, as a result of additional GMD VOC activities.

1.2 BACKGROUND

Within the DoD, MDA is responsible for developing and testing the Ballistic Missile Defense System. There are three segments of this system currently under development: Boost Phase Defense, Midcourse Defense, and Terminal Defense. An element of the Midcourse Defense Segment is the GMD, formerly known as the National Missile Defense (NMD). The operational concept of a GMD is that it could effectively protect all 50 states from a limited ballistic missile attack. The GMD Joint Program Office, within MDA, is responsible for the GMD, which is designed to intercept long-range ballistic missiles during the midcourse (ballistic) phase of their flight, before their reentry into the earth's atmosphere.

MDA completed the NMD Deployment Environmental Impact Statement (EIS) in July 2000 to support a future deployment decision. The NMD Deployment EIS evaluated site preparation activities encompassing an area of 243 hectares (600 acres) consisting of site layout, clearing of vegetation, initial earthwork related to site and road grading, and preparation for facility construction activities at Fort Greely. MDA issued a Record of Decision for initial site preparation activities based on analysis in the NMD Deployment EIS that identified disturbance to approximately 54 hectares (134 acres) within the area analyzed in the EIS.

Specific actions included installing and developing two water wells and site preparation work for test bed buildings, the main access road up to the Trans-Alaska Pipeline crossing, and a single missile field. These initial site preparation activities were considered not to be of sufficient magnitude to limit any later selection of the alternatives analyzed in the NMD Deployment EIS. This decision did not include construction and operation of a GMD VOC test site at Fort Greely. Following reviews directed by the current Bush Administration, MDA re-focused the GMD from near-term deployment to an effort that would provide operationally realistic testing.

The GMD Extended Test Range (ETR) EIS is currently being prepared and analyzes potential activities associated with the construction, operation, and test activities associated with the

proposed GMD ETR. Under this Proposed Action, additional test facilities, infrastructure, and communications links would be constructed and operated for the purpose of providing more realistic GMD flight testing in the North Pacific Region. Existing range facilities would be enhanced, and additional launch and support sites would be established to support more robust missile flight tests. Fort Greely is not a facility being evaluated as a part of the GMD ETR Proposed Action.

The GMD VOC EA analyzed potential activities associated with validating the GMD operational concept necessary to test the interoperability of the GMD components in a realistic environment. A total area of 162 hectares (400 acres), including the previously mentioned 54 hectares (134 acres), was determined to be needed for the VOC EA activities. The activities evaluated included construction techniques, operational procedures, installation, checkout, assembly, and maintenance. These activities would produce significantly enhanced realistic Battle Management Command, Control, and Communications (BMC3) tests conducted from existing facilities. They would also provide vital validation of the operational concept through distributed integrated ground tests using GMD components located in operationally representative locations and environments.

The Preferred Alternative analyzed in the GMD VOC EA included construction and operation of six Ground-Based Interceptor (GBI) silos and supporting facilities at Fort Greely; In-Flight Interceptor Communication System Data Terminals (IDTs) and Defense Satellite Communication System (DSCS) earth terminals at Fort Greely and Eareckson Air Station, Alaska; and a Missile Transfer Facility at Eielson Air Force Base (AFB), Alaska. The Preferred Alternative also included use of the existing COBRA DANE Radar, with upgraded hardware and software, at Eareckson Air Station; the Early Warning Radar to be upgraded at Beale AFB, California; and communications among all facilities analyzed. Clear Air Force Station, Alaska was considered as an alternative location to Fort Greely for GBI silos, associated BMC3, and support facilities. Several locations were also considered for Battle Management, Command and Control (BMC2) Nodes. These locations included Peterson AFB, Shriever AFB, and Cheyenne Mountain Complex, Colorado, the Boeing Facilities in California and Alabama, Beale AFB, and Eareckson Air Station. A BMC2 Node would also be located at the selected GBI VOC test site. The GMD VOC EA Finding of No Significant Impact was issued in April 2002 and MDA decided to construct and operate GMD VOC test components at the preferred locations, including a GBI VOC test site at Fort Greely, Alaska.

The GMD VOC EA described Fort Greely with an area of 267,519 hectares (661,051 acres), consisting of the Main Post, two large training areas, and three outlying sites. As of 1 October 2002, the U.S. Army Space and Missile Defense Command (USASMDC) became the Senior Mission Command for Fort Greely, which was reconfigured to support the proposed missile defense activities. The current Fort Greely is approximately 2,914 hectares (7,200 acres). The Donnelly Training Areas East and West remain under U.S. Army Alaska (USARAK) control.

MDA is in the preliminary stages of considering the feasibility and value of a checkout flight from the GBI VOC test site. There is no present intent to test fire interceptor missiles from Fort Greely. Any potential future decision to test fire at Fort Greely would only occur after a thorough environmental and safety analysis was performed. However, in the event of a missile attack on the United States, the test bed at Fort Greely could potentially be used for ballistic missile defense.

1.3 PURPOSE AND NEED

The purpose of the Proposed Action is to provide security enhancements to ensure adequate force protection, land security, and air safety measures for Fort Greely, and to support supplemental activities that will validate the operational concept of GMD. The security enhancements at Fort Greely are needed to comply with Army Regulation 325-13, which states that “commanders will ensure that [antiterrorism] specific security procedural and physical measures are employed to protect personnel, information, and material resources from terrorist threats.” The air safety enhancements are needed to provide better airspace control for military and civilian aircraft, as well as improved safety during landings and takeoffs of aircraft delivering or removing GBIs. The activities at Allen Army Airfield are also needed to improve mission safety and security, since interceptors would not have to be transported for long distances (from Eielson AFB) over public roads. These proposed actions are consistent with the current mission of Fort Greely.

1.4 DECISION(S) TO BE MADE

The decisions to be made are whether to proceed with the supplemental activities to validate the operational concept as well as the additional security fencing activities around the cantonment area, the southern boundary area, and Allen Army Airfield. This analysis also supports decisions concerning the airfield modifications and air control improvements (adding Class D airspace, reactivation of the control tower or the construction of a new control tower, and installation and use of an airport surveillance radar [ASR]) at Allen Army Airfield on Fort Greely.

1.5 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This analysis is tiered from the *Ballistic Missile Defense Final Programmatic Environmental Impact Statement* (Ballistic Missile Defense Organization, 1994), which evaluated NMD, now GMD, programmatic activities, such as research and development, testing, production, and the general operational concept. One of two actions will be taken based on the results of this supplemental EA. Either a Finding of No Significant Impact will be attached to the Final GMD VOC Supplemental EA, or a Notice of Intent to prepare an EIS will be published.

This supplemental EA will incorporate by reference much of the analysis in the GMD VOC EA and the NMD Deployment EIS. Proposed activities at Fort Greely not addressed in those documents will be analyzed in detail herein. The analysis portion of this supplemental EA will identify those environmental resource areas that would clearly not be affected, and the analysis will focus on environmental resource areas that could potentially be affected by the proposed additional activities.

Additional activities have been determined necessary for Eareckson Air Station and Beale AFB. For Eareckson Air Station these actions include modifications to an existing building to accommodate an IDT administration and storage facility, installation of temporary vans to provide satellite links until the permanent DSCS facilities are operational, minor realignments of the fiber optic cable routes along existing rights-of-way and previously disturbed areas, and

installation of a cable run from the COBRA DANE facility to Building 618 and 600, and other buildings as necessary. All excavations would be monitored by an archaeologist in accordance with the 8 August 2002 concurrence letter from the Alaska State Historic Preservation Officer (SHPO). These additional activities are within the scope of analysis of the GMD VOC EA and have no additional environmental effects; therefore, they will not be analyzed in this supplemental EA.

At Beale AFB, trenching and installation of fiber optic cable would occur from the base boundary along J Street (named South Beale Road off base) approximately 3.7 kilometers (2.3 miles). This new segment would connect to an existing fiber optic conduit at Gavin Mandery Road on base. The fiber optic cable would be installed in the existing right-of-way along the east shoulder of the road. There are no new environmental impacts identified with these activities and no new environmental analysis would be necessary. Therefore, the activities were determined to be categorically excluded by the U.S. Air Force through their environmental impact analysis process because no wetlands would be directly or indirectly affected by the actions. Therefore, they will not be analyzed in this supplemental EA. Off-base of Beale AFB, additional trenching and installation of fiber optic cable would occur from an existing communication line along Ostrum Road to Beale AFB, approximately 6.7 kilometers (4.2 miles). This cable would be installed in the right-of-way along the road shoulder and connect to the cable previously mentioned on South Beale Road. There are no new environmental impacts identified with these activities. No additional analysis is required in this document.

The Federal Aviation Administration (FAA) will be a cooperating agency because of their regulatory authority in reactivating the control tower and adding Class D to controlled airspace at Allen Army Airfield, located at Fort Greely. The Federal Communications Commission may also be a cooperating agency in the future because of their involvement in aviation communication and frequency issues.

If the Proposed Action is approved, construction of the additional security measures analyzed in this supplemental EA would begin in Spring 2003, and upgrades at Allen Army Airfield would begin no earlier than Spring 2004. The additional activities proposed at Fort Greely include the following:

- Construction of security fences around three areas: the cantonment area, the southern boundary area, and the Allen Army Airfield
- Extension of the Allen Army Airfield south-north runway (18/36) and the addition of turnarounds and approach lighting at each end
- Improvements to the east-west runway (9/27) to upgrade the runway surface, add turnarounds to each end, and add lateral lighting systems
- Designation of a hotspot at the north end of the 18/36 runway and the northeast end of the northeast-southwest runway (6/24)
- Provisions for deicing activities at the turnarounds at each end of the 18/36 and 9/27 runways

- Modifications to activities at Allen Army Airfield to include adding Class D to the existing Class E controlled airspace, reactivation of the control tower or construction of a new control tower, and installation and use of an ASR-11 or similar type airport surveillance radar

1.6 RELATED DOCUMENTATION

The following documents have analyzed actions similar to those activities proposed for this supplemental EA or provide information on the existing environment described in chapter 3.0.

Ballistic Missile Defense Organization, 1994. *Ballistic Missile Defense Final Programmatic Environmental Impact Statement*.

Department of Defense, 2000. *National Missile Defense Deployment Environmental Impact Statement*, July.

U.S. Air Force, 2002. *Edwards Air Force Base Digital Airport Surveillance Radar Environmental Assessment Final*, June.

U.S. Army Space and Missile Defense Command, 2002. *Ground-Based Midcourse Defense (GMD) Validation of Operational Concept (VOC) Environmental Assessment*, March.

Contact the U.S. Army Space and Missile Defense Command, SMDC-EN-V, PO Box 1500, Huntsville, AL 35807-3801 for information on obtaining documents incorporated by reference.

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2.0

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTIONS, FORT GREELY, ALASKA

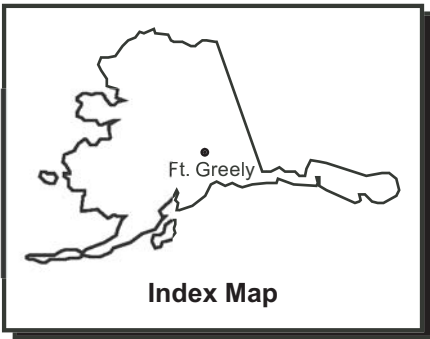
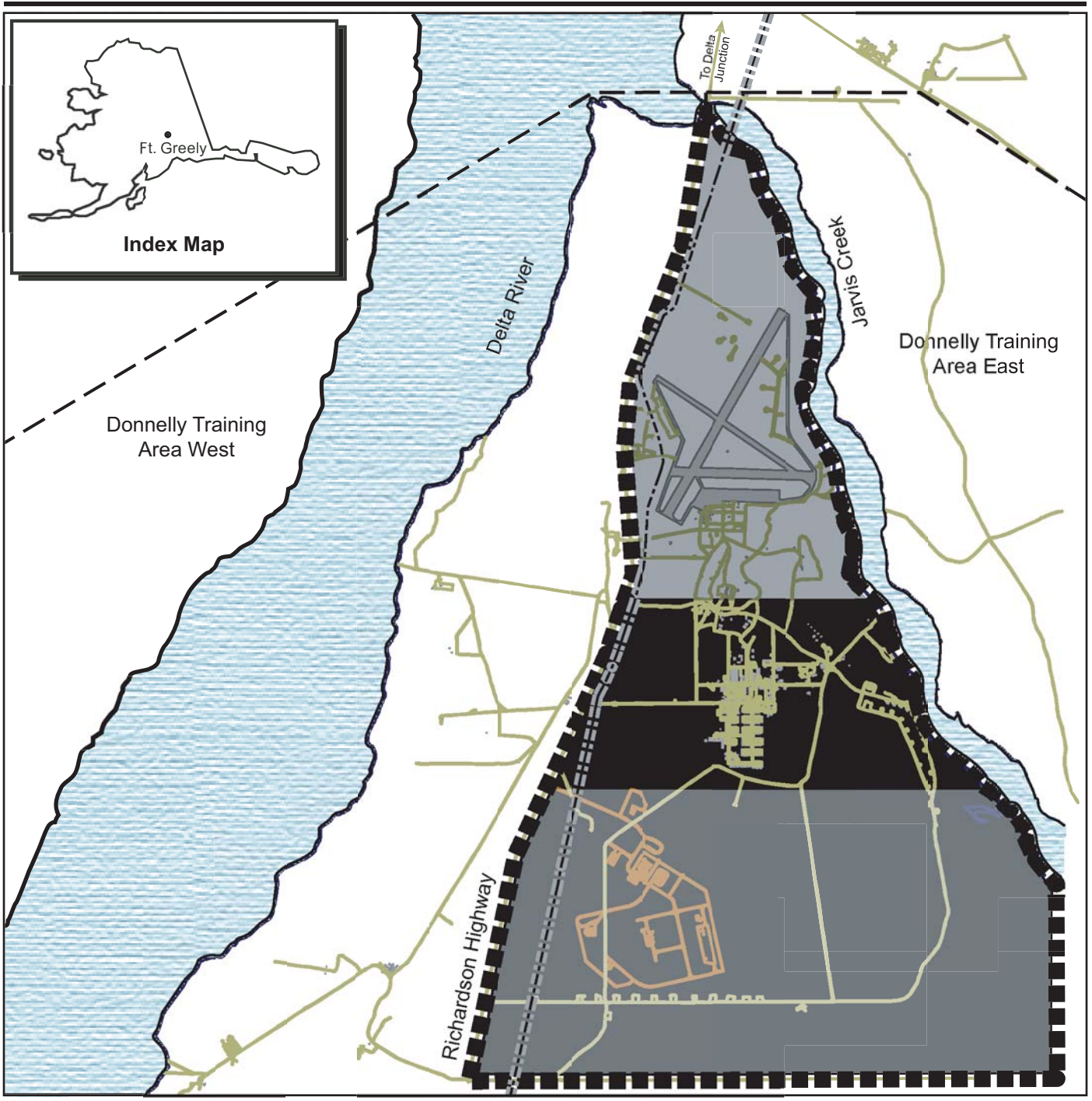
The additional GMD VOC activities analyzed in this supplemental EA would involve the following proposed actions:

- Construction of security fences around three areas: the cantonment area, the southern boundary area, and the Allen Army Airfield
- Extension of the Allen Army Airfield south-north runway (18/36) and the addition of turnarounds and approach lighting at each end
- Improvements to the east-west runway (9/27) to upgrade the runway surface, add turnarounds to each end, and add lateral lighting systems
- Designation of a hotspot at the north end of the 18/36 runway and the northeast end of the northeast-southwest runway (6/24)
- Provisions for deicing activities at the turnarounds at each end of the 18/36 and 9/27 runways
- Modifications to activities at Allen Army Airfield to include adding Class D to the existing Class E controlled airspace, reactivation of the control tower or construction of a new control tower, and installation and use of an ASR-11 or similar type airport surveillance radar

Figure 2-1 depicts the location of Fort Greely and the three general areas of the installation where security fencing is proposed to be installed.

2.1.1 SECURITY FENCING

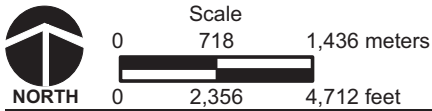
In accordance with Army Regulation 190-11, *Physical Security of Arms, Ammunition, and Explosives*, 12 February 1998, and Army Regulation 525-13, *Antiterrorism*, 4 January 2002, installations are required to take measures to protect the installation's facilities and personnel. To meet this requirement, a series of fences would be installed at Fort Greely in three areas: the cantonment area, the southern boundary area, and the airfield. Gates would be sited to facilitate ease of operations, emergency crew access, and security. The fences would be 2.4-meter (8-foot) high chain-link fencing with barbed wire above. Security measures would be incorporated within the project design and operation procedures. All vegetation would be cleared within a zone of approximately 9.1 meters (30 feet) inside the security fence and approximately 3.7 meters (12 feet) outside the fence. An additional 3 meters (10 feet) of clearing may be necessary in order to windrow (linear pile) the cleared debris; therefore, the fence right-of-way would be a maximum of 15.8 meters (52 feet) wide. The fence alignments have been selected to take advantage of existing roads, trails, and rights-of-way to reduce the amount of clearing required. In some areas, no clearing would be needed, and in others it could range from a width of 6.7 to 15.8 meters (22 to 52 feet). Best Management Practices (BMPs),



EXPLANATION

- Installation Boundary; 2,914 hectares (7,200 acres)
- Trans-Alaska Pipeline
- Primary Roads
- GBI VOC Test Site
- Donnelly Training Area Boundary
- Airfield Area
- Cantonment Area
- Southern Boundary Area
- Water

Fort Greely Overview



Fort Greely, Alaska

Figure 2-1

11-13-02 Ft Greely overview

such as silt fence, straw bales, and protective covering, would be used to reduce the potential for soil erosion. The cleared area would be reseeded with a grass mixture suitable for the area.

There is a possibility that cultural sites could be encountered during construction activities. Personnel would be informed of the sensitivity of cultural resources and the types of penalties that could be incurred if sites are damaged or destroyed. If any cultural items are discovered during the installation of the fence, activities would cease in the immediate area and the Alaska SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with the Fort Greely Environmental Procedures. Subsequent actions would follow the guidance provided. Large mammals, primarily moose, would be herded from the fenced area before enclosing the fences to ensure their safety, as well as that of personnel, and the safety of the mission.

The security fences may be constructed in series or all at one time, depending on funding and additional security requirements. The final designs and layout of the fences have not yet been completed. Because of this, some slight changes to the final requirements and site layout are possible, including the addition of gates if required. Changes of this nature, however, are unlikely to result in meaningful differences in potential environmental impacts. Final plans would be reviewed and compared to this supplemental EA before issuing a notice to proceed with construction work, to ensure no additional potential for environmental effects has been introduced. As part of the GMD VOC EA, plans were analyzed for security fencing around the GBI site. This fence was installed during the summer of 2002.

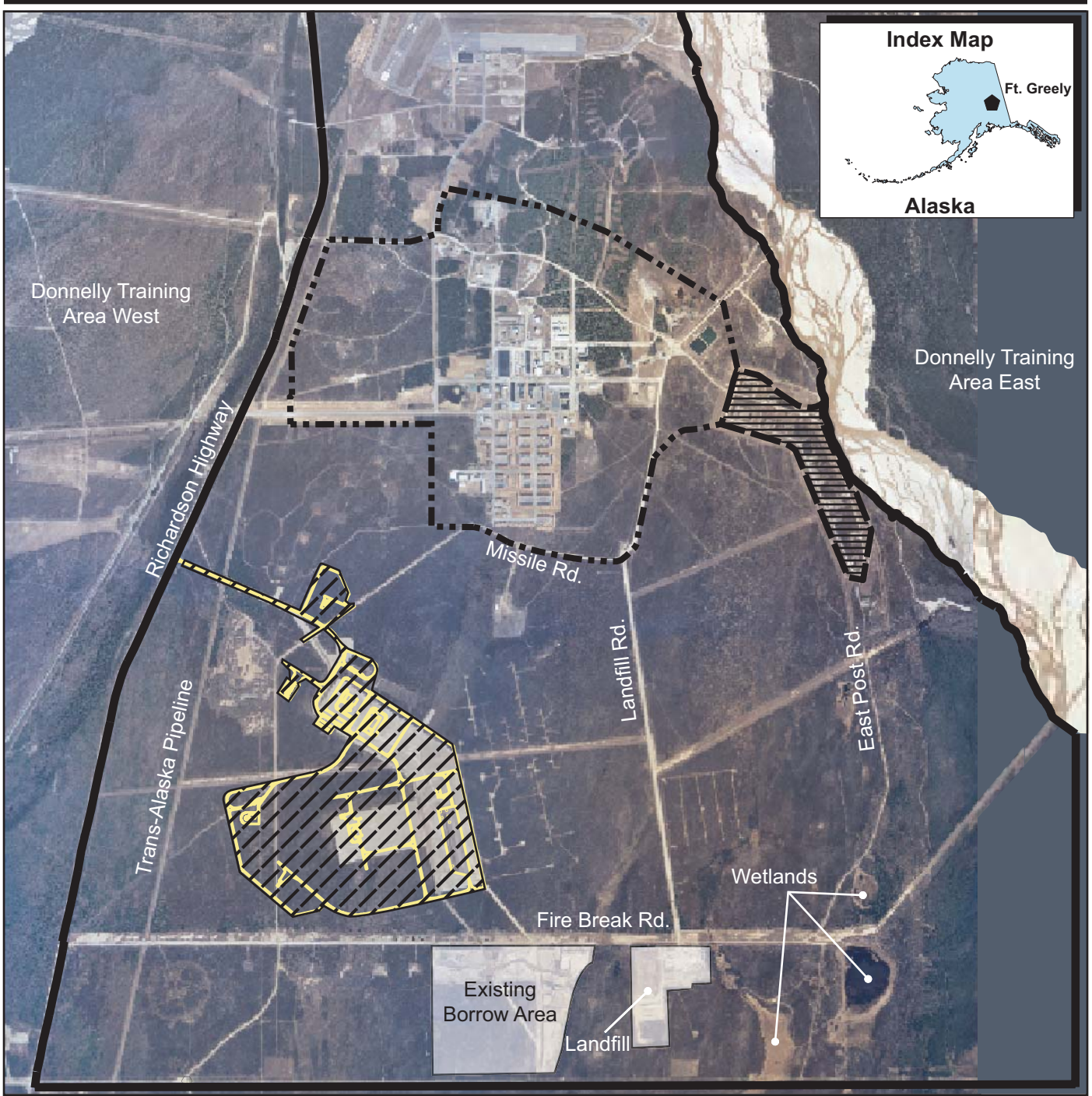
2.1.1.1 Cantonment Area Fence

The first fence proposed for construction would be around the cantonment area as shown in figure 2-2. This would provide protection to the majority of the installation's facilities and personnel. The total area enclosed by this fence would be 318 hectares (787 acres). The cantonment area perimeter requiring fencing is well defined. Although minor changes may be required during design, no other alternative alignments are being considered. If the proposed alignment is not implemented, the No-action Alternative would be selected.





For those areas within the pipeline easement that need to be cleared to meet the 3.7-meter (12-foot) clear zone outside the fence, a Right-of-Way User Guideline would be obtained from Alyeska Pipeline Service Company. The Right-of-Way User Guideline would describe the activities allowed within the pipeline easement.

2.1.1.2 Southern Boundary Fence

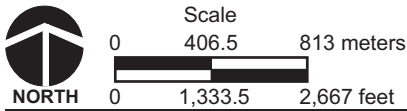
This fence would involve additional proposed fencing alignments around the southern portion of Fort Greely and would provide additional security around the GBI VOC test site described in the GMD VOC EA. The preferred alignment and four alternative alignments for this fence are described in the following paragraphs.



EXPLANATION

- 
 Cantonment Area Security Fencing Length: 7,327 meters (24,040 feet)
 Area Within Fence: 318 hectares (787 acres)
- 
 Existing Fenced Area
- 
 Installation Boundary
- 
 GBI VOC Test Site

Proposed Cantonment Area Security Fencing



Fort Greely, Alaska

Figure 2-2

Preferred Alignment

This alternative, shown in figure 2-3, would begin at the intersection of Missile Road and Landfill Road. The fence would proceed south along the west side of Landfill Road until the intersection with Fire Break Road. The proposed route would then go west along the north side of Fire Break Road to 3.7 meters (12 feet) of the easternmost edge of the easement for the Trans-Alaska Pipeline. The easement extends 13 meters (42 feet) east from the centerline of the pipeline. The fence would then go north paralleling the pipeline easement to connect to the installation's Main Gate. This alternative uses the least amount of fence and encloses the smallest area. The total area enclosed by this fence alternative would be 597 hectares (1,475 acres).

Alternative Alignment 1

As shown in figure 2-4, the eastern end of the proposed fence would connect to an existing fenced area and follow East Post Road to the southern boundary of the installation. The fence would then go due west along an existing trail, cross a small wetland, and continue to 3.7 meters (12 feet) of the easternmost edge of the easement for the Trans-Alaska Pipeline. The route would then parallel the east side of the pipeline easement north to connect to the installation's Main Gate. The total area enclosed by this fence alternative would be 1,186 hectares (2,930 acres).

Alternative Alignment 2

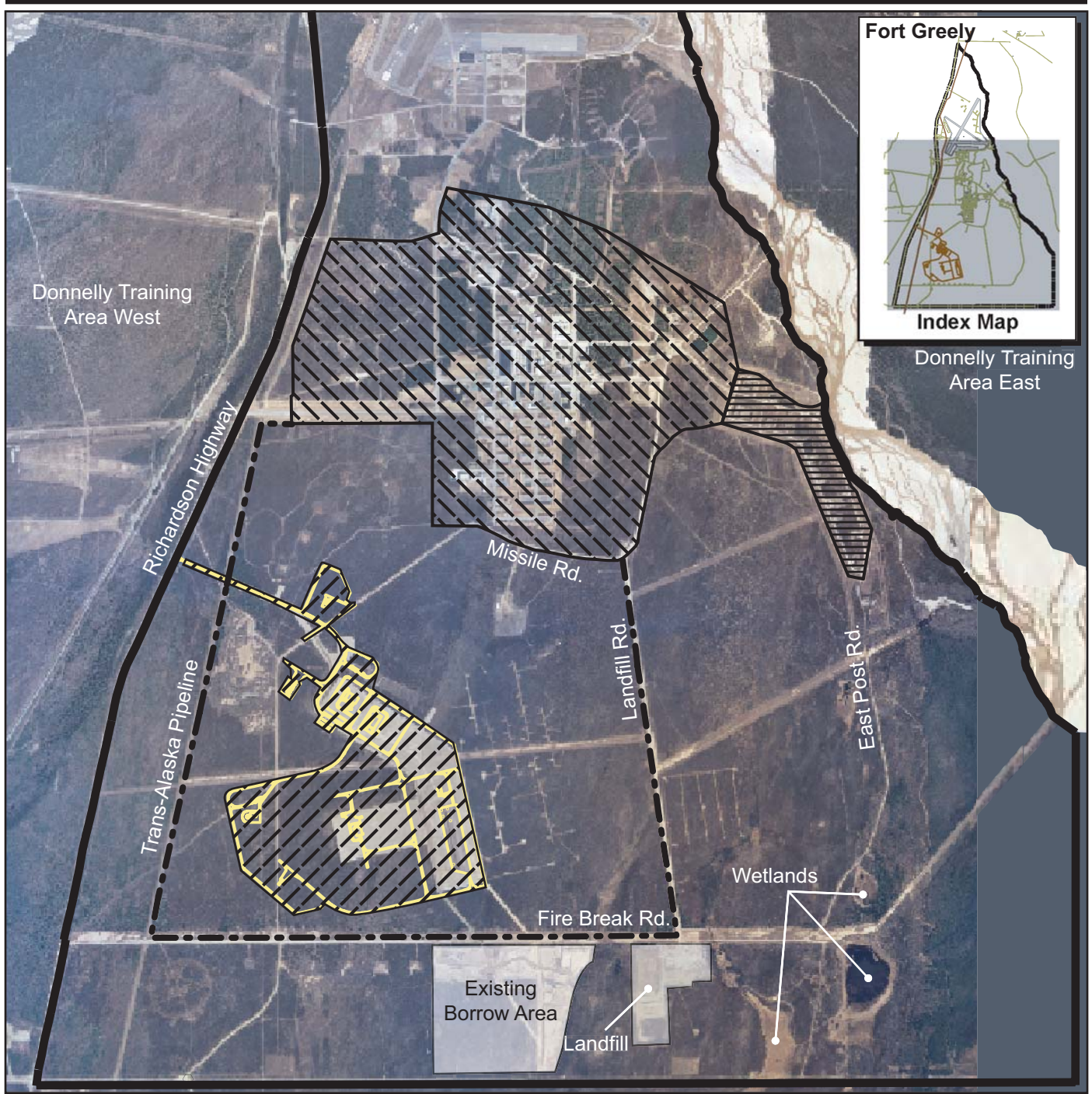
The proposed fence would connect to an existing fenced area (as in Alternative Alignment 1) and follow East Post Road to Fire Break Road, as depicted in figure 2-5. The fence would go west along the north side of Fire Break Road to 3.7 meters (12 feet) of the easternmost edge of the pipeline easement. The landfill would be outside the fenced controlled area. The route would then parallel the pipeline easement north to connect to the installation's Main Gate. The total area enclosed by this fence alternative would be 898 hectares (2,220 acres).

Alternative Alignment 3

In this alternative, shown in figure 2-6, the eastern end of the proposed fence would begin at the intersection of Missile Road and Landfill Road. It would follow Landfill Road south, past East Post Road and around the landfill, until it meets the southern boundary of the installation. The fence would then go due west along the existing trail (avoiding the small wetlands area) to 3.7 meters (12 feet) of the easternmost edge of the pipeline easement. It would then go north paralleling the pipeline easement to connect to the installation's Main Gate. The total area enclosed by this fence alternative would be 842 hectares (2,081 acres).

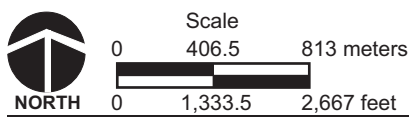
Alternative Alignment 4

Figure 2-7 depicts the eastern end of the proposed fence alternative route that begins at the intersection of Missile Road and Landfill Road (as does Alternative Alignment 3). The fence would follow Landfill Road south, cross East Post Road, and encompass the landfill area. It would then go west along the south side of Fire Break Road to 3.7 meters (12 feet) of the easternmost edge of the pipeline easement. It would then go north paralleling the pipeline easement to connect to the installation's Main Gate. The total area enclosed by this fence alternative would be 633 hectares (1,565 acres).



EXPLANATION

- Southern Boundary Fence Length Alternative 5: 7,958 meters (26,110 feet)
Area Within Fence: 597 hectares (1,475 acres)
- Installation Boundary
- GBI VOC Test Site
- Existing Fenced Area
- Cantonment Area

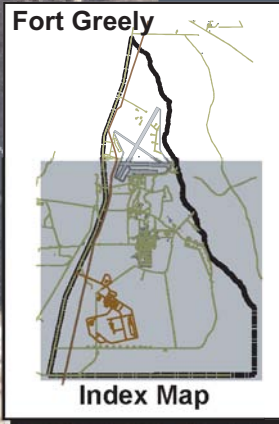
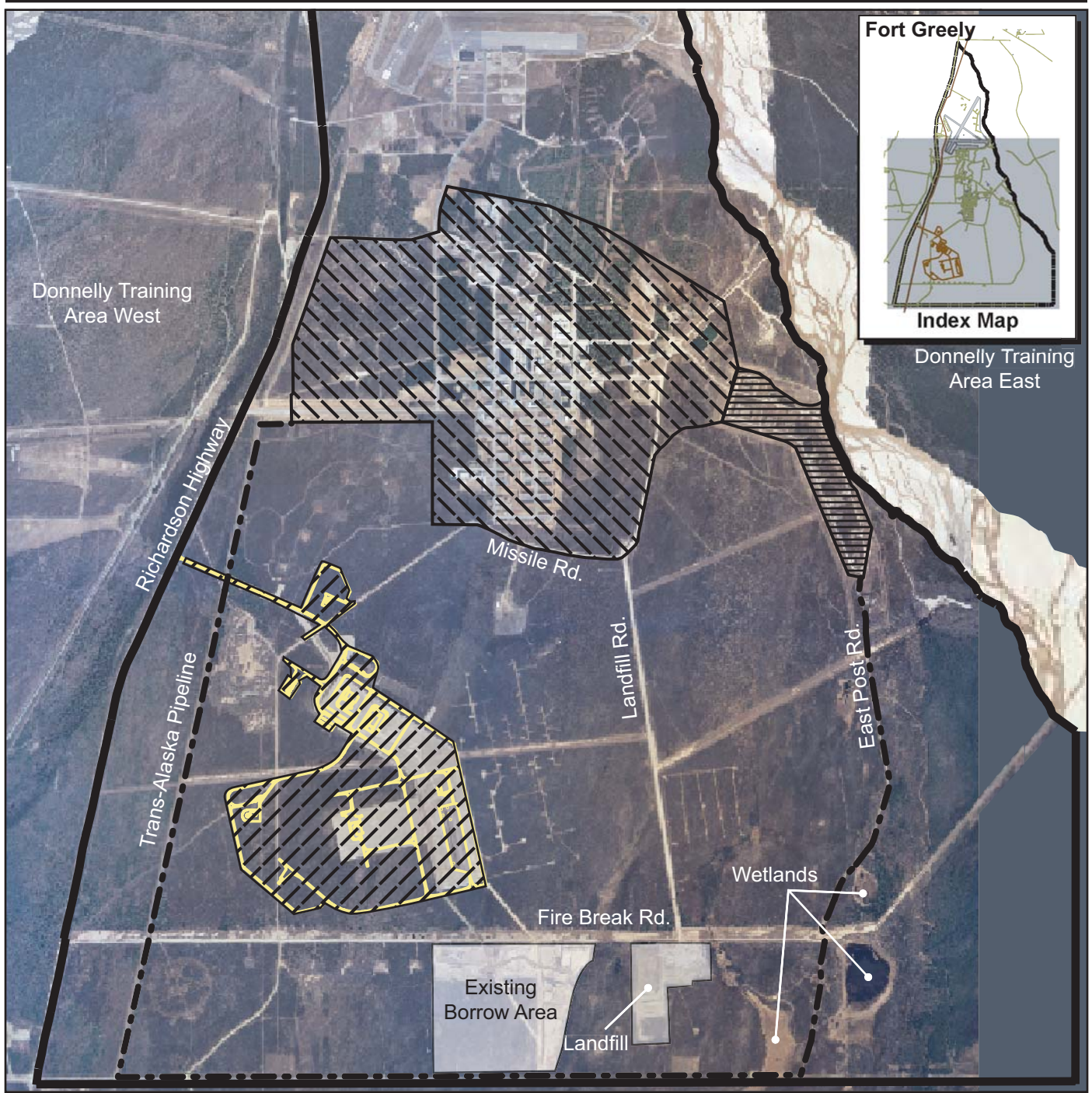


Proposed Southern Boundary Fence Preferred Alignment






Fort Greely, Alaska

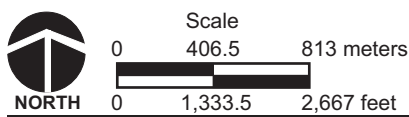
Figure 2-3

11-13-02 Fence Alt 5



EXPLANATION

-  Southern Boundary Fence Length Alternative 1: 10,364 meters (34,003 feet)
Area Within Fence: 1,186 hectares (2,930 acres)
-  Installation Boundary
-  GBI VOC Test Site
-  Existing Fenced Area
-  Cantonment Area

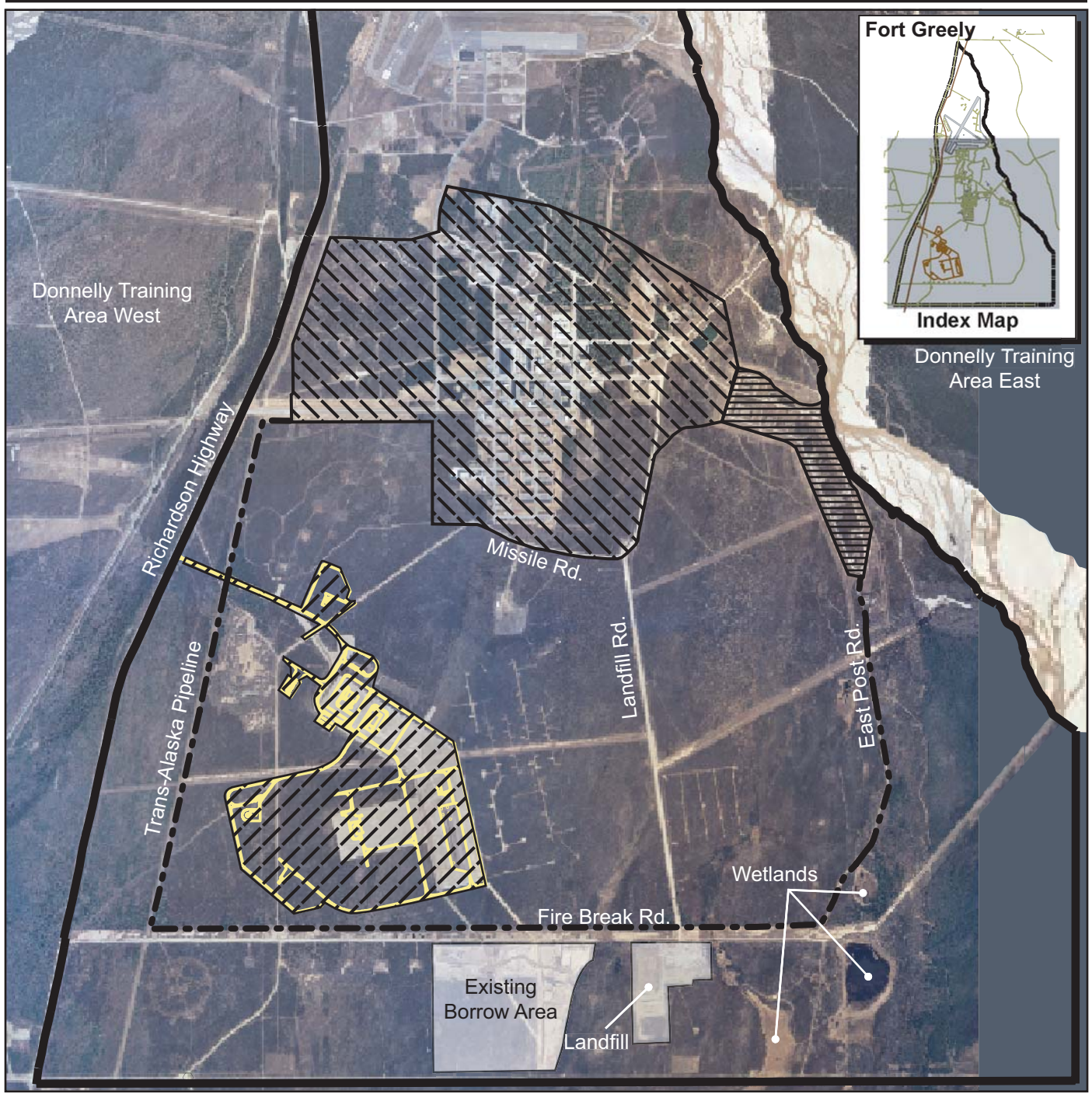


**Proposed Southern
Boundary Fence
Alternative
Alignment 1**






Fort Greely, Alaska

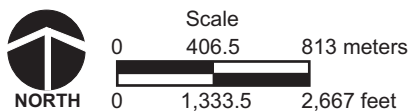
Figure 2-4

11-13-02 Fence Alt 1



EXPLANATION

-  Southern Boundary Fence Length Alternative 2: 8,708 meters (28,569 feet)
Area Within Fence: 898 hectares (2,220 acres)
-  Installation Boundary
-  GBI VOC Test Area
-  Existing Fenced Area
-  Cantonment Area

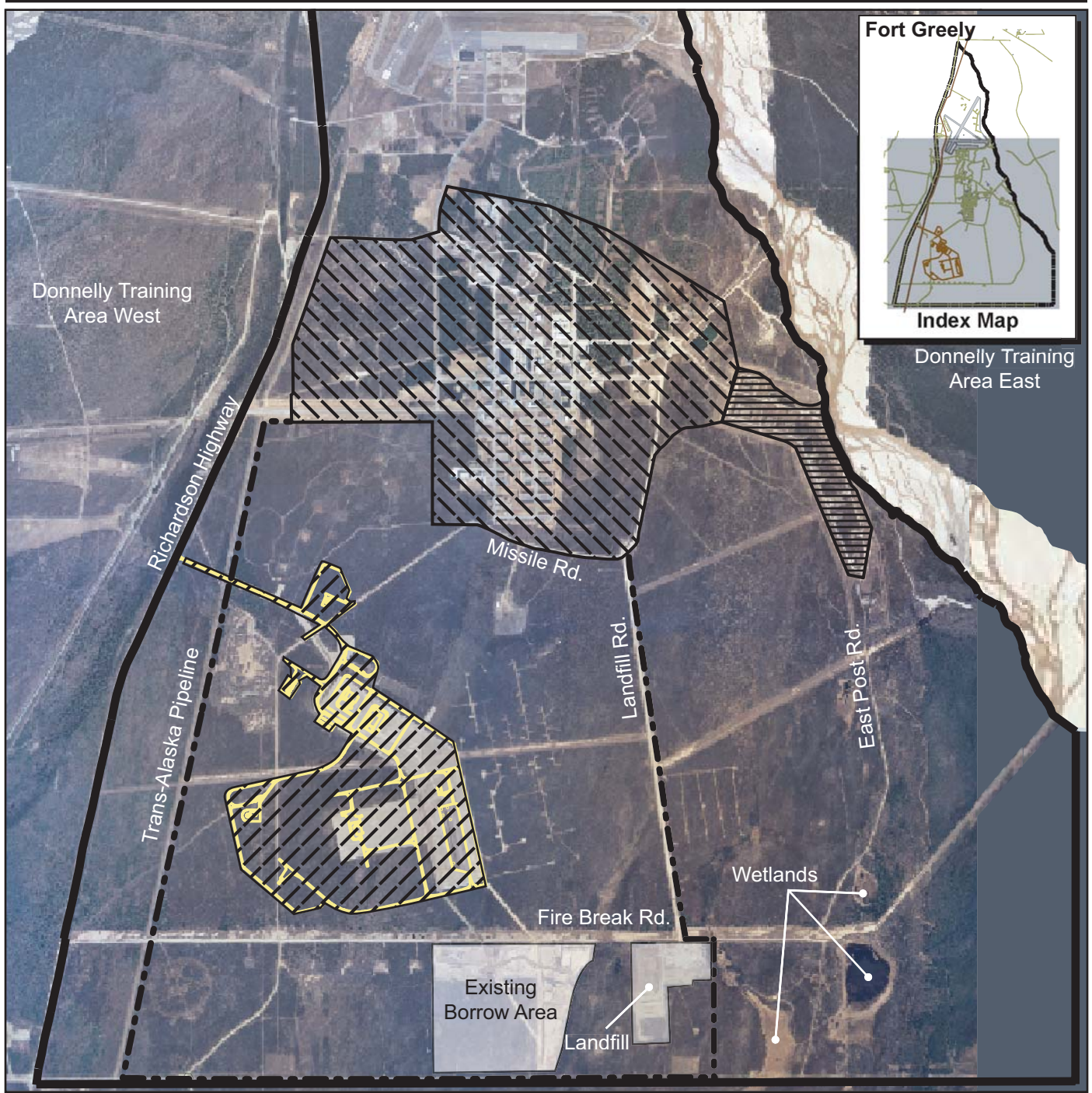


11-13-02 Fence Alt 2






**Proposed Southern
Boundary Fence
Alternative
Alignment 2**

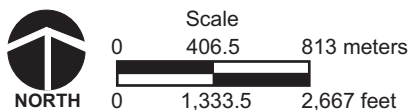
Fort Greely, Alaska

Figure 2-5



EXPLANATION

-  Southern Boundary Fence Length Alternative 3: 10,026 meters (32,895 feet)
Area Within Fence: 842 hectares (2,081 acres)
-  Installation Boundary
-  GBI VOC Test Site
-  Existing Fenced Area
-  Cantonment Area

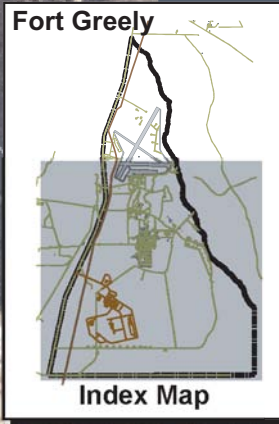
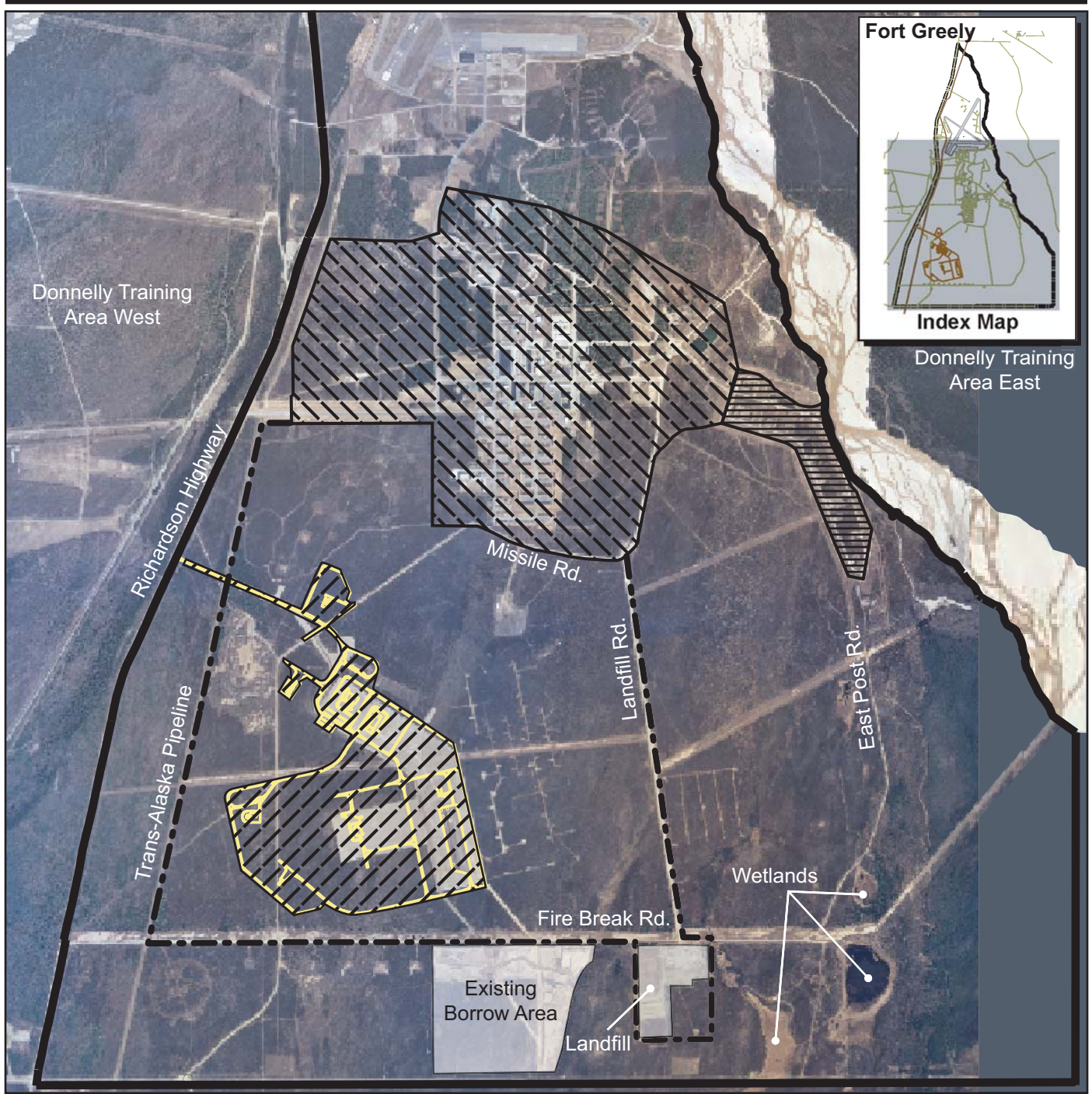


11-13-02 Fence Alt 3






**Proposed Southern
Boundary Fence
Alternative
Alignment 3**

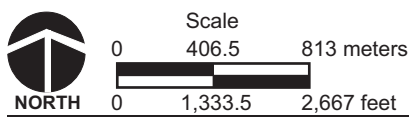
Fort Greely, Alaska

Figure 2-6



EXPLANATION

-  Southern Boundary Fence Length Alternative 4: 9,457 meters (31,026 feet)
Area Within Fence: 633 hectares (1,565 acres)
-  Installation Boundary
-  GBI VOC Test Site
-  Existing Fenced Area
-  Cantonment Area



Proposed Southern Boundary Fence Alternative Alignment 4

Fort Greely, Alaska

Figure 2-7

11-13-02 Fence Alt 4

For those areas where the pipeline easement would need to be utilized to meet the 3.7-meter (12-foot) clear zone outside the fence, a Right-of-Way User Guideline would be obtained from Alyeska Pipeline Service Company. The Right-of-Way User Guideline would describe the activities allowed within the pipeline easement.

2.1.1.3 Airfield Fence

The third fence would be the proposed construction of a fence around the airfield portion of the installation (figure 2-8). No portion of the fence would cross the pipeline easement. The total area enclosed by this fence would be approximately 510 hectares (1,260 acres). The fence would enclose this general area with the conceptual alignment shown. No other alternative alignments for the airfield fence are being considered. If this alignment is not implemented, the No-action Alternative would be selected. The proposed fence alignment would likely be modified slightly during design.

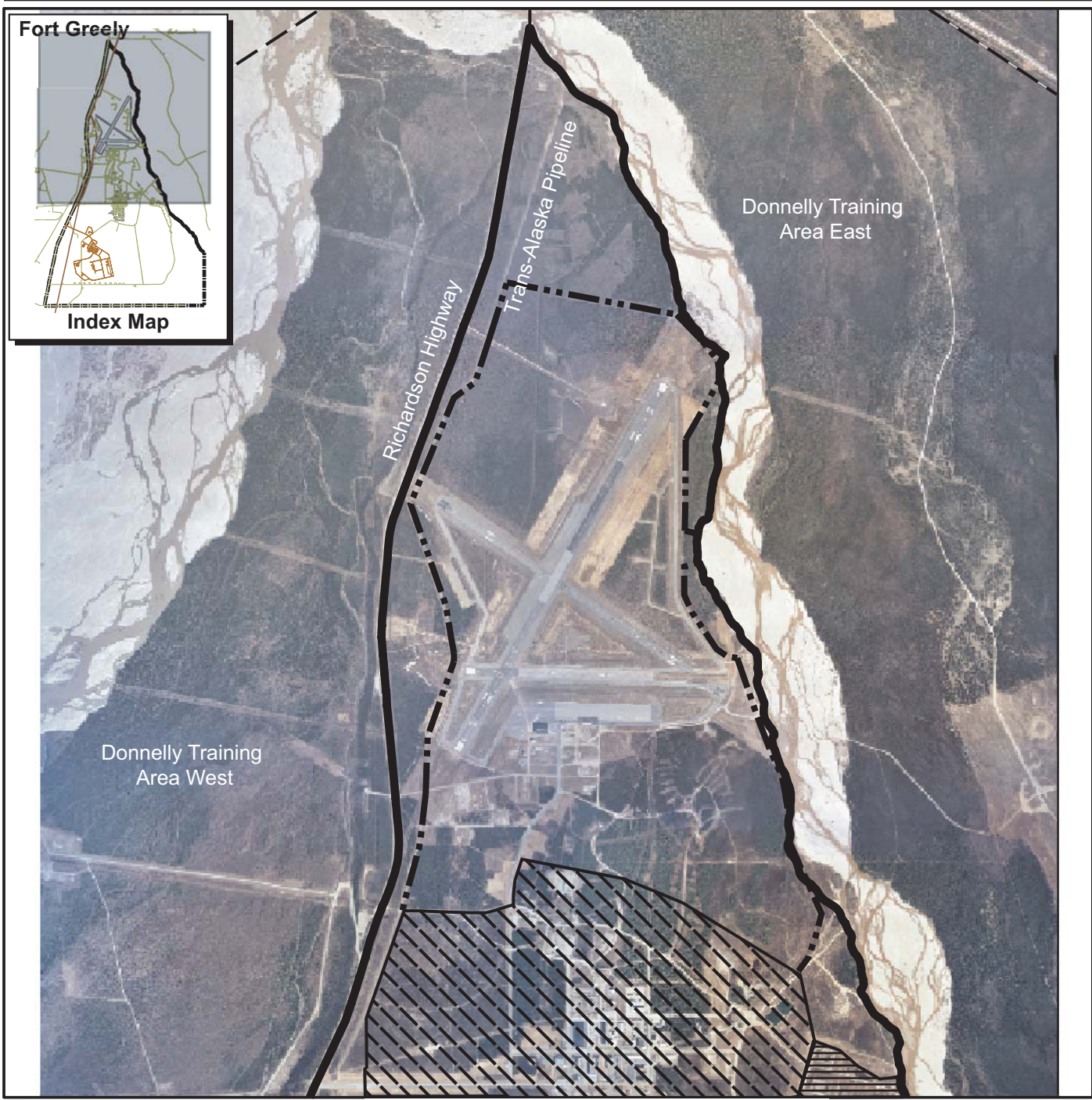
For those areas within the pipeline easement that need to be cleared to meet the 3.7-meter (12-foot) clear zone outside the fence, a Right-of-Way User Guideline would be obtained from Alyeska Pipeline Service Company. The Right-of-Way User Guideline would describe the activities allowed within the pipeline easement.

2.1.2 ALLEN ARMY AIRFIELD MODIFICATIONS AND AIR CONTROL

The utilization of airfields at other installations was evaluated in the GMD VOC EA; however, it has been determined that the safety and security risk to the interceptors would be high due to the long transportation distances over public highways. Therefore, the utilization of Allen Army Airfield is now being proposed. No other alternative sites to the runway modifications at Allen Army Airfield are being considered in this supplemental EA. If the proposed actions are not implemented, the VOC Supplemental EA No-action Alternative would be selected.

The area in the immediate vicinity of Fort Greely has a high density of small civilian aircraft that could present a safety risk to military aircraft. Improving air safety for continued military use of Allen Army Airfield would involve a phased approach that may include all or some of the following actions at Fort Greely:

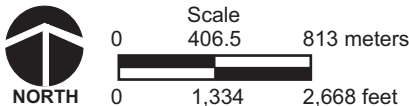
- Extension of the Allen Army Airfield south-north runway (18/36) and the addition of turnarounds and approach lighting at each end
- Improvements to the east-west runway (9/27) to upgrade the runway surface, add turnarounds to each end, and add lateral lighting systems
- Designation of a hotspot at the north end of the 18/36 runway and the northeast end of the northeast-southwest runway (6/24)
- Provisions for deicing activities at the turnarounds at each end of the 18/36 and 9/27 runways
- Modifications to activities at Allen Army Airfield to include adding Class D to the existing Class E controlled airspace, reactivation of the control tower or construction of a new control tower, and installation and use of an ASR-11 or similar type airport surveillance radar



EXPLANATION

- Airfield Security Fence Length: 8,552 meters (28,057 feet)
 Area Within Fence: 510 hectares (1,260 acres)
- Installation Boundary
- Donnelly Training Area Boundary
- Cantonment Area
- Existing Fenced Area

Proposed Airfield Security Fencing



Fort Greely, Alaska

Figure 2-8

Airfield Modifications

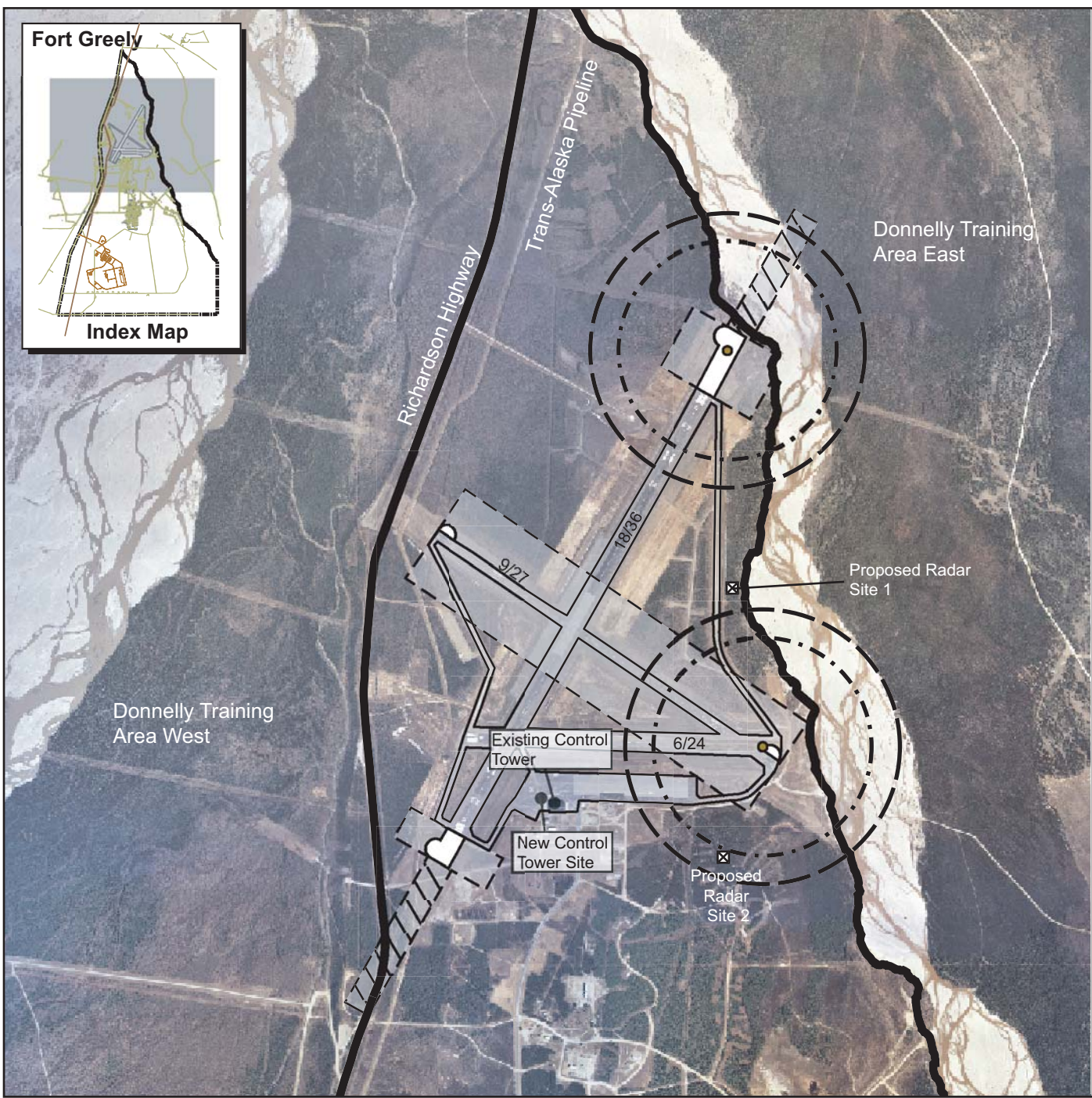
The proposed extension of runway 18/36 at Allen Army Airfield would add approximately 305 meters (1,000 feet) at the north end and approximately 152 meters (500 feet) at the southern end as shown in figure 2-9. Because the runway would also be used as a taxiway, a turnaround area would be added at each end of the runway extension. The additional area would be a semi-circle with an approximate radius of 46 meters (150 feet).

Approach lighting would be added at each end of the extended runway. The lighting would be extended 914 meters (3,000 feet) past the threshold or end of the existing runway on both the north and south ends. Various approach lighting systems could be used with varying number of lights and spacing between structures. Each of the light structures would be constructed to the same height as each other. The lateral areas to each side of the approach light structures would be cleared to a total width of approximately 120 meters (400 feet). Trees, if not totally removed, would be kept below the 50:1 slope requirement from the end of the runway out to the 914-meter (3,000-foot) distance needed for the approach lighting. On the north extension, the lights would need to cross Jarvis Creek a short distance into Donnelly Training Area East, which is under the control of USARAK. Approximately 1.9 hectares (4.7 acres) of clearing south of the runway would cross Richardson Highway into Donnelly Training Area West. For lights in or over the creek, construction of the approach light platforms and trenching for electrical cables would be conducted during the low-flow season. A permit from the U.S. Army Corps of Engineers issued under section 404 of the Clean Water Act would be required. In addition, a Fish Habitat Permit from the Alaska Department of Fish and Game would be required to ensure impacts to stream flows are properly considered.

The area on Donnelly Training Area would require an agreement with USARAK to access, clear, construct, and operate the approach lights. Approximately 1.7 hectares (4.2 acres) would be cleared on Donnelly East and 1.9 hectares (4.7 acres) on Donnelly West. The conversion of this area to a cleared state would not prevent the area from being used for troop training; however, the type of training may be altered to prevent damage to the approach lights.

Hotspot areas would be designated at the north end of the 18/36 runway and the east end of the 9/27 runway for loading and unloading of interceptors. The hotspots require minimum safety setbacks of 434 meters (1,425 feet) for one interceptor and 547 meters (1,795 feet) assuming two interceptors are being loaded/unloaded. Deicing areas would be established at the turnarounds at each end of the 18/36 and 9/27 runways to ensure aircraft safety during all seasons. These areas would be sloped to capture deicing fluid into a sump that would be pumped out after each deicing event. No deicing fluid would be allowed to run off into the storm water system or reach natural ground or waterways. Bio-friendly deicing fluids would be utilized to minimize the risk of contamination to the environment from this activity.

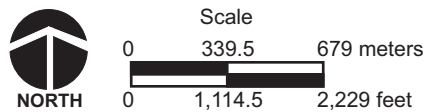
The proposed improvements to runway 9/27 would include repairing and resurfacing the runway surface. Additionally, lateral clearing of approximately 244 meters (800 feet) on each side of the runway would be performed for safety purposes. The runway would not be extended; however, turnarounds would be added to each end of the runway because the runway would also be used as a taxiway. A standard lateral lighting system would be installed, as well as special lighting to be used by the Air National Guard. These improvements would allow aircraft to safely utilize the airfield when the wind direction prohibits the use of the 18/36 runway, as well as allow the Air National Guard to utilize the runway for assault training.



EXPLANATION

- Installation Boundary
- Runway Extensions / Turnarounds
- Lateral Clearing
- Approach Lighting
- Hot Spots
- Proposed Radar Sites
- One Interceptor Safety Buffer; 434 meters (1,425 feet)
- Two Interceptors Safety Buffer; 547 meters (1,795 feet)

Proposed Airfield Modifications



Fort Greely, Alaska

Figure 2-9

Construction fill material would be obtained from the borrow area at the south end of Fort Greely, located west of the landfill. If during the course of construction cultural items are discovered, activities would cease in the immediate area and the Alaska SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with Fort Greely procedures. Subsequent actions would follow the guidance provided.

Air Control

To increase safety for military aircraft approaching Fort Greely, Class D controlled airspace would be added to the existing Class E airspace at Allen Army Airfield. Class D airspace generally extends from the surface to 762 meters (2,500 feet) above ground level for a radius of approximately 7.4 kilometers (4 nautical miles) around the airfield. Class D airspace requires communication between arriving aircraft and the controller before entry, and thereafter those communications are maintained while in the Class D airspace. The controllers would be located at the reactivated Allen Army Airfield Control Tower or a new control tower constructed adjacent to the existing tower.

As an additional safety measure, an ASR-11 or similar type airport surveillance radar would be installed on Fort Greely, as indicated on figure 2-9. The radar would be installed on a tower to place the radar line-of-sight above the trees and to provide coverage below 762 meters (2,500 feet) altitude. An area of approximately 0.4 hectare (1 acre) would be cleared for the radar and associated fencing. Two locations are being considered (figure 2-9). Site 1 is located on a knoll directly east of the center of the airfield, adjacent to Jarvis Creek. Site 2 is located southeast of the center of the runway on a hilltop near the ski area. If during construction cultural items are discovered, activities would stop and the Alaskan SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with Fort Greely procedures. Subsequent actions would follow the guidance provided. As a precautionary measure, signs would be posted at the perimeter of the radar facility advising personnel and the public against approaching the radar facility during operation. Trenching for power and communication lines may be required from the radar site to the modified control tower in Building 100 or a new control tower.

Visual and Instrument Flight Rules would be necessary at the Fort Greely airfield to support GBI requirements and would require an Air Traffic Control presence. Reactivation of the Allen Army Airfield control tower equipment and manpower would be key to controlling Fort Greely airspace. Estimated manpower for the tower would be 14 personnel. The existing tower would be modified or a new tower would be constructed adjacent to the existing control tower (figure 2-9).

No other alternatives to air control are being considered. If Class D controlled airspace is not implemented, then the No-action Alternative would be selected.

2.2 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR FURTHER ANALYSIS

Alternative to Installation Fence at Fort Greely

A potential alternative to construction of a fence at Fort Greely would be the use of additional personnel to provide force protection and security for the installation. This alternative would

require a larger workforce but would not provide the level of force protection and security required.

Boundary Fence at Fort Greely

A potential alternative to the three separate fences would be fencing completely around the installation's perimeter (figure 2-1). This alternative is not considered feasible because the additional force protection and security provided for such a large area are not required, and therefore the additional costs and associated environmental impacts are not warranted.

2.3 NO-ACTION ALTERNATIVE

Under the No-action Alternative, security fence construction, runway 18/36 modifications, runway 9/27 improvements, hotspot designations, deicing provisions, controlled airspace upgrade, control tower reactivation or construction, and radar construction would not be conducted. Without the fence, Fort Greely personnel and facilities would be at a security risk. The airfield and air control activities would not be accomplished, providing less than optimal safety for aircraft activities. The controlled airspace, reactivation of the control tower, and installation of a radar would not be implemented and Class E airspace would remain in effect for the Fort Greely area.

3.0 AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

This section describes the environmental characteristics that may be affected by the Proposed Action. The information provided serves as a baseline from which to identify and evaluate environmental changes resulting from activities proposed at Fort Greely. To provide a baseline point of reference for understanding any potential impacts, the affected environment is briefly described; any components of concern are described in greater detail.

Available reference materials, including EAs, EISs, and installation master plans, were acquired to assist in the description of the affected environment, including the original GMD VOC EA and the NMD Deployment EIS. To fill data gaps (questions that could not be answered from the literature) and to verify and update available information, installation and facility personnel; federal, state, and local regulatory agencies; and private individuals were contacted.

Environmental Resources

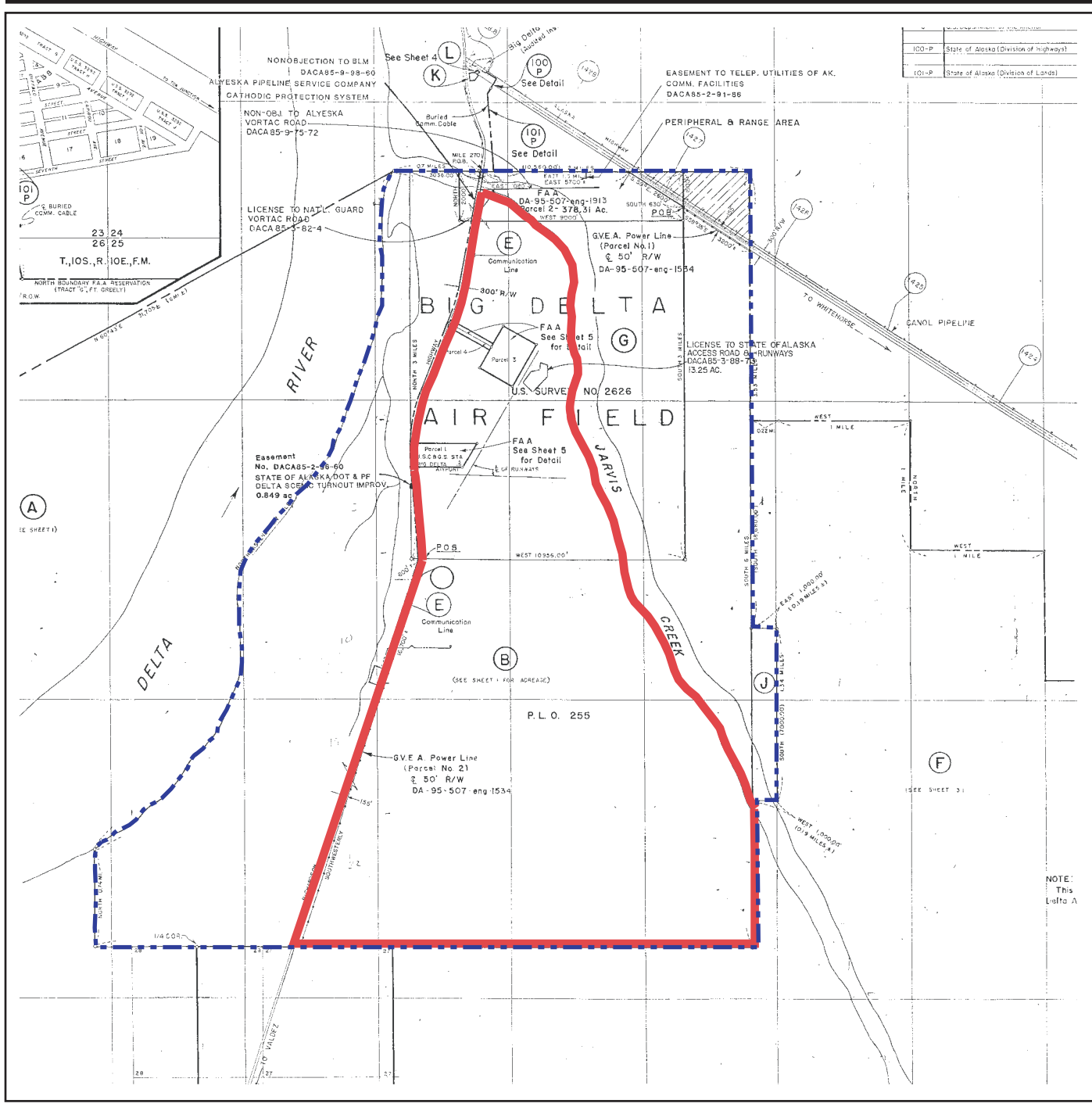
Thirteen broad areas of environmental consideration were considered to provide a context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the severity of potential impacts. These areas included air quality, airspace, biological resources, cultural resources, geology and soils, hazardous materials and waste, health and safety, infrastructure, land use, noise, socioeconomics, water resources, and environmental justice. The areas were analyzed as applicable for each proposed activity.

The following sections summarize applicable baseline data from the GMD VOC EA and the NMD Deployment EIS. Information from any other source is specifically referenced.

3.1 FORT GREELY

Fort Greely is located approximately 172 kilometers (107 miles) southeast of Fairbanks and just south of the community of Delta Junction in an unincorporated borough. The current Fort Greely is approximately 2,914 hectares (7,200 acres) (figure 3-1). The remainder of the former Fort Greely was transferred to Fort Wainwright, Alaska and remains under USARAK control. MDA has assumed all costs associated with missile defense activities on Fort Greely. Effective 1 October 2002, USASMDC became the Senior Mission Command for Fort Greely, and is now responsible for providing the necessary support to its tenants, including the GBI VOC test bed.

Fort Greely originally contained 267,519 hectares (661,051 acres), most of which was withdrawn from the Bureau of Land Management. It consisted of the Main Post, two large training areas—Fort Greely West Training Area and Fort Greely East Training Area—and three outlying sites in the area.



100-P	State of Alaska (Division of Highways)
101-P	State of Alaska (Division of Lands)

EXPLANATION

- Fort Greely Installation Boundary
- - - Public Land Offering 255 area

Land Ownership

Fort Greely, Alaska

Figure 3-1



Not to Scale

11-13-02 Land Owner

Approximately 722 hectares (1,785 acres) of Fort Greely were determined to be surplus following its realignment. This area contained most of the buildings in the cantonment area and the airfield. (Moniz, 2001) The U.S. Army amended the previously approved Determination of Surplus as a result of the realignment of Fort Greely on 8 November 2001. The actual property that is still Fort Greely is a portion of Public Land Offering 255 that has been permanently removed from the control of the Bureau of Land Management.

3.1.1 AIR QUALITY

The significance of a pollutant concentration is determined by comparison with National Ambient Air Quality Standards (NAAQS) and State Ambient Air Quality Standards that establish limits on the maximum allowable concentrations of various pollutants to protect public health and welfare. Alaska has established State Ambient Air Quality Standards. Emissions of air pollutants from operations in Alaska are limited to the more restrictive standard (federal or state).

Region of Influence

Identifying the region of influence (ROI) for air quality assessment requires knowledge of the pollutant types, source emissions rates and release parameters, proximity relationships of project emission sources to other emission sources, and local and regional meteorological conditions. For air pollutants at Fort Greely, the ROI is generally limited to an area extending no more than a few tens of miles downwind from the source. Wind speeds average approximately 18 kilometers (11 miles) per hour and are generally southerly along the Delta River in the summer, which is the main construction season.

Affected Environment

Regional Air Quality

As discussed in the GMD VOC EA, air quality in Alaska is generally very good. Principal sources of air pollution in the Fort Greely area are from limited vehicle traffic and fuels burned for heat and/or power. The Fort Greely area is in attainment for all NAAQS and state standards.

Pollutants from mobile sources, such as automobiles and construction equipment, include hydrocarbons, carbon monoxide, nitrogen oxides, and particulate emissions. The primary pollutant of concern from mobile sources in Alaska is carbon monoxide. As such, this is the only pollutant from mobile sources analyzed in the NMD Deployment EIS, the GMD VOC EA, and this study. Up to 80 percent of carbon monoxide emissions contributing to exceedances of the NAAQS in Fairbanks have been attributed to mobile sources. Cold starts during moderately cold weather, prolonged idling periods, and low-level temperature inversions all contribute to pronounced air quality impacts from motor vehicle emissions in cold climates.

Existing Emissions Sources

Fort Greely has major emissions sources from boilers, generators, storage tanks, and prescribed burning/firefighter training. An application for a Title V Air Permit has been submitted to the Alaska Department of Environmental Conservation (ADEC) (Spiers, 2001a). This application will be revised by USASMDC in early 2003. Fort Greely is not a major source of hazardous air pollutants.

In order to meet Alaska Prevention of Significant Deterioration requirements, Fort Greely must manage activities to control emissions of particulate matter with a diameter of less than 10 microns (PM-10). Prior to the Base Realignment, these emissions on Fort Greely totaled 320 metric tons (353 tons) per year. The current synthetic minor source construction permit requires Fort Greely to limit PM-10 emissions and all other criteria pollutants to 227 metric tons (250 tons) per year each. (Alaska Department of Environmental Conservation, 2002) Construction activities anticipated for the Proposed Action, in addition to the activities previously analyzed in the GMD VOC EA, would fall within this parameter.

Based on the above calculations, ADEC issued a synthetic minor source construction permit to USASMDC to construct the GMD Test Bed at Fort Greely in August 2002. The permit requires USASMDC to limit emissions of oxides of nitrogen, carbon monoxide, particulate matter, sulfur dioxide, and volatile organic compounds. Actions specified in the permit include protecting ambient air quality, meeting applicable regulatory requirements, requiring source testing and monitoring, conducting visible emissions and particulate matter monitoring, and reporting the results to ADEC.

3.1.2 AIRSPACE

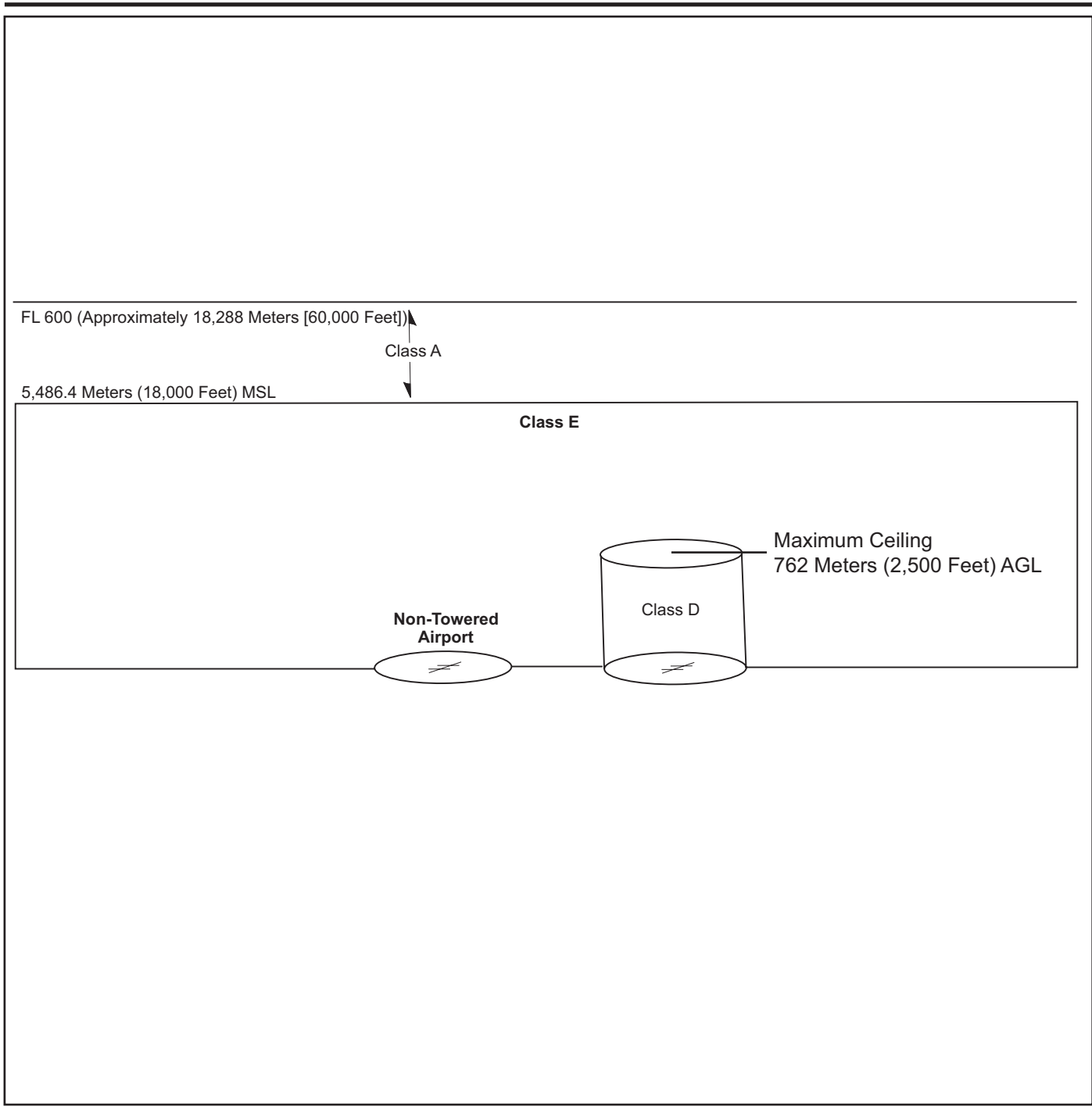
Airspace, or that space which overlies a nation and comes under its jurisdiction, is generally viewed as being unlimited. However, it is a finite resource that can be defined vertically and horizontally, as well as temporally, when describing its use for aviation purposes. The scheduling, or time dimension, is a very important factor in airspace management and air traffic control.

Under Public Law 85-725, the FAA is charged with the safe and efficient use of the nation's airspace and has established certain criteria and limits to its use. The method used to provide this service is the National Airspace System. This system is "...a common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures; technical information; and manpower and material" (Federal Aviation Administration, 2002). Figure 3-2 depicts the various classes of controlled airspace.

Region of Influence

The ROI is defined as the area that could be affected by the Proposed Action. For the purposes of this EA, it is that airspace within approximately 37 kilometers (20 nautical miles) of Allen Army Airfield at Fort Greely. A 32-kilometer (20-mile) radius of the airfield was chosen as the ROI since that would provide adequate airspace for civilian pilots to either avoid the airspace or contact the control tower prior to entering the airspace over Allen Army Airfield at Fort Greely.

The potentially affected airspace is described below in terms of its principal attributes, namely: controlled and uncontrolled airspace; enroute airways and jet routes, airports and airfields, air navigation and communication facilities, and air traffic control. The air traffic in the ROI is managed by the Anchorage Air Route Traffic Control Center.



EXPLANATION

- AGL = Above Ground Level
- FL = Flight Level
- MSL = Above Mean Sea Level

Classes of Non-Military Airspace

Not to Scale

Figure 3-2

Affected Environment

Controlled and Uncontrolled Airspace

Historically, Allen Army Airfield has been used by the military and to a lesser extent by civilian operators with prior military authorization. The primary users of the Airfield are U.S. Army helicopters and small, fixed-wing aircraft.

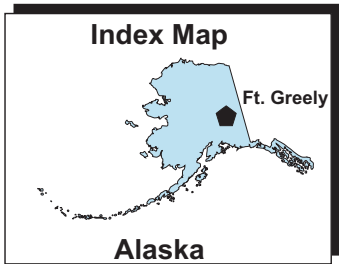
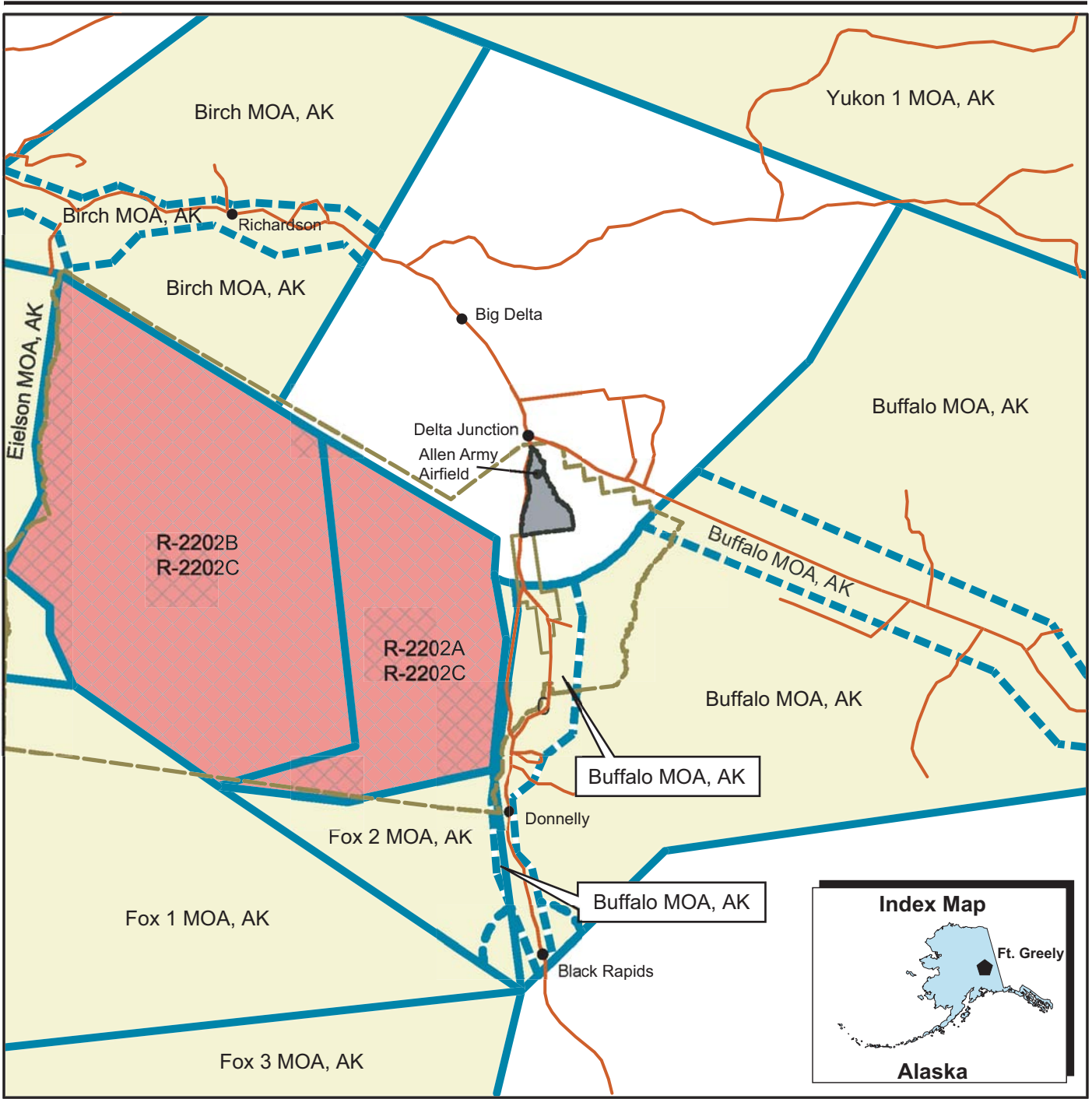
The FAA is responsible for air traffic control within U.S. airspace. There are two basic types of aircraft flight recognized by the FAA's air traffic control system: those operating under Visual Flight Rules (VFR), which depend primarily on the "see and be seen" principle of separation, and those operating under Instrument Flight Rules (IFR), which depend on separation by air traffic controllers.

Above Allen Army Airfield is Class A controlled airspace, extending upward from 5,486 meters (18,000 feet) above mean sea level to flight level (FL) 600 (60,000 feet above mean sea level), where only IFR flights are permitted in accordance with 14 Code of Federal Regulations (CFR) 91, *General Operating and Flight Rules*. In the vicinity of the Airfield, there is no Class B, C, or D controlled airspace, which are the types of airspace around airports with air traffic control towers. However, Class E airspace is currently at Allen Army Airfield. Class E airspace in general is defined in FAA's 14 CFR 71.71, "Class E Airspace," and defined by specific area/site in FAA Order 7400.9J.









Class E airspace surrounds Allen Army Airfield, extending from 213 meters (700 feet) to 5,486 meters (18,000 feet) above the surface. Class E airspace also extends out to protect the instrument approach corridors. Class E airspace contains the low-altitude federal airways that connect Very High Frequency Omni-directional Range (VOR) navigational aids and provide a system of "highways" for air transportation. The network of VORs across the country is supplemented by lower-powered non-directional beacons, which transmit low frequency radio signals on which a pilot can "home" or fly directly toward. The Delta Junction non-directional beacons are located approximately 1.8 kilometers (1 nautical mile) northeast of Allen Army Airfield.

Beyond the Class E airspace immediately surrounding Allen Army Airfield to the north is Class G (uncontrolled) airspace (figure 3-3). The Birch and Buffalo Military Operations Areas are located northwest and southeast of the airfield. A Military Operations Area is an airspace assignment established to separate certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. Southwest of the airfield is a special use airspace (R 2202) in which flight is restricted (figure 3-3).

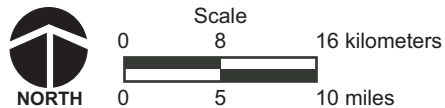
The Alaska Supplement (U.S. Government Flight Information Publication) states that within a 64.8-kilometer (35-nautical-mile) radius of the airfield are three controlled firing ranges, seven drop zones, and one restricted area (U.S. Department of Transportation, 2002). Pilots are warned to avoid overflying the sensitive test ammunition storage area located 2.4 kilometers (1.5 miles) southeast of the Airfield and to avoid overflight of the main post area. Circling south of runway 6/24 is not authorized, and right hand traffic patterns are used for runways 18 and 24.



EXPLANATION

- | | | | |
|---|-----------------------------------|---|---------------------------------|
|  | Fort Greely Installation Boundary |  | Towns |
|  | Military Operating Area (MOA) |  | Highway VFR Corridors |
|  | Restricted Air Space |  | Roads |
|  | Unrestricted Air Space |  | Donnelly Training Area Boundary |

Airspace



Fort Greely, Alaska

Figure 3-3

Allen Army Airfield does not currently have radar. The only radar in the area supports Donnelly Range. It is primarily used for tracking activities over the Donnelly Range within its Military Operations Areas and restricted airspaces, but does not have the range to cover out to Allen Army Airfield (Sharp, 2002). Fort Wainwright and Anchorage radars are not able to detect traffic below 1,524 meters (5,000 feet) at Allen Army Airfield.

Military Training Routes

The U.S. Air Force is a major user of airspace in the vicinity of Fort Wainwright and Fort Greely. DoD has identified the Stuart Creek and Oklahoma/Delta Creek Impact Areas as the primary sites for military air-to-ground training. Restricted Area R2205 over the eastern portion of the Fort Wainwright Yukon Training Area is the primary air-to-ground weapons range for the U.S. Air Force in Alaska. With the recent addition of Military Operations Areas around R2202, tactical operations are conducted in and around Fort Greely (figure 3-3).

Airports/Airfields

There are no other military airports/airfields in the airspace ROI. Delta Junction Airport is the nearest civilian airfield.

Air Navigation and Communications Facilities

The Big Delta VOR with Tactical Air Navigation (VORTAC) is located on the northwest side of Allen Army Airfield. A VOR provides line-of-sight magnetic compass bearings.

Airport radio communications are at very high frequency (VHF). A common traffic advisory frequency is 122.9, with weather advisory service on 135.65. Operations frequency is 134.45, and on ultra high frequency at 241.0. Civilian aircraft and FAA facilities normally use VHF radios for communication. Allen Army Airfield currently does not have an assigned VHF due to its inactive status.

Air Traffic Control

The airspace ROI lies within the Anchorage Oceanic Control Area/Flight Information Region (CTA/FIR) and within the U.S. Alaskan Air Defense Identification Zone. In the Class A (positive control areas) airspace all operations are conducted under IFR procedures and are subject to air traffic control clearances and instructions. Aircraft separation and safety advisories are provided by air traffic control, the Anchorage Air Route Traffic Control Center. In Class E airspace (general controlled airspace) operations may be either under IFR or VFR: separation service is provided to aircraft operating under IFR only, and to the extent practicable, traffic advisories to aircraft operating under VFR, by the Anchorage Air Route Traffic Control Centers. For Class G airspace (uncontrolled airspace), operations may be either under instrument or visual flight rules, but no air traffic control service is available. There is no airport surveillance radar operating at Allen Army Airfield.

The majority of the civilian north and south traffic is limited to two existing flight corridors (Richardson Highway VFR corridor and the Alaskan Highway VFR corridor) that overlie Richardson Highway and Alaskan Highway, which generally parallel Fort Greely on the west and east, respectively, and thus pass very near to Allen Army Airfield. They also cross the established approach and departure corridors of all runways on the west side of the airfield.

3.1.3 BIOLOGICAL RESOURCES

Native or naturalized vegetation, wildlife, and the habitats in which they occur are collectively referred to as biological resources. Existing information on plant and animal species and habitat types in the vicinity of the proposed sites was reviewed, with special emphasis on the presence of any species listed as threatened or endangered by federal or state agencies, to assess their sensitivity to the effects of the Proposed Action. For the purpose of discussion, biological resources have been divided into the areas of vegetation, wildlife, threatened and endangered species, and environmentally sensitive habitat.

Region of Influence

The ROI for biological resources includes the area within and adjacent to the sites on Fort Greely that could potentially be affected by the proposed activities.

Affected Environment

Vegetation

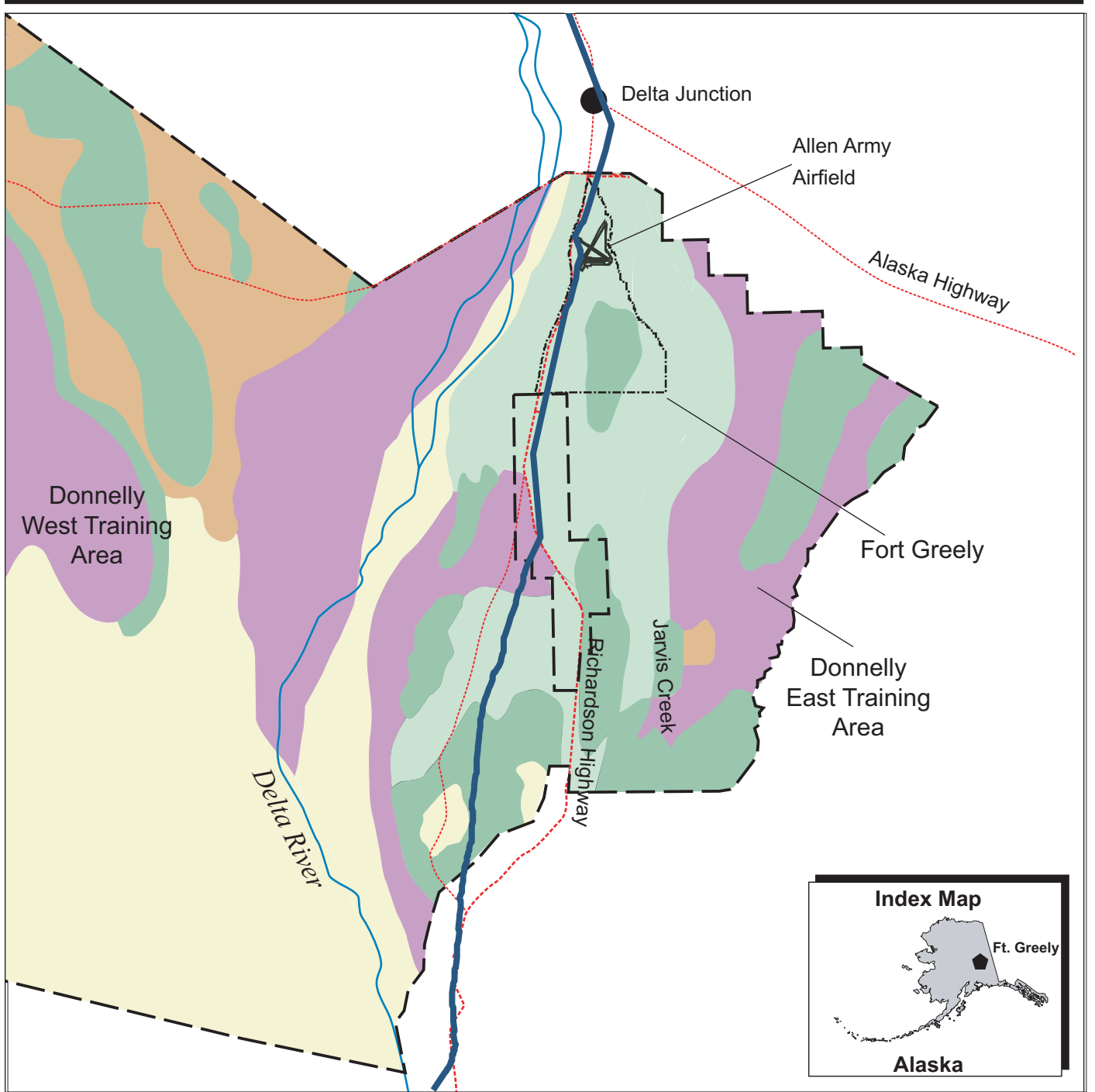
The predominant vegetation (figure 3-4) at the proposed sites is low growing spruce forest, which is common throughout Interior Alaska. Lowland black spruce interspersed with heath bog communities covers a large portion of Fort Greely. Dominant tree species are black spruce and balsam poplar. The understory and groundcover consist of *Vaccinium* spp. (mountain cranberry and bog blueberry), marsh labrador tea, crowberry, and a variety of mosses and lichens.

Native vegetation was removed from most of the cantonment area during the 1950s. The area has been landscaped and is maintained by mowing. A few isolated pockets of forest do remain, particularly north of the airfield and south of the missile field.

In June 1999, a wildfire burned through the area, and as a result, much of the vegetation within Fort Greely was destroyed. Consequently, the habitat types in the burned areas are now in an early successional stage consisting mostly of bare soil, grasses, sprouts, and seedlings. Approximately 54 hectares (134 acres) of the area proposed for test bed use underwent initial site preparation activities in late 2001 and 2002, including vegetation removal and initial earthwork related to site and road grading.

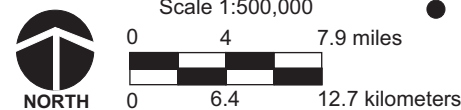
Wildlife

Fort Greely and the Donnelly Training Area support the largest number of game species found at any military installation within the United States. The most common big game species include black bear, grizzly bear, wolf, moose, bison, and barren ground caribou. Within the current Fort Greely, moose is the most common big game species. There are approximately 1.6 to 2.5 moose per 2.6 square kilometers (1 square mile) in the Fort Greely habitat area (Dubois, 2002). According to Alaska Department of Fish and Game (Ihlenfeldt, 2002), only one-third of Fort Greely contains quality moose habitat of about 971 hectares (2,400 acres). This equates to 6 to 10 moose utilizing all of Fort Greely. Fort Greely contains a small percentage of the available habitat for moose in the region. Alaska Department of Fish and Game, Game Management Unit 20D, which Fort Greely falls within, has approximately 14,589 square kilometers (5,633 square miles) for an estimate of 4,956 to 6,704 moose in this unit, or 0.9 to 1.2 moose per 2.6 square kilometers (1 square mile).



EXPLANATION

- | | | | |
|--|---------------------------------|--|----------------------|
| | Roads and Major Trails | | Mixed Forest |
| | Rivers | | Tundra/Barren |
| | Donnelly Training Area Boundary | | Coniferous |
| | Trans-Alaska Pipeline | | Deciduous/High Brush |
| | Fort Greely Boundary | | Muskeg |
| | City | | |



Area Vegetation

Fort Greely, Alaska

Figure 3-4

Commonly occurring predators in the Fort Greely area include grizzly bear, black bear, gray wolf, red fox, marten, coyote, and wolverine. Additional species trapped for fur at Fort Greely are mink, muskrat, snowshoe hare, beaver, lynx, wolf, and red squirrel. Wildlife usage of the cantonment and similarly developed areas include small rodents, ground squirrels, and bats. Moose and other big game species also occasionally utilize these areas. Avian species occurring within the project areas include the common raven, willow ptarmigan, rock ptarmigan, spruce grouse, ruffed grouse, owls, and a variety of songbirds.

Threatened and Endangered Species

No federally proposed or listed threatened, endangered, or candidate plant species are found in Interior Alaska and no known threatened or endangered wildlife species occur on Fort Greely.

Environmentally Sensitive Habitat

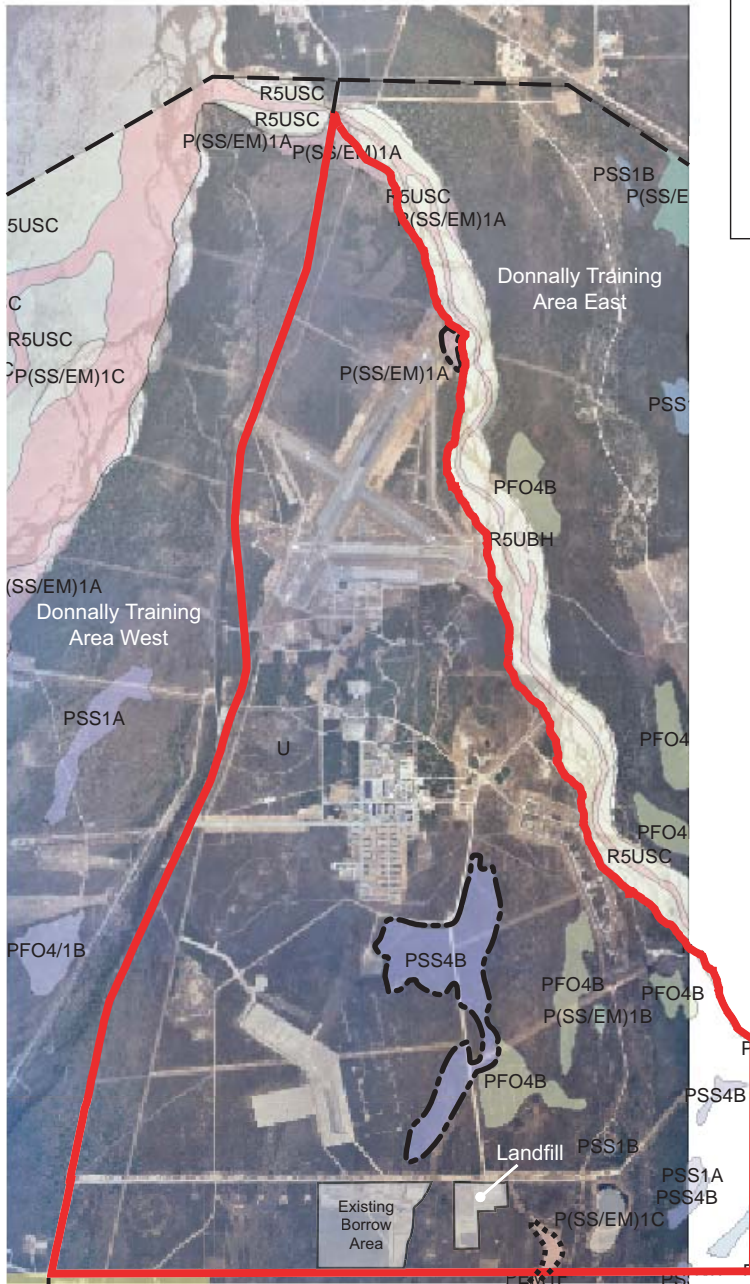
No federally designated critical habitat has been identified on Fort Greely.

Wetlands in Alaska are defined by the U.S. Army Corps of Engineers as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” The U.S. Army Corps of Engineers Alaska District and the U.S. Environmental Protection Agency (EPA) regulate wetlands through the Clean Water Act Section 404 Permitting Program. Based on the National Wetlands Inventory, figure 3-5 shows a small palustrine, scrub-shrub, emergent temporarily flooded wetland area near the north end of the 18/36 runway west of Jarvis Creek. A palustrine, scrub-shrub, needle-leaved evergreen wetland is also located south of the cantonment area and east of the GBI VOC test bed, straddling Landfill Road. Also, a third area of palustrine emergent persistent semi-permanently flooded wetland is located along the southern boundary of Fort Greely, southeast of the landfill. (U.S. Army Corps of Engineers, Alaska District, 1999) However, National Wetlands Inventory maps are not always reliable, and a final determination must be made by the U.S. Army Corps of Engineers based on a field investigation. This was done for Fort Greely and only the area along the southern boundary was determined to be a wetland (Phillips, 2002).

3.1.4 CULTURAL RESOURCES

Cultural resources include prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason. For ease of discussion, cultural resources have been divided into archaeological resources (prehistoric and historic), historic buildings and structures, native populations/ traditional resources (e.g., Native American sacred or ceremonial sites), and paleontological resources.

Numerous laws and regulations require that possible effects to cultural resources be considered during the planning and execution of federal undertakings. These laws and regulations stipulate a process of compliance, define the responsibilities of the federal agency proposing the action, and prescribe the relationship among other involved agencies (e.g., SHPO and the Advisory Council on Historic Preservation). In addition to NEPA, the primary laws that pertain to the treatment of cultural resources during environmental analysis are the National Historic



Source: U.S. Fish and Wildlife Service, 2001

EXPLANATION

- Installation Boundary
- Determined to be Non-wetlands
- Confirmed to be Wetlands
- Donnally Training Area Boundary

National Wetlands Inventory

Fort Greely, Alaska

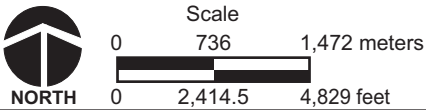


Figure 3-5

11-13-02 Greely wetlands

Preservation Act (especially Sections 106 and 110), the Archaeological Resources Protection Act, the Antiquities Act of 1906, the American Indian Religious Freedom Act, and the Native American Graves Protection and Repatriation Act.

Region of Influence

The term ROI is synonymous with the "area of potential effect" as defined under cultural resources regulations, 36 CFR 15 Part 800.16(d). In general, the ROI for cultural resources encompasses areas requiring ground disturbance. The currently defined ROI for the proposed activities at Fort Greely includes alignments of the proposed fences for the cantonment area, southern boundary, and Allen Army Airfield, and the area for extension of the airfield's 18/36 runway, associated approach lighting, and the radar site.

Affected Environment

Prehistoric and Historic Archaeological Resources

As discussed in the GMD VOC EA, archaeological evidence indicates that the Fort Greely area has been occupied for 10,000 to 12,000 years. Sites are found in every vegetative community and predominantly west of the Delta River out of the ROI. Most of the sites are surface flake scatters, isolated artifacts, or are found in a disturbed context and contain insufficient information to determine site function, affiliation, or age.

In 1997, the Bureau of Land Management and the U.S. Army Corps of Engineers, Alaska District conducted a survey of the Base Realignment and Closure cantonment area (including the runway area). Due to a lack of subsurface artifacts, the cantonment area is considered clear of cultural resources concerns. However, two archaeological resources sites were identified in the Fire Tower Hill area. No sites were identified in the airfield area.

There are no recorded sites within the proposed GBI area, and due to the degree of disturbance to the area and the physiographic setting within which the GBI area occurs, the potential for archaeological materials is considered low. An archaeological survey of the Fort Greely ROI performed in August 1999 confirmed this assumption (Northern Land Use Research, Inc, 1999). Recent use sites (i.e., less than 50 years in age) are associated with contemporary hunters, trappers, and the military. None of these display sufficient significance or integrity to be considered eligible for listing in the National Register.

Historic Buildings and Structures

As a result of archaeological investigations, no historic sites have been identified at the current Fort Greely. However, a review of the World War II and Cold War inventory of the former Fort Greely by the Alaska SHPO and subsequent consultation between the U.S. Army and the SHPO indicates that there are 26 buildings and structures eligible for listing in the National Register. A Memorandum of Agreement between the U.S. Army and the Alaska SHPO regarding these buildings has been completed. The Memorandum of Agreement stipulated that all of the buildings within the district "may be altered, demolished, leased with no restrictions, or transferred out of federal ownership with no restrictions" following completion of Historic American Buildings Survey (HABS) Level 1 recordation. All HABS information has been delivered and the Memorandum of Agreement between SHPO and the U.S. Army has been signed. (Spiers, 2001a)

Native Populations/Traditional Resources

Fort Greely encompasses lands historically and prehistorically occupied by the Tanana Indians. Salcha Natives used the Delta River and Delta Creek for subsistence hunting in historic times; however, this generally ceased by the 1920s. By 1962 there were no native settlements in the Tanana Valley between Healy Lake and Nenana.

No Alaska Native traditional cultural properties have been formally identified within the ROI. In addition, no Alaska Native reservations or villages are in the immediate vicinity of Fort Greely. Tanana is the closest Alaska Native village, approximately 129 kilometers (80 miles) east of Fort Greely.

Paleontological Resources

The ROI at Fort Greely is situated within an alluvial fan, characterized by glacial till; portions of the ROI are also underlain by permafrost. Although the bones of Ice Age mammals have been found elsewhere on the installation, no paleontological remains have been encountered within the ROI.

3.1.5 GEOLOGY AND SOILS

Geology and soils include those aspects of the natural environment related to the earth, which may affect or be affected by the Proposed Action. These features include physiography, geologic units and their structure, the presence/availability of mineral resources, soil condition and capabilities, and the potential for natural hazards.

Region of Influence

The ROI for geology and soils includes that area that could potentially be disturbed by construction activities associated with the proposed fences, the runway extension, and the radar site.

Affected Environment

Physiography

Fort Greely encompasses a portion of Tanana–Kuskokwim Lowlands physiographic province. Streams flowing through the foothills generally originate in the Alaska Range and flow north in rugged V-shaped canyons and across broad terraced valleys. Fort Greely is situated between two significant drainages originating in the foothills—the Delta River to the west and Jarvis Creek to the east. The terrain at the site is mildly undulating with elevations ranging from approximately 411 to 442 meters (1,350 to 1,450 feet). The site vicinity has a northeast surface gradient of about 18 meters (60 feet) per 1.6 kilometers (1 mile).

Geology

Fort Greely is located on a low alluvial terrace that has a gently undulating surface. The terrace is composed of glacial outwash deposits that are underlain by till, which is in turn underlain by stratified gravel. Moraine features to the east and south of the cantonment are composed of coarse, unstratified, unsorted till ranging from silty gravel with sand to sandy silt with gravel.

Wind blown loess of glacial origin forms a mantle over much of the Fort Greely area, ranging from several centimeters thick to greater than 1.5 meters (5 feet) thick. Discontinuous permafrost occurs throughout the region. The permafrost ranges from the surface to as much as 66 meters (217 feet) below ground surface.

Soils

No detailed soil surveys have been completed for Fort Greely. Shallow, well-drained silt loams with sandy to gravelly underlying material occupy most of the rolling uplands on the surface of the glacial moraines and alluvium east of the Delta River. The exact thickness and areal extent of these soils at the site are unknown.

Geologic Hazards

Fort Greely lies in seismic Zone 3, where major earthquake damage has a 10 percent probability of occurring at least once in 50 years. Earthquake epicenters are scattered throughout Fort Greely and surrounding areas. From past studies there appears to be no concentration of seismic events in the area, and serious damage has not been reported.

Permafrost was not encountered within test borings conducted at the proposed GBI VOC test site in 1999, nor did ground penetrating radar indicate any ice lenses or other permafrost features.

3.1.6 HAZARDOUS MATERIALS AND WASTE

The relevant aspects of hazardous materials/waste management include the applicable federal and state regulations and Fort Greely Environmental Procedures. These procedures include specific procedures for hazardous materials usage and hazardous waste generation, and management programs for existing hazardous waste-contaminated sites within areas potentially affected by the Proposed Action, as well as spill notification and response procedures.

Hazardous materials and hazardous waste management activities are governed by specific environmental regulations. Any hazardous materials and waste management plans applicable to the proposed activities that have lapsed since realignment would be updated and reinstated. For the purposes of the following analysis, the terms hazardous materials or hazardous waste will mean those substances defined by both federal and state regulations.

Region of Influence

The ROI for hazardous materials and hazardous waste management includes the area of the Proposed Action and support activities at Fort Greely.

Affected Environment

Hazardous Materials Management

The *Hazardous Materials and Waste Management Procedures*, created by USASMDC for Fort Greely in October 2002 as part of the *Fort Greely Environmental Procedures*, complies with all applicable state and federal regulations. It established standard operating procedures for the

correct management and storage of hazardous materials. (U.S. Army Space and Missile Defense Command, 2002b)

USASMDC has also prepared *Spill Notification and Response Procedures* for Fort Greely (U.S. Army Space and Missile Defense Command, 2002b), which leads personnel through procedures necessary to safely detect, report, contain, and clean up all spill discharges on post. Also, a *Storm Water Pollution Prevention Plan* (SWPPP) is scheduled to be completed in December 2002. The plan includes site-specific good housekeeping practices, facility surveys, satellite accumulation area inspections, employee training, record keeping and internal reporting, comprehensive site compliance evaluation, and sediment and erosion control. The installation also complies with applicable reporting requirements by submitting annual emergency response and extremely hazardous substances updates to the local emergency management officials.

Hazardous Waste Management

Fort Greely is registered by the EPA as a small quantity generator. The wastes are accumulated in 208-liter (55-gallon) drums at satellite accumulation points before disposal. An unnumbered building near T100 serves as the temporary hazardous waste storage facility (Spiers, 2001a). Hazardous waste management is performed in accordance with the *Hazardous Materials and Waste Management Procedures* established by USASMDC for Fort Greely. (U.S. Army Space and Missile Defense Command, 2002b)

Pollution Prevention

A Pollution Prevention Plan for Fort Greely is scheduled to be developed and implemented in fiscal year 2003. This plan would aid in the elimination or reduction of hazardous substances, pollutants, and contaminants. Recycling activities at Fort Greely include fuels, batteries, and brass shell casings.

Installation Restoration Program

No Installation Restoration Program (IRP) sites on Fort Greely have been listed on the Comprehensive Environmental Response, Compensation, and Liability Act National Priorities List. In addition, there are no known leaking underground storage tank sites on the installation (Boerst, 2002).

Three buildings within the cantonment area are on the State Priorities List for cleanup and/or monitoring. These include Building 612, where waste drains to the sanitary sewer; Building 601, where transformers, solvents, and herbicides have been stored in the Resource and Utilities yard north of the building; and Building 605, which includes a maintenance shop, paint bay, and battery storage facility.

Environmental cleanup at Fort Greely has been addressed under both the IRP and the Base Realignment and Closure Environmental Cleanup Program. Numerous sites have been investigated by the U.S. Army and remediated under these programs. Investigations are now complete at all known sites, while several suspected sites are still being investigated. Cleanup of the nuclear waste line from the past activities of the SM-1A nuclear reactor has been completed, and other cleanup actions at Building 110 and the old firefighter training pits are currently underway. Building 101 and several other sites are being characterized for the extent

of contamination and scheduled for cleanup. (Spiers, 2001b) Remediation activities will follow Fort Greely's *Institutional Controls, Excavation Clearances Procedures*, which requires permission before initiating digging. (U.S. Army Space and Missile Defense Command, 2002b)

Other

Due to the age of the existing control tower at the Allen Army Airfield, lead-based paint and/or asbestos could be present.

3.1.7 HEALTH AND SAFETY

Health and safety includes consideration of any activities, occurrences, or operations that have the potential to affect one or more of the following:

The well-being, safety, or health of workers—Workers are considered to be persons directly involved with the operation producing the effect or who are physically present at the operational site.

The well-being, safety, or health of members of the public—Members of the public are considered to be persons not physically present at the location of the operation, including workers at nearby locations who are not involved in the operation and the off-post population. Also included within this category are hazards from equipment, structures, plants, and animals.

Region of Influence

The ROI for health and safety of workers includes the immediate work areas used during the proposed construction activities. The ROI for public safety includes properties immediately adjacent to the installation and the transportation network for hazardous materials.

Affected Environment

Fort Greely maintains maintenance personnel and firefighting support. The fire station is located in the cantonment area and is staffed to support the current MDA mission. To assist in emergency response, Fort Greely maintains cooperative agreements with most of the small communities within a 161-kilometer (100-mile) radius of the installation.

The Allen Army Airfield at Fort Greely is only minimally used for training. The Clear Zones for the airfield are currently contained within the installation boundaries. No airport surveillance radars currently exist at Fort Greely.

Under a Memorandum of Understanding, the Bureau of Land Management Alaska Fire Service is responsible for fire detection and suppression on withdrawn lands. The Alaska Fire Service has a reciprocal Fire Protection Agreement with the State of Alaska, Department of Natural Resources, Division of Forestry. Nineteen fires of 40 hectares (100 acres) or more occurred on Fort Greely from 1954 to 1997. A 15-meter (50-foot) firebreak around all facilities has historically been required.

3.1.8 INFRASTRUCTURE

Infrastructure addresses those facilities and systems that provide power, water, wastewater treatment, the collection and disposal of solid waste, and other utility services.

Region of Influence

The utility systems that could potentially be affected by the Proposed Action include potable water distribution; wastewater collection; solid waste collection and disposal; telephone lines; and electrical lines.

Affected Environment

Solid Waste

Current solid waste management operations consist of solid waste collection, volume reduction by open pit burning, and final disposal (including ash) in the landfill. The installation landfill is an Alaska Class II Municipal Solid Waste Landfill that is currently permitted to receive both sewage sludge and asbestos materials. The current facility is not lined, but does have groundwater monitoring tubes. Cells at this facility are about 18 meters (60 feet) by 61 meters (200 feet) by 6.1 meters (20 feet) deep and have the capacity for another 1.5 years usage under current conditions. Once the existing landfill is closed, new cells are planned to be opened immediately south of the existing cells. A permit for this effort has been submitted to ADEC. Open burning is authorized under the current permit and conducted about once a week in a burn facility located away from the working force and not inside the landfill boundary. It is limited to wood, paper, and cardboard that do not create black smoke or smoldering of waste. Gravel is used for daily cover at the working face of the landfill.

Water

The potable water supply at Fort Greely is currently managed from Building 606, the power plant. Two groundwater wells are used to supply all of the existing building facilities and fire hydrants within the main cantonment. These two wells have a combined capacity of 4.2 million liters per day (1.1 million gallons per day). A 712,000-liter (188,000-gallon) storage tank is located in Building 606 and feeds two 76,000 liter (20,000 gallon) pressure tanks that pump into a piped water system. The existing installation water system, when all buildings were in use, consumed roughly 1.1 million liters per day (0.3 million gallons per day). Two new 1,893-liter- (500-gallon-) per-minute wells were developed during initial GMD site preparation activities at the GBI test bed to provide a dependable water source for the test bed activities.

Wastewater

The sewage system at Fort Greely has a capacity of 1.7 million liters per day (0.46 million gallons per day) and is operated by USASMDC. Wastewater usage, when all buildings were in use, was less than 1.2 million liters per day (0.32 million gallons per day). Sewer lines convey wastewater to an Imhoff (septic) tank inside Building 633. Sludge from the bottom of this tank is pumped to sludge drying beds. Once the sludge is dried, it is hauled to the landfill. Effluent from the Imhoff tank is conveyed to the sewage lagoon. The lagoon is aerated for further treatment. Effluent leaving the sewage lagoon is discharged to Jarvis Creek under a National Pollutant Discharge Elimination System (NPDES) permit held by USASMDC. Monitoring and sampling of the effluent is conducted daily by the Fort Greely Department of Public Works work

force. All wastewater facilities are in excellent condition and meet current and future MDA mission demands.

Electricity

Electrical power requirements at Fort Greely are currently met through a combination of power supplied from Fort Wainwright and on-post generators run by Fort Greely personnel. The electrical power from Fort Wainwright is "wheeled" over the commercial electrical grid that exists between the two bases and is eventually supplied to Fort Greely through an existing 2.9-megawatt (MW) substation. The average electrical power demand at Fort Greely was approximately 1.8 MW when all buildings were in use. However, peak demands of up to 3.3 MW sometimes occurred during the winter. When the demand at Fort Greely exceeded the capacity of the substation, the additional power requirements were met by the three on-post diesel-powered generators, which together can generate up to 0.95 MW.

Traffic

With no existing security fences around the cantonment area, southern boundary, or Allen Army Airfield, vehicular traffic can currently access Fort Greely without entering through the main security gate. Personnel from Donnelly Training Range routinely use roads, paths, and fords to cross between the east and west ranges. These main routes include a ford to cross Jarvis Creek near the airfield and Firebreak Road in the southern area to access other fords.

3.1.9 LAND USE

Land use can be defined as the human use of land resources for various purposes including economic production, natural resources protection, or institutional uses. Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of uses that are allowable or protect specially designated or environmentally sensitive uses. Potential issues typically stem from encroachment of one land use or activity on another, or an incompatibility between adjacent land uses that leads to encroachment.

Region of Influence

The ROI for land uses includes all lands on and adjacent to Fort Greely that could be potentially affected by the Proposed Action.

Affected Environment

Fort Greely is not located in a municipality or a borough, and there are no local zoning or land use policies. There are also no state zoning or land use plans or guidelines for the area. Therefore, existing land uses do not conflict with any federal, state, or local land use plans or policies. The land around Fort Greely is composed of forests, tundra, or wetlands and serves as a military training range. The closest inhabited structures are in Delta Junction.

The current Fort Greely is approximately 2,914 hectares (7,200 acres). The boundary was established using the border described in Public Land Offering 255. The remainder of the former Fort Greely was transferred to Fort Wainwright, Alaska and remains under USARAK control. Other than the vehicle test loops used to test vehicles in extreme weather conditions and varying snow depths, there are very few man-made structures on the range areas under USARAK control.

When portions of the range are not in use for the testing of materials, infantry, and artillery, engineer units use the area for non-firing marches, troop maneuvers, artillery unit training, and small arms training (with blank ammunition).

In the past, the military and the public used the former Fort Greely for a wide range of recreation activities. Portions of the installation were closed at times for military missions, and impact areas were always closed for safety considerations. Otherwise, most of the remainder of the installation was used for recreation after obtaining permission from Fort Greely. The most common recreation activities on the installation were hunting, fishing, and trapping. Other activities include off-road vehicle use, hiking, backpacking, camping, boating, bicycling, wildlife watching, and skiing. Recreational use of the Donnelly Training Area continues; however, for security reasons, the current Fort Greely is only accessible to authorized personnel.

The majority of Fort Greely is heavily forested, including the western boundary as viewed from Richardson Highway. This is the only area commonly observed by the public.

The use of Fort Greely's natural resources for legal subsistence is nonexistent (U.S. Department of the Army, 1999). Hunting, fishing, and trapping permits for Fort Greely are issued to civilians. Most are residents of non-native communities in Big Delta and Delta Junction.

3.1.10 NOISE

Noise is usually defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise levels often change with time; therefore, to compare levels over different time periods, several descriptors have been developed that take into account this time-varying nature. These descriptors are used to assess and correlate the various effects of noise on humans and animals, including land-use compatibility, sleep interference, annoyance, hearing loss, speech interference, and startle effects.

The decibel (dB) is the accepted standard unit for the measure of the amplitude of sound because it accounts for the large variations in amplitude and reflects the way people perceive changes in sound amplitude. Sound also varies with frequency or pitch. When describing sound and its effect on a human population, A-weighted sound levels, measured in A-weighted decibels (dBA), are typically used to account for the response of the human ear. The term "A-weighted" refers to a filtering of the sound signal to emphasize frequencies in the middle of the audible spectrum and to de-emphasize low and high frequencies in a manner corresponding to the way the human ear perceives sound.

The primary environmental noise descriptor used in environmental noise assessments is the A-weighted Day-Night Equivalent Sound Level (which is abbreviated DNL and symbolized as L_{dn}). The DNL was developed to evaluate the total daily community noise environment. The DNL is the average A-weighted acoustical energy during a 24-hour period, with 10 dBA added to all signals recorded within the hours of 10:00 p.m. and 7:00 a.m. This 10 dBA is a penalty that accounts for the extra sensitivity people have to noise during typical sleeping hours.

Almost all federal agencies having non-occupational noise regulations use DNL as their principal noise descriptor for community assessments.

Region of Influence

The ROI for noise includes those areas potentially affected by proposed activities that could experience DNLs greater than or equal to 65 dBA, those areas potentially affected by proposed activities that might experience short-term noise events (of less than 8 hours) with noise levels greater than or equal to 85 dBA, and those areas along roadways potentially affected by proposed activities that might experience a Continuous Equivalent Sound Level ($L_{eq(1 \text{ hour})}$) greater than or equal to 67 dBA.

Affected Environment

The area surrounding Fort Greely is sparsely populated, and thus, would be expected to have a background noise level of DNL less than or equal to 55 dBA. However, under certain conditions, a low-level droning noise from a nearby Trans-Alaska pipeline pumping station can be heard at Fort Greely and was estimated to be approximately 55 dBA.

The principal sources of noise at Fort Greely are vehicular traffic and military activities. In the past, a small firing range was operated on Fort Greely for both training and recreational purposes. This firing range could become operational again in the future. Other noise sources could include aircraft overflights and maintenance equipment. Frequency and duration of noise from military activities on surrounding training lands vary as a factor of the irregular training schedules. Noise from military activity on Donnelly East and West training lands, while intermittent, can be fairly loud. Noise from weapons testing at Donnelly Training Areas adjacent to Fort Greely typically ranges from 112 to 190 dBA. The noise levels on the ground from a helicopter at 460 meters (1,500 feet) and 76 meters (250 feet) of altitude are 79 dBA and 95 dBA, respectively. Maintenance equipment, such as the tracked vehicles used for trail maintenance, can generate noise levels up to 105 dBA.

The main highways in the vicinity of Fort Greely are the Richardson Highway and the Alaska Highway. No noise sensitive receptors (churches and communities) are known immediately adjacent to Fort Greely. The town of Delta Junction is located about 8 kilometers (5 miles) north of the Fort Greely cantonment area. Delta/Greely School District leases a school building at Fort Greely, but it is currently not used as a classroom facility. The gym, however, is used for basketball and other extracurricular activities after normal school hours by authorized personnel.

3.1.11 SOCIOECONOMICS

Socioeconomics describes a community by examining its social and economic characteristics. Several demographic variables are analyzed in order to characterize the community, including population size, the means and amount of employment, and income creation. In addition, socioeconomics analyzes the fiscal condition of local government and the allocation of the assets of the community, such as its schools, housing, public services, and healthcare facilities.

Region of Influence

The ROI is assumed to include Fort Greely, Delta Junction, and Big Delta.

Affected Environment

Fort Greely is in Interior Alaska, on the Richardson Highway. The nearest town to Fort Greely is Delta Junction, about 8 kilometers (5 miles) north of the main cantonment area. The area is

sparsely populated with an economy dependent on Fort Greely, state employment, some agriculture and Alyeska Pipeline Service Company. Fort Greely's arctic training became a major contributor to the local economy. In July 1995, the Base Realignment and Closure Commission recommended realignment of Fort Greely, which was completed in July 2001. However, changes were immediately made to the recommended realignment to establish the current Fort Greely.

Population

The ROI is part of a wider region known as the Southeast Fairbanks Census Area. In 2000, it was estimated that the Census Area had a population of 6,174. The population of the ROI at that time was 2,050, or 33 percent of the Census Area.

Population growth in the Census Area was affected by the reduction in personnel at Fort Greely. The population in the census area increased approximately 7.3 percent between 1990 and 2000, whereas the rest of the state's growth was 14 percent. The impact of the downsizing of Fort Greely on the region's population is further emphasized as Fort Greely's share of the Census Area population fell from 52.2 percent in 1990 to 22.5 percent in 2000.

The Alaska Native population of the ROI in 2000 was relatively small, with Fort Greely having the lowest density of the three communities at 1.3 percent. Delta Junction and Big Delta had Alaska Native populations of 4.0 percent and 1.5 percent, respectively (U.S. Census Bureau, 2002).

Employment

Before realignment, Fort Greely accounted for approximately 50 percent of all the employment in its surrounding communities, emphasizing the lack of diversity in the economy of the ROI. The School District is the second largest government employer in the area, along with state and federal highway maintenance services. The highway also provides some tourism-related employment during the summer months.

Unemployment in 2000 was 6 percent and 12.8 percent for Delta Junction and Big Delta respectively. The number of residents 16 years and over not in the labor force was 40.9 percent for Delta Junction, and 48.4 percent for Big Delta (U.S. Census Bureau).

Retail Sales

Retailing within the ROI is limited to small convenience stores, usually combined with a gas station, and tourism-related retailing, including bars and restaurants. The nearest variety retailing center to the ROI is Fairbanks.

Income

Big Delta had the highest median income between the two communities that are located close to Fort Greely. Big Delta also had the highest proportion of individual residents living below the poverty level, with 30 percent. Delta Junction had 19.4 percent. According to the 2000 Census Bureau data, the median income for Big Delta was \$49,000 and for Delta Junction was \$43,500.

Housing, Education, and Health

There were 654 homes in the Big Delta and Delta Junction communities in 2000. A little over 27 percent were vacant. (U.S. Census Bureau) However, temporary housing and hotels are currently at a premium in the Delta Junction area as rents have substantially increased due to construction work at Fort Greely.

There are five schools in the Delta/Greely School District, with an estimated student roll of 604. The school at Fort Greely is not currently used as a classroom facility. Additionally, some district students attend “cyber” and correspondence schools. (Delta/Greely School District, 2002) Delta Junction has a family medical center, and Fort Greely has a clinic. The nearest hospital is 153 kilometers (95 miles) away at Fairbanks.

Fiscal Condition

Delta Junction raised \$150,000 of revenue in 1997 from local service charges and external, state sources. It spent almost \$184,000 in the same year, the majority on public safety, roads, parks, and recreation. Delta Junction does not levy a bed tax on temporary accommodation.

3.1.12 WATER RESOURCES

This section describes the existing water resource conditions at each of the proposed sites. Water resources include surface water, groundwater, water quality, and flood hazard areas.

Region of Influence

The water resources ROI includes all surface water features, drainage areas, and underlying aquifers that could be affected by construction or operations. This includes the area from the Allen Army Airfield south to the southern boundary.

Affected Environment

Surface Water

Fort Greely is in the Delta River watershed. The Delta River to the west and Jarvis Creek immediately east are the two primary drainages for the Fort Greely ROI. Both are glacier-fed and silt-laden. The peak flow in these water systems is reached in late summer, when snow and ice melt is augmented by rainfall. Minimum flow occurs in winter when precipitation occurs as snow and Jarvis Creek and Delta River are generally frozen solid. Other surface water bodies within the ROI are intermittent, unnamed creeks and lakes.

Although floodplain boundaries have not been developed for the ROI, there is a low probability of flooding. High flows in the Delta River overflow to the west rather than toward the ROI. Jarvis Creek overflowed into an old channel during a 1967 flood. Since a barrier was placed at the overflow location, flooding along the old channel has not occurred.

Due to the relatively flat terrain and permeable soils within the ROI, much of the storm water runoff infiltrates before it reaches a water body. Fort Greely operates under an NPDES Multi-Sector Industrial Storm Water Permit and an SWPPP is scheduled to be completed in December 2002.

Groundwater

One unnamed water-bearing unit has been described in the ROI. This unit consists of a lower stratified gravel layer. The top of the water-bearing unit is encountered at about 52 meters (170 feet) below ground surface. One boring completed at Fort Greely penetrated the alluvium to depths of 122 meters (400 feet) below ground surface. It has been reported that the lower stratified gravel aquifer is at least partially confined by low-permeability lenses and seams that may result in the formation of perched water zones.

Groundwater flows northeasterly at a regional gradient ranging from approximately 1.5 to 6 meters (5 to 21 feet) per mile. Groundwater in the area is recharged continuously by the Delta River and by infiltration of meltwater from the Alaska Range in the late spring and early summer. The depth to groundwater ranges from 52 meters (170 feet) to at least 91 meters (300 feet) below ground surface, and fluctuates in response to seasonal recharge. As of 1983, there were five usable wells on Fort Greely, located near the north end of Fort Greely, yielding an estimated combined capacity in excess of 15 million liters (4 million gallons) per day (U.S. Army Corps of Engineers, 1996). Two new 1,893-liter- (500-gallon-) per-minute wells were developed in 2001 during initial site preparation activities.

Water Quality

State primary standards protect drinking water quality by limiting the levels of specific contaminants that can adversely affect public health and are known or anticipated to occur in water. Secondary drinking water standards are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (skin or tooth discoloration) or aesthetic effects (taste, odor, or color) in drinking water. The drinking water source at Fort Greely is the groundwater. Groundwater quality in the vicinity of Fort Greely also meets the state drinking water standards. Surface water quality samples at Fort Greely meet the primary drinking water standards; however, the concentrations of aluminum, iron, and manganese were higher than the secondary standards. Measurements of pH on Fort Greely were within the state standards.

3.1.13 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued 11 February 1994. Objectives of the Executive Order include development of federal agency implementation strategies, identification of minority and low-income populations where proposed federal actions have disproportionately high and adverse human health and environmental effects, and participation of minority and low-income populations. Although an environmental justice analysis is not mandated by NEPA, DoD has directed that NEPA will be used as the primary approach to implement the provision of the Executive Order.

The 2000 Census of Population and Housing reports numbers including both minority and poverty residents. Minority populations included in the census are identified as Black or African American; American Indian, Eskimo or Aleut; Asian; Native Hawaiian or Pacific Islander; Hispanic or Latino; or other. Poverty status (used to define low-income status) is reported as the number of families with income below poverty level. The 1999 poverty status indicates 11.6 percent of families at Fort Greely, 12.3 percent at Delta Junction, and 7.9 percent at Big Delta were below the poverty level (U.S. Census Bureau, 2002). No families live at Fort Greely since the Base Realignment.

Region of Influence

The ROI for environmental justice includes the Census Designated Places (Big Delta and Fort Greely) and the closest town, Delta Junction, which are in the Southeast Fairbanks Census Area.

Affected Environment

Based upon the 2000 Census of Population and Housing, the Southeast Fairbanks Census Area has a population of 6,174. Of that total, 1,167 persons, or 18.9 percent, were low income, and 1,463 persons, or 23.7 percent, were minority.

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4.0

ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

To assess the potential for and significance of environmental impacts from the proposed program, a list of activities was developed (chapter 2.0) and the environmental setting was described, with emphasis on any special environmental sensitivities (chapter 3.0). Program activities were then compared with the potentially affected environmental components to determine the environmental impacts of the proposed supplemental GMD VOC activities.

This chapter describes the potential environmental consequences of the proposed activities by comparing them with the potentially affected environmental components. Section 4.1 provides discussions of the potential environmental consequences of these activities. Potential impacts are discussed in terms of construction, operation, and cumulative impacts. The amount of detail presented in each section is proportional to the potential for impacts. Sections 4.2 through 4.10 provide discussions of the following with regard to proposed supplemental GMD VOC test site activities: cumulative impacts; environmental effects of the No-action Alternative; adverse environmental effects that cannot be avoided; conflicts with federal, state, and local land use plans, policies, and controls for the area concerned; energy requirements and conservation potential; irreversible or irretrievable commitment of resources; relationship between short-term use of the human environment and the maintenance and enhancement of long-term productivity; natural or depletable resource requirements and conservation potential; and *Federal Actions to Protection of Children from Environmental Health Risks and Safety Risks* (Executive Order 13045).

4.1 FORT GREELY

As discussed in chapter 2.0, the proposed additional GMD VOC activities at Fort Greely include:

- Construction of security fences around three areas: the cantonment area, the southern boundary area, and the Allen Army Airfield
- Extension of the Allen Army Airfield south-north runway (18/36) and the addition of turnarounds and approach lighting at each end
- Improvements to the east-west runway (9/27) to upgrade the runway surface, add turnarounds to each end, and add lateral lighting systems
- Designation of a hotspot at the north end of the 18/36 runway and the northeast end of the northeast-southwest runway (6/24)
- Provisions for deicing activities at the turnarounds at each end of the 18/36 and 9/27 runways
- Modifications to activities at Allen Army Airfield to include adding Class D to the existing Class E controlled airspace, reactivation of the control tower or construction of a new control tower, and installation and use of an ASR-11 or similar type airport surveillance radar

These activities are analyzed below by applicable resource. Resources that have a potential for impacts were considered in the analysis to provide the decisionmakers with sufficient evidence and analysis for evaluation of potential effects of the action.

Depending on funding and security requirements, the fences may be constructed in series or in parallel. The final designs and layouts have not been completed; therefore, minor changes to the requirements and site layout are possible. If changes are made, final plans would be compared to this supplemental EA to ensure that no additional environmental effects are introduced.

4.1.1 AIR QUALITY

This section addresses potential environmental impacts caused by changes to the air quality environment due to the proposed construction and operation of the supplemental GMD VOC activities on Fort Greely.

4.1.1.1 Construction—Air Quality

Security Fencing

Construction of security fencing around the cantonment area, the five alternative alignments around the southern boundary, and around the airfield would require vegetation clearing of 9.1 meters (30 feet) inside the fences and 3.7 meters (12 feet) outside the fences. An additional 3 meters (10 feet) of clearing may be necessary in order to windrow the cleared debris; therefore, the fence right-of-way would be a maximum of 15.8 meters (52 feet) wide. The fence alignments have been selected to take advantage of existing roads, trails, and rights-of-way to reduce the amount of clearing required. In some areas, no clearing would be needed and in others, it could range from a width of 6.7 to 15.8 meters (22 to 52 feet). Gates would be provided as needed. Construction would take place for 3 to 4 months in the April to October timeframe when the ground is not frozen. The year of actual construction would depend upon the availability of funding. The cleared areas would be reseeded with a grass mixture suitable for the area.

Emissions associated with construction activities include fugitive dust from ground disturbance and combustion byproducts from construction equipment. Although the construction would cause an increase in air pollutants, the impact would be both temporary and localized. Once construction ceases, air quality would return to its former levels. Construction would be conducted in accordance with the Air Quality Construction Permit (DEC Permit No. 238CP01, 14 August 2002) requirements.

Ground disturbance would generate dust in the immediate vicinity of the construction. The levels of dust generated would change through time depending on the level of activity, the weather, and the condition of the ground.

The north side of Fire Break Road has already been cleared in excess of the requisite 9.1 meters (30 feet). Therefore, the Preferred Southern Boundary Alignment and Alternative Alignment 2 would require less clearing than the other three alignments since no clearing would be required along the north side of Fire Break Road. Alternative Alignment 4 follows Fire Break Road, but on the south side; thus, only 6.7 meters (22 feet) of clearing would be required.

Increases in mobile emissions could also cause increases in ambient levels of some pollutants. Pollutants from mobile sources would include hydrocarbons, carbon monoxide, nitrogen oxides, and particle emissions. The primary pollutant of concern from mobile sources in Alaska is carbon monoxide.

It is anticipated that the proposed construction would not cause exceedances of the NAAQS or state standards beyond the immediate construction zone and would not have a long-term impact to air quality in the area. The implementation of standard dust suppression techniques and a vehicle maintenance program would minimize fugitive dust emissions and vehicle exhaust emissions and would help to maintain the area's current high air quality. Thus, activities associated with construction of the security fencing would not have a significant impact on air quality.

Airfield Modifications

Construction of the runway extensions, turnaround areas, and approach lighting for the 18/36 runway at Allen Army Airfield would require clearing, excavation, paving, and installation of light stands. Construction of the 9/27 runway improvements, turnaround areas, and lighting would also require clearing, excavation, and paving. Construction impacts would be similar to those discussed above. The increase in air pollutants (fugitive dust, combustion byproducts from construction vehicles and equipment, and possibly open burning of construction debris) would be both temporary and localized. Once construction ceases, air quality would return to its former levels; thus, no significant impacts to air quality would occur.

Construction would be conducted in accordance with the Air Quality Construction Permit (DEC Permit No. 238CP01, 14 August 2002) requirements. It is anticipated that the proposed construction would not cause exceedances of the NAAQS or state standards beyond the immediate construction zone and would not have a long-term impact to air quality in the area. The implementation of standard dust suppression techniques and a vehicle maintenance program would minimize fugitive dust emissions and vehicle exhaust emissions and would help to maintain the area's current high air quality.

Air Control

Construction and installation of the radar would require clearing and excavation for the radar structure and access road, and trenching for power and telecommunications lines. Construction impacts for each alternative radar site would be similar to those discussed above and would have minimal temporary impacts to air quality. Renovation of the existing control tower or construction of a new control tower would have negligible impacts to air quality.

4.1.1.2 Operations—Air Quality

Security Fencing

The only operations activities related to the fences would be maintenance and upkeep of the cleared areas (mowing) and fencing. These activities are not expected to result in impacts to air quality.

Airfield Modifications

The only operations activities related to the airfield modifications would be maintenance and upkeep of the cleared areas and runway. These activities are not expected to result in impacts to air quality.

Air Control

Operation and maintenance of the radar would include the use of oils and lubricants. Power and power backup would be provided by the existing installation system. Therefore, no backup generator would be needed. Thus, impacts to air quality would be minimal.

4.1.1.3 Cumulative Impacts—Air Quality

Emissions from mobile sources would add cumulatively to emissions from other mobile sources, on and off post, in the area, but these emissions would be temporary and are not anticipated to result in a measurable impact on air quality within the ROI. The implementation of standard dust suppression techniques, including grassing cleared areas once construction activities cease, would minimize the potential for cumulative impacts from fugitive dust. The construction and operation of security fences and airfield modifications would have relatively little impact on air quality and are not a potential source of cumulative impacts.

4.1.2 AIRSPACE

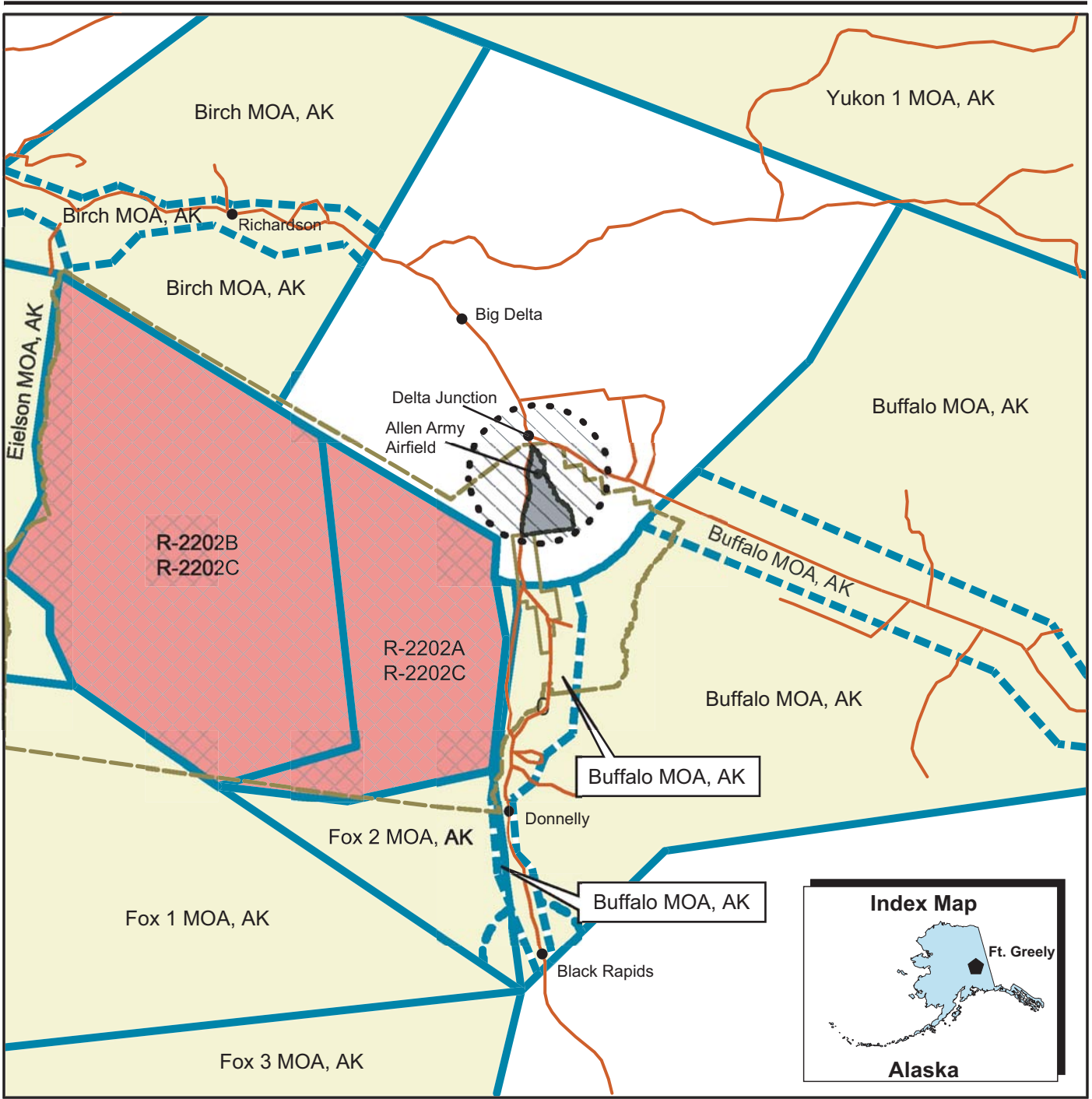
This section addresses potential impacts to airspace due to the proposed addition of Class D controlled airspace to the existing Class E airspace at Allen Army Airfield. Class D airspace is generally defined as the airspace from the surface to 762 meters (2,500 feet) above the airport elevation (charted in mean ground level), surrounding those airports that have an operational control tower. The configuration of each Class D airspace is individually tailored and would be designed to contain published instrument flight procedures. If it is decided to obtain Class D airspace, the process of pursuing this is contained in Army Regulation 95-2, *Air Traffic Control Airspace, Airfields, Flight Activities, and Navigation Aids*. The final design would be published in FAA Order 7400.9J. The elevation of the airfield is 389.2 meters (1,277 feet).

4.1.2.1 Construction—Airspace










Construction activities would not directly impact airspace activities.

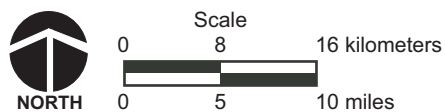
4.1.2.2 Operations—Airspace

Operation in Class D airspace requires a two-way radio capable of communicating with the control tower (in this case a VHF radio) with sufficient range to contact the control tower before entering a 7.4-kilometer (4-nautical-mile) radius area around the airfield and maintaining contact while operating within the area (figure 4-1). To staff an operational control tower at the airfield, it is estimated that 14 personnel would be required. Personnel could be military, FAA, or contractor personnel. Delta Junction airfield is located 5.2 kilometers (2.8 nautical miles) northwest of Allen Army Airfield. Therefore, Delta Junction Airport would probably be located within the Allen Army Airfield Class D airspace. Since Delta Junction airfield has no operating control tower, aircraft operating from this field would probably be under the operational control of



EXPLANATION

-  Fort Greely Installation Boundary
-  Towns
-  Military Operating Area (MOA)
-  Highway VFR Corridors
-  Restricted Air Space
-  Roads
-  Unrestricted Air Space
-  Donnelly Training Area Boundary
-  Proposed Class D Controlled Airspace (4 nautical miles)



**Proposed Class D
Controlled Airspace**

Fort Greely, Alaska

Figure 4-1

Allen Army Airfield while in the Class D airspace. However, since this Proposed Action would directly affect small aircraft aviation transiting the area at low altitude, it may require some aircraft pilots (at their expense) to upgrade their communications equipment.

To increase safety, an airport surveillance radar, such as an ASR-11, may be installed, which would have a positive impact to airspace management. The public would be required to contact the control tower when transiting the proposed Class D airspace for flight safety reasons. The controllers would then be able to advise civilian pilots as to their proximity to any military aircraft on approach or leaving Allen Army Airfield and what would be their safest action. The addition of a surveillance radar would allow a higher degree of advisor service, especially at night and/or in low-visibility conditions.

Impacts of the Proposed Action on the ROI area would be (1) a minor inconvenience to local pilots, (2) a potential minor expense to local pilots of maintaining or acquiring two-way VHF radio capability, and (3) an increase in flight safety due to the aviation advisory services available to pilots. Overall, no adverse environmental impacts are expected.

4.1.2.3 Cumulative Impacts—Airspace

Potential negative cumulative airspace impacts are not expected to occur in the vicinity of Fort Greely from the proposed activities. Adding Class D airspace would increase communications and radar observations and thus improve the air safety in the area.

4.1.3 BIOLOGICAL RESOURCES

This section addresses potential impacts to biological resources including vegetation, wildlife, threatened and endangered species, and environmentally sensitive habitat due to the proposed construction and operation of the supplemental GMD VOC activities on Fort Greely. Ground disturbance, habitat loss, noise from construction, and an increase in personnel during construction and operation could result in impacts to biological resources present in the area.

4.1.3.1 Construction—Biological Resources

Security Fencing

Measures would be implemented to minimize the potential for environmental impacts as discussed below.

Vegetation

Construction of the security fences would require clearing and grubbing of areas as described in chapter 2.0. It is estimated that the total disturbed area for the three fences would be approximately 25.9 hectares (64 acres), utilizing the Preferred Southern Boundary Alignment. The estimated amount of the proposed alignment clearing for each fenced area and associated alternative would be:

- Cantonment Fence 10.5 hectares (26 acres)
- Southern Boundary Fence, Preferred Alternative 7.3 hectares (18 acres)

– Southern Boundary Fence, Alternative 1	14.2 hectares (35 acres)
– Southern Boundary Fence, Alternative 2	6.9 hectares (17 acres)
– Southern Boundary Fence, Alternative 3	12.5 hectares (31 acres)
– Southern Boundary Fence, Alternative 4	9.7 hectares (24 acres)
■ Allen Army Airfield Fence	8.1 hectares (20 acres)

Rights-of-way along existing roads, trails, and the Trans-Alaska pipeline would be used where possible for the fencing construction. The Trans-Alaska Pipeline Right-of-Way User Guideline would be obtained from Alyeska Pipeline Service Company as needed for construction activities parallel to the pipeline. Any clearing of streamside vegetation would be done by hand to leave stumps and root systems in place to control bank erosion. All of the fencing and requisite clearing would be sited in areas composed of mixed forest and deciduous/high brush. No sensitive vegetation species have been identified within the proposed project area. Upon completion of the fence installation, the cleared area would be graded and reseeded with a seed mixture suitable for the area.

Wildlife

No designated anadromous streams would be impacted. Ground disturbance and equipment noise-related impacts would include a loss of a small amount of habitat, displacement of wildlife, increased stress, and disruption of daily/seasonal behavior. Noise rather than the sight of machines appears to cause disturbance to wildlife. Typical noise levels at 15 meters (50 feet) from construction equipment range from 70 to 98 dBA. The combination of increased noise levels and human activity would likely temporarily displace some small mammals and birds that forage, feed, nest, or have dens within a 15-meter (50-foot) radius of construction noise sources. However, additional similar habitat is adjacent to the proposed fence routes. The presence of personnel operating heavy equipment and erecting the fences may cause wildlife (moose, bison, caribou, lynx, and migrating and resident birds such as the olive-sided flycatcher, northern goshawk, and harlequin duck) to avoid the area, at least temporarily. Large mammals, primarily moose, would be herded from the fenced area before enclosing the fences to ensure their safety, as well as that of personnel.

Threatened and Endangered Species

No federal or state listed threatened or endangered species have been identified at Fort Greely. Protected bird species including the recently delisted peregrine falcon, migrate through the area during the spring and fall migration periods, and therefore could potentially be disturbed by construction-related noise. However, as stated in the GMD VOC EA, there have been no confirmed sightings within 16 kilometers (10 miles) of Fort Greely; thus, no adverse impacts to threatened and endangered species are anticipated.

Environmentally Sensitive Habitat

Palustrine Emergent wetlands exist southeast of the landfill. Construction of Southern Boundary Alternative Alignment 1 would cause minor impacts to the wetland. If upgrades to the trail crossing the wetlands are necessary, the filling of about 0.4 hectare (1 acre) of wetlands would be needed and a permit from the U.S. Army Corps of Engineers would be required. Culverts would be incorporated as necessary. No other fence alignment would directly affect wetlands.

Though not likely, any indirect disturbance to wetlands by the Proposed Action would be minimized by implementing appropriate techniques to control runoff and other BMPs, such as the use of hay bales to filter sediment from storm water runoff at construction sites. Selection of Southern Boundary Alternative Alignment 1 would be the only fence alignment that would directly impact wetlands.

Overall, the impacts of constructing the various proposed fences would not have a significant adverse effect on biological resources.

Airfield Modifications

Construction impacts would be similar to those discussed above. Measures would be implemented to minimize the potential for environmental impacts as discussed below.

Vegetation

The construction clearing for the 18/36 runway extensions, turnarounds, lateral safety distances, and approach lighting would be conducted primarily in areas composed of grassland, mixed forest and deciduous/high brush. Approximately 2.8 hectares (7 acres) of grassland would be cleared for the runway extensions and turnarounds, 6.9 hectares (17 acres) for the lateral safety zones, and 6.1 hectares (15 acres) would be cleared for the approach lighting. Clearing would meet the 50:1 slope requirement from the ends of the runway. Clearing streamside vegetation would only be done to the extent necessary to provide clearing required for the approach lighting and would not involve heavy equipment. Approach lighting would extend across Jarvis Creek 1.7 hectares (4.2 acres) into Donnelly Training Area East. However, the creek floodway is composed primarily of sand and gravel deposits that are devoid of vegetation; thus, construction of the approach lighting platforms would not impact wetland vegetation. Approximately 1.9 hectares (4.7 acres) of clearing south of the runway would cross Richardson Highway into Donnelly Training Area West. No sensitive vegetation species have been identified within these proposed project areas.

The clearing for the 9/27 runway turnarounds and lateral safety zones consists of approximately 0.2 hectare (0.5 acre) and 23.9 hectares (59 acres), respectively, to total 24.1 hectares (59.5 acres) of grassland, mixed forest, and deciduous/high brush. Clearing would meet the 50:1 slope requirement from the ends of the runway. No sensitive vegetation species have been identified within these proposed project areas, which are all located on Fort Greely.

Wildlife

No designated anadromous streams would be impacted. As discussed above, ground disturbance and equipment noise-related impacts could include a loss of a small amount of habitat, displacement of wildlife, increased stress, and disruption of daily/seasonal behavior. However, additional similar habitat is adjacent to the areas of disturbance.

Threatened and Endangered Species

No federal or state listed threatened or endangered species have been identified at Fort Greely. No adverse impacts to threatened and endangered species are anticipated.

Environmentally Sensitive Habitat

Riverine Unconsolidated wetlands exist in the Jarvis Creek streambed. Therefore, the construction of approach lighting platforms in Jarvis Creek would require a wetlands permit from the U.S. Army Corps of Engineers; however, the impacts of this activity would be minor and insignificant due to the nature of the creek. The work would also be done during the low flow season.

Disturbance to Jarvis Creek would be minimized by implementing appropriate techniques and BMPs to control erosion and runoff. These efforts could include hand clearing along the bank of Jarvis creek to minimize bank erosion, stabilizing fill slopes from erosion, and using hay bales to filter sediment from storm water runoff from construction sites.

Air Control

Vegetation

Construction of the airport surveillance radar at either alternative site would require clearing of approximately 0.4 hectare (1 acre) of mixed forest and deciduous/high brush. No sensitive vegetation species have been identified within the proposed project area. Upon completion of construction, the cleared area would be graded and reseeded with a seed mixture suitable for the area. No clearing of vegetation would be required in constructing a new control tower.

Wildlife

As discussed above, construction-related noise could cause temporary displacement of wildlife in the vicinity of the radar site. However, additional similar habitat is adjacent to the areas of disturbance.

Threatened and Endangered Species

No federal or state listed threatened or endangered species have been identified at Fort Greely. No adverse impacts to threatened and endangered species are anticipated.

Environmentally Sensitive Habitat

No environmentally sensitive habitats would be affected.

4.1.3.2 Operations—Biological Resources

Security Fencing

The only operations activities related to the fences would be maintenance and upkeep of the cleared areas and fencing.

Vegetation

No impacts to vegetation from mowing and upkeep of the cleared areas are anticipated during operation of the fencing system.

Wildlife

The fencing would pose a barrier to mammals, other than small rodents, and restrict their movement into the fenced areas. The fenced areas would prevent foraging by resident mammals; however, the amount of habitat lost would be minimal and would not be expected to adversely affect local populations of these species due to the vast amount of quality habitat areas nearby. As a result, the population of small mammals could increase in these areas as the habitat quality improves over time.

Portions of Fort Greely, including the areas proposed to be fenced, have vegetation covers that make them attractive forage for moose. Management of the moose population in the Fort Greely area is of special importance to the Alaska Department of Fish and Game. Based on an average of 1.6 to 2.5 moose per 2.6 square kilometers (1 square mile) in the area (Dubois, 2002), it is estimated that the number of moose displaced as a result of each of the fence enclosures would be:

■ Cantonment Fence	2 to 3 Moose
■ Southern Boundary Fence, Preferred Alignment	4 to 6 Moose
– Southern Boundary Fence, Alternative Alignment 1	7 to 11 Moose
– Southern Boundary Fence, Alternative Alignment 2	6 to 9 Moose
– Southern Boundary Fence, Alternative Alignment 3	5 to 8 Moose
– Southern Boundary Fence, Alternative Alignment 4	4 to 6 Moose
■ Allen Army Airfield Fence	3 to 5 Moose

The Proposed Action would prevent the use of 1,422 hectares (3,515 acres) of Fort Greely for foraging. According to the Alaska Department of Fish and Game, only a third of this area (474 hectares [1,171 acres]) is considered quality moose habitat (Ihlenfeldt, 2002). Based on the average of 1.6 to 2.5 moose per 2.6 square kilometers (1 square mile), an estimated 3 to 5 moose would be displaced out of a potential 6 to 10 moose over all of the current Fort Greely area. These numbers are based on fencing of the cantonment area, the airfield, and the Preferred Southern Boundary Fence Alignment. This impact is not considered significant due to the vast amount of quality habitat areas off the installation and the potential for the burned areas outside the fences to improve as moose habitat over the next 10 to 15 years.

Birds may be attracted to the fencing for perching. This could increase the potential hazard of birds interfering with airplane traffic and causing bird fatalities; however, steps would be taken to minimize this risk as needed. Birds of prey could also potentially use the fence wires for predation.

Threatened and Endangered Species

No impacts to threatened and endangered species are anticipated during operation and maintenance of the three fences.

Environmentally Sensitive Habitat

No impacts to sensitive habitat are anticipated during operation and maintenance of the three fences.

Airfield Modifications

The only operations activities related to the airfield modifications would be maintenance and upkeep of the cleared areas and runways.

Vegetation

Cleared areas for the approach lighting would be maintained below the 50:1 slope requirement from the ends of the runway. No impacts to vegetation from mowing and upkeep of the cleared areas are anticipated during operation and maintenance of the lateral safety zones.

Wildlife

The operation and maintenance of an additional 33.6 hectares (83 acres) of grassland would not adversely impact wildlife. Mowing of these areas would only occur once or twice a year. Nighttime lighting along the approach paths could facilitate predation. It could also interfere with activities of nocturnal species within the lighted area. However, since the lights would be directed upward and a vast amount of adjacent habitat is available, the effects on wildlife would be minimal.

Birds of prey could also potentially use the fence wires for predation, especially in the area of Jarvis Creek. Birds may be attracted to the lighting structures for perching. This could also increase the potential hazard of birds interfering with airplane traffic and causing bird fatalities; however, steps would be taken to minimize the risk, as needed. Overall, the impacts of airfield modifications on birds would be minimal.

Threatened and Endangered Species

No impacts to threatened and endangered species are anticipated during operation and maintenance of the runway and approach lighting.

Environmentally Sensitive Habitat

No impacts to sensitive habitats are anticipated during operation and maintenance of the runway and approach lighting.

Air Control

Vegetation

No impacts to vegetation are anticipated due to the operation of the radar system.

Wildlife

No significant adverse impacts to wildlife resources from electromagnetic radiation are anticipated during the operation of the proposed radar since the emissions are low and the radar rotates. Neither the height of the antennas (about 30.5 meters [100 feet] above the ground) nor the electromagnetic radiation would pose a substantial threat or adverse impact to birds flying through the area. Also, the surrounding fence would prohibit larger animals from entering the site where the radar would be located, protecting them from any potential electromagnetic radiation hazards.

Threatened and Endangered Species

No impacts to threatened and endangered species are anticipated during operation and maintenance of the radar.

Environmentally Sensitive Habitat

No impacts to environmentally sensitive habitats are anticipated during operation and maintenance of the radar.

4.1.3.3 Cumulative Impacts—Biological Resources

Impacts would include increased activity during construction and the loss of a small amount of habitat at Fort Greely. Given the small amount of loss of wildlife habitat in the region of Fort Greely from past and current development, the additional loss of habitat from the proposed fences would not result in a substantial cumulative reduction in habitat. Cumulative effects from other potential activities are considered minimal due to the small size of the projects when compared to the vast amount of undeveloped land remaining on Fort Greely and in the surrounding area.

4.1.4 CULTURAL RESOURCES

This section addresses the potential for impacts to cultural resources due to construction and operation of the supplemental GMD VOC activities at Fort Greely.

Potential impacts on historic properties occur through:

- Disturbance of a National Register-listed, potentially eligible, or eligible prehistoric or historic archaeological site or traditional cultural property
- Modification of or visual intrusion upon a National Register-listed, potentially eligible, or eligible historic building or structure
- Disturbance of a paleontological site

Archaeological surveys indicate that there are no known prehistoric or historic archaeological resources within the proposed areas of ground disturbance. Much of the area is heavily disturbed from previous clearing and operational activities, and the likelihood of historic properties being present is low.

Based on a 1997 survey, the entire cantonment area, including the area around the runway, was considered clear of cultural resource concerns due to the lack of subsurface artifacts (U.S. Army Corps of Engineers, 1997).

Prehistoric and historic archaeological sites, traditional cultural properties, and/or paleontological sites do have the potential to occur. If during the course of supplemental GMD VOC activities, cultural items are discovered, activities would cease in the immediate area and the SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with the Fort Greely Environmental Procedures.

Review of the 1998 study by the Alaska SHPO and subsequent consultation between the U.S. Army and the SHPO indicate that there are 26 buildings and structures eligible for listing in the National Register. The proposed activities are not expected to affect any of these buildings.

No traditional cultural properties have been identified within the ROI or Alaska Native issues identified for the Proposed Action.

Paleontological remains have been recorded within the former Fort Greely area; however, none have been identified within the ROI. Given the topography of the site and the types of locations within which paleontological resources typically occur, the likelihood for them to be encountered during the course of the proposed activities is very low. Therefore, no effects are expected; however, should paleontological resources be discovered, the Fort Greely Environmental Procedures would be followed to protect the site and make appropriate notifications.

4.1.4.1 Construction—Cultural Resources

Security Fencing

Installing fence posts along the fence alignments has the potential to disturb unknown cultural resources. No cultural resources concerns have as yet been identified for any of the alternative routes. However, if during the course of the proposed activities, cultural items are discovered, activities would cease in the immediate area and the Alaska SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with the Fort Greely Environmental Procedures through the host installation. Subsequent actions would follow the guidance provided.

Airfield Modifications

The proposed construction activities for runways 18/36 and 9/27 would take place in areas previously disturbed during original construction and in Jarvis Creek. Due to the lack of subsurface artifacts, the entire cantonment area, including the area around the runway, has been cleared of cultural resource concerns. No impacts to cultural resources are anticipated. However, if during the course of construction cultural items are discovered, activities would cease in the immediate area and the Alaska SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with the Fort Greely Environmental Procedures. Subsequent actions would follow the guidance provided.

Air Control

Clearing activities for either radar site at the airfield has the potential to disturb unknown cultural resources. No cultural resources concerns have been identified in the proposed radar location east of the airfield. However, two known cultural resource sites exist in the vicinity of the alternative site on the knoll south of the airfield. The final siting of this alternative location would avoid these sites. If cultural items are discovered at either site during construction, activities would stop and the Alaskan SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with the Fort Greely Environmental Procedures. Subsequent actions would follow the guidance provided. Construction of a new control tower would be on an existing hardstand that was disturbed during original construction. Therefore, no impacts to cultural resources are anticipated.

4.1.4.2 Operations—Cultural Resources

Security Fencing, Airfield Modifications, and Air Control

Personnel would be informed of the sensitivity of cultural resources and the types of penalties that could be incurred if sites are damaged or destroyed. No impacts to cultural resources are anticipated during operation of the supplemental GMD VOC activities at Fort Greely. However, if during operations any cultural items are discovered, activities would cease in the immediate area and the Alaska SHPO and potentially affiliated Native Alaskan entities would be notified in accordance with the Fort Greely Environmental Procedures. Subsequent actions would follow the guidance provided.

4.1.4.3 Cumulative Impacts—Cultural Resources

No cumulative impacts are expected as a result of the proposed supplemental GMD VOC activities.

4.1.5 GEOLOGY AND SOILS

This section addresses the potential impacts to geology and soils at Fort Greely due to the proposed construction and operation of the supplemental GMD VOC activities.

4.1.5.1 Construction—Geology and Soils

Security Fencing

Impacts to geology and soils along all three potential routes would be associated with disturbance to soils during trenching and pole emplacement, which would be short-term. Construction of the security fences would require clearing and grubbing 3.7 meters (12 feet) on the outside of the fence and 9.1 meters (30 feet) on the inside. An additional 3 meters (10 feet) could be cleared to windrow debris for a maximum of 15.8 meters (52 feet).

The total disturbed area for the fencing would be approximately 25.9 hectares (64 acres). The initial GBI VOC test site activities require up to 162 hectares (400 acres). Combined with the other proposed supplemental activities, the total disturbed area is less area than was analyzed for the NMD Deployment EIS (243 hectares [600 acres]). The NMD Deployment EIS determined that there was no significant impact to geology and soils around Fort Greely resulting from similar proposed activities.

The main issue during construction is associated with soil erosion from the site. However, at Fort Greely the soils are predominantly well drained sands and gravels overlaid with a thin layer of silt, surface relief is relatively flat, and the area receives minimal annual precipitation (33 centimeters [13 inches]) and light winds; therefore, minimal soil erosion to adjacent areas would be expected. BMPs would be used to reduce the potential for soil erosion. These measures could include limiting the amount of area cleared, installing silt fences or straw bale dikes, and adding protective covering to the slopes to enhance long-term stability and reseeding with a grass mixture suitable for the area after construction ceases.

Geotechnical studies conducted in the vicinity did not discover any ice lenses or other permafrost features; therefore, no impacts to permafrost would be expected.

Airfield Modifications

Construction impacts would be similar to those discussed above. The total disturbed area resulting from the 18/36 runway extensions, turnarounds, lateral safety zones, and approach lighting construction would be approximately 15.4 hectares (38 acres). Approximately 2.8 hectares (7 acres) would be for clearing and excavation associated with the runway extension. Approximately 6.1 hectares (15 acres) would be cleared for the approach lighting. The lateral safety zones would require approximately 6.9 hectares (17 acres) to be cleared. The total disturbed area for the runway 9/27 turnarounds and lateral safety zones would be approximately 24.3 hectares (60 acres). Approximately 23.9 hectares (59 acres) would be cleared for the lateral safety zones, and 0.3 hectare (0.5 acre) would be cleared for the turnarounds. The total acreage of disturbed area for the supplemental GMD VOC activities and the initial GBI VOC test site activities is less than that of the NMD Deployment EIS, which concluded that there were no significant impacts to geology and soils.

Soil erosion from the site would be a concern during construction. Minimal soil erosion would be anticipated due to excavation for the runway extension. Along the Jarvis Creek bank, BMPs would be used to reduce the potential for soil erosion from clearing activities for the approach lights. These measures could include hand clearing along the bank of Jarvis Creek and leaving stumps to minimize bank erosion, limiting the amount of area exposed, installing silt fences or straw bale dikes, and adding protective covering to the slopes to enhance long-term stability. Construction of five approach light platforms within the banks of Jarvis Creek would require the excavation of sand and gravel to form a suitable base for the platform. Construction would be at low flow periods so that little or no soil erosion would occur.

Air Control

A total of about 0.4 hectare (1 acre) would be cleared for either radar site. Soil erosion control during construction activities would follow standard BMPs for the area. After construction, the site would be grassed with a mixture suitable for the area. Construction of a new control tower would be on an existing hardstand area.

4.1.5.2 Operations—Geology and Soils

Once construction is complete and vegetation is stabilized, there should be little soil erosion from operation of the supplemental GMD VOC activities and no impacts to geology and soils are anticipated. Maintenance clearing for the approach lighting would continue to be performed by hand to minimize ground disturbance and soil erosion.

4.1.5.3 Cumulative Impacts—Geology and Soils

No significant cumulative impacts are anticipated as a result of the construction and operation of the supplemental GMD VOC activities. Construction would include measures to reduce soil erosion on the site and to limit the extent of the erosion. Once site vegetation is restored, no long-term cumulative impacts to soils would be expected from erosion at the site. Overall, no significant cumulative impacts to geology and soils in the area are expected from construction and operation activities at Fort Greely.

4.1.6 HAZARDOUS MATERIALS AND WASTE

This section addresses potential environmental impacts that could result from the storage and use of hazardous materials and the generation and disposal of hazardous waste associated with construction and operation of the supplemental GMD VOC activities on Fort Greely. It also addresses potential impacts to ongoing IRP activities.

4.1.6.1 Construction—Hazardous Materials and Waste

Security Fencing, Airfield Modifications, and Air Control

Construction activities would be centralized to the greatest extent possible and would occur at the project sites and on specified construction laydown areas and access roads. Temporary storage tanks and other facilities for the storage of hazardous materials would be located in protected and controlled areas designed to comply with site-specific spill prevention and countermeasure plans. Fort Greely's *Reporting and Responding to Spills Procedures* and the contractor's SWPPP would also be implemented.

Hazardous wastes generated during construction would consist of materials such as motor fuels, heating fuels, paint, used acetone and paint thinner, waste oils, hydraulic fluids, cleaning solvent, cutting fluids, used batteries, and waste antifreeze. These hazardous materials would be containerized and properly disposed of by the individual contractors in accordance with federal and state laws and regulations. Construction of the security fencing, runway extension, approach lighting, radar, and control tower would be expected to require and generate smaller quantities as compared to the GBI VOC activities and those considered in the NMD Deployment EIS. Nevertheless, there would be a small increase in the amount of hazardous waste generated on the installation.

Any spill or discovery of a hazardous material or hazardous waste during construction would be quickly reported and remediated in accordance with Spill Notification and Response component of the Fort Greely Environmental Procedures and the contractor's SWPPP and Project Spill Prevention, Control, and Countermeasure Plan. These procedures identify the appropriate points of contact to report an incident. All hazardous materials used and hazardous waste generated during construction would be handled in accordance with the Fort Greely Environmental Procedures, as well as applicable federal, state, and local regulations. (U.S. Army Space and Missile Defense Command, 2002b)

No hazardous waste treatment or disposal would occur at Fort Greely.

Fort Greely is preparing a Pollution Prevention Plan that is scheduled to be completed and implemented in fiscal year 2003.

The supplemental GMD VOC activities on Fort Greely are not anticipated to impact ongoing cleanup efforts. However, prior to beginning construction, activities would be coordinated with appropriate installation personnel and state regulators to minimize impacts to remediation efforts and program activities. In addition, construction contractors would be notified of known ground contamination before construction so appropriate health and safety measures could be taken to avoid human contact with any contaminated areas.

Modifications to the existing control tower would consider the potential presence of lead-based paint and asbestos. If present, all activities would be performed in accordance with the Fort Greely Environmental Procedures. There would not be any supplemental GMD VOC activities that would involve polychlorinated biphenyls or radon.

4.1.6.2 Operations—Hazardous Materials and Waste

Security Fencing, Airfield Modification, and Air Control

No significant hazardous material and waste impacts are expected from normal operations and maintenance activities of the proposed actions. Deicing fluids would be captured in a sump and collected for disposal. Use of bio-friendly deicing fluids is anticipated to potentially eliminate the creation of hazardous wastes. Any hazardous waste resulting from deicing activities would be easily handled through the existing hazardous waste disposal contract for Fort Greely.

4.1.6.3 Cumulative Impacts—Hazardous Materials and Waste

The construction and operation of the supplemental GMD VOC activities at Fort Greely, in combination with ongoing installation activities and future installation reuse activities, would result in an increase in the amounts of hazardous materials used and hazardous waste generated on Fort Greely. It is not anticipated that Fort Greely would return to its pre-installation realignment status as a large quantity generator of hazardous waste. Fort Greely has the mechanisms and management systems in place to store and manage the increased quantity of hazardous materials and hazardous waste. Overall, it is not expected that there would be any cumulative hazardous materials or hazardous waste management issues at Fort Greely.

4.1.7 HEALTH AND SAFETY

This section addresses the potential impacts to health and safety associated with construction and operation of the supplemental GMD VOC activities on Fort Greely. Impacts related to the potential for personnel exposure to radiological hazards are presented below. No significant impacts are anticipated with regard to chemical, biological, or physical hazards, other than may be routinely encountered during typical construction activities. Compliance with applicable laws, regulations, and Fort Greely procedures, would minimize health and safety hazards to personnel.

4.1.7.1 Construction—Health and Safety

Security Fencing

Design of the airfield fence would have to consider the Allen Army Airfield clear zones and requisite setback requirements. The proposed alignment avoids the clear zones.

The construction of new facilities is routinely accomplished for both military and civilian operations and presents only occupational-related effects on the safety and health of workers involved in the performance of construction activity. Construction materials would be delivered to the site by truck in accordance with U.S. Department of Transportation and Fort Greely regulations. Construction would be conducted in accordance with applicable regulations and permits and no impacts to health and safety are anticipated.

Airfield Modifications

Construction impacts would be similar to those discussed above. Appropriate procedures would be followed to ensure safety during the intermittent use of the airfield. Construction activities in Jarvis Creek would only occur during low flow periods. No impacts to health and safety are anticipated.

Air Control

Impacts from construction of the radar would be similar to those discussed above. No impacts to health and safety are anticipated.

4.1.7.2 Operations—Health and Safety

Security Fencing

The purpose in constructing the security fences is to provide force protection and program safety. The security fences, with the required clear zone of 9.1 meters (30 feet) on the inside and 3.7 meters (12 feet) on the outside of each fence, would enhance the safety of Fort Greely personnel. However, birds attracted to the fence for perching could increase the potential for interference with airplane traffic. Steps would be taken to ensure that the risk to airplane traffic due to potential bird strikes is minimal prior to takeoffs and landings.

Because the fire station is located near the proposed main gate to the cantonment area, the proposed fencing would not cause an impact to emergency personnel response time to most locations on Fort Greely. To reach the southern portion where the GBI VOC test site is located, as well as the airfield area, the same routes that are currently used would still be used if the fences are erected. Location and operation of gates would be such that emergency crews would be capable of expeditiously passing through in emergencies.

Airfield Modifications

The extension of the runway to provide overruns for aircraft and the installation of approach lighting to aid in navigation would provide a safer airfield during operations. Birds may be attracted to the lighting structures for perching. This may increase the potential for bird strikes by aircraft; however, this risk is considered minimal. The current level of fire protection services at Fort Greely is considered adequate to provide coverage of mission activities at Allen Army Airfield. Designation of hotspots and associated safety setback distances on runways 18/36 and 6/24 would not impact any inhabited buildings.

Air Control

Class D airspace designation and accompanying operational requirements would provide increased safety for flight operations for all airspace users.

Operation of an airport surveillance radar would generate electric and magnetic fields, including radio frequency radiation (RFR). Although the analysis below addresses the ASR-11 radar, another similar type radar could be used. The radar would be similar to those commonly used at airports nationwide. During operations, the radar is constantly rotating 360 degrees. The RFR generated by the ASR-11 would only be hazardous at close ranges, while the radar is operating. The area immediately below the radar would be in the spillover region, and would be

hazardous to humans while the radar is operating. The facility would be sited a sufficient distance from occupied buildings and recreational areas so that the radar operation would not pose a RFR hazard to personnel within the general vicinity of the radar site. To advise personnel in the area of the RFR hazard at close ranges, signs would be posted at the perimeter of the radar facility warning against approaching the antenna while it is in operation. There would be no RFR generated from the antenna, and therefore no RFR hazard, when the antenna is not in operation.

Since the ASR-11 would be mounted on a tower about 30.5 meters (100 feet) in height, persons at ground level would not be exposed to RFR levels exceeding the maximum permissible exposure standards. Since the closest occupied building at Allen Army Airfield is over 305 meters (1,000 feet) away from the proposed radar location, no impacts to nearby receptors are anticipated. At all locations near the radar, the ASR-11 signal would comply with the guideline levels for occupational exposure. As a precautionary measure, signs would be posted at the perimeter of the radar facility advising personnel and the public against approaching the radar facility during operation. (Federal Aviation Administration, 1997)

On infrequent occasions, the ASR-11 antenna would remain stationary and transmit a signal for maintenance and testing purposes. This type of operation is expected to occur no more than once every several months. In maintenance mode, the ASR-11 signal would be directed at a fixed location above the horizon for up to several minutes at a time. Because the beam would be stationary, average power densities would be higher than during normal operation. However, since the closest occupied building to the proposed site would be more than 305 meters (1,000 feet) away, no adverse impacts are anticipated.

4.1.7.3 Cumulative Impacts—Health and Safety

Potential negative cumulative health and safety impacts are not expected to occur at Fort Greely from the proposed activities. Some of the proposed activities would improve the health and safety of personnel.

4.1.8 INFRASTRUCTURE

This section addresses the potential for impacts to infrastructure due to the proposed construction and operation of the supplemental GMD VOC activities.

Fort Greely has been realigned and therefore the number of personnel assigned to Fort Greely has been reduced. This has resulted in a loss of approximately 700 personnel. This reduction in the number of personnel has resulted in an increase in available utility capacities. The combination of GMD VOC test site construction and operation activities have resulted in an increase of approximately 200 personnel, but excess utility capacity remains. The supplemental activities would further increase the personnel to approximately 275. Therefore, there would be sufficient utility capacity in the ROI and on the installation to handle the proposed activities.

4.1.8.1 Construction—Infrastructure

Solid Waste

The supplemental GMD VOC activities at Fort Greely would result in a small amount of construction debris being generated during construction activities. There is adequate landfill capacity to handle the increase in disposal needs, and thus, a minimal impact on solid waste disposal capacity.

Water

The existing potable water system at Fort Greely has sufficient available capacity to handle the water demands for construction activities; thus, no impacts are expected. This would include site watering and any batch plants, as well as for personnel. Nonpotable water may be used from Jarvis Creek for construction activities.

Wastewater

The only wastewater increase would be primarily from project management personnel living in housing on the installation. Portable wastewater facilities would be used for construction workers during the workday. The increase in wastewater generation would be well within the available capacity.

Electricity

Electricity would be provided by Golden Valley Electric Association. The existing airfield lighting vault and concrete encased duct bank would accommodate future lighting controls and electrical loads. The electrical service would be extended from the runway lighting to the approach lighting. The existing airfield control tower would be modified and fitted with the necessary surveillance equipment. The tower would be tied into the ASR-11 radar. About 610 meters (2,000 feet) of trenching would be needed to connect the radar facility to power (hard and emergency) and to the control tower. Similar activities would also be required if a new control tower is constructed. Adequate electrical power would be available for the approach lighting system and the radar, so there would be no adverse impacts on the electrical system.

Traffic

Erection of fencing would restrict vehicular access to the enclosed areas. During peak hours, minor delays could be encountered entering the security gates. This congestion would not affect off-post traffic and would only have a minimal effect to on-post traffic.

East-west access through Fort Greely for Donnelly Training Range personnel would be affected. The cantonment fence would not affect their routes. Southern Boundary Alternatives 1, 3, and 4 would include fencing that crosses Firebreak Road, their main east-west route between the east and west ranges. To maintain access for range personnel with these alternatives, the trail at the southern boundary could require clearing and upgrading to meet training requirements. Alternatives 2 and 5 would allow Firebreak Road to remain accessible. The airfield fence would preclude access to the range personnel, requiring them to detour to the north or south.

An existing unpaved access road would be used to access the radar site from the airfield taxiway. Overall, the impacts to traffic by the construction activities would be minimal.

Other Issues

Southern Boundary Fence Alternatives 1 and 2 are located along East Post Road. A dilapidated, abandoned Quonset hut is located along the road within the proposed buffer area. Therefore, the hut would require removal if one of those alternatives is chosen.

Construction, such as that for the chain link security fences, the runway extension, approach lighting, radar, and control tower, is routinely accomplished for both military and civilian operations. Institutional Controls, Excavation Clearances Procedures (U.S. Army Space and Missile Defense Command, 2002b) would be implemented to identify and avoid existing utilities during intrusive construction. These activities would include digging for fence pole or lighting structure installation and excavation for runway construction. During construction of the fences along the western boundary of Fort Greely, special care would be taken to avoid adverse impacts to the Trans-Alaska pipeline and the associated right-of-way. A Right-of-Way Use Guideline would be obtained from Alyeska Pipeline Services Company as needed for construction activities parallel to the pipeline.

No significant adverse impacts to infrastructure are anticipated due to fencing, airfield modifications, or air control activities.

4.1.8.2 Operations—Infrastructure

Security Fencing, Airfield Modifications, and Air Control

Operation of the supplemental GMD VOC activities is not expected to result in significant impacts to infrastructure at Fort Greely. Water, wastewater, and solid waste demands would increase minimally for the increased number of personnel to operate the control tower and manage the contracts. Electrical demands would increase minimally to operate the approach lighting, the control tower, and radar.

4.1.8.3 Cumulative Impacts—Infrastructure

The construction and operation of the supplemental GMD VOC activities would not exceed any of the operational capabilities of the existing infrastructure system and no cumulative impacts are expected.

4.1.9 LAND USE

This section addresses the potential impacts to regional and installation land use due to the construction and operation of the supplemental GMD VOC activities on Fort Greely.

4.1.9.1 Construction—Land Use

Security Fencing

The construction of security fencing would be consistent with other functions at Fort Greely. The proposed fencing would take place around the Main Cantonment Area; around the Southern Boundary area, which includes the GBI VOC test bed; and around the Allen Army Airfield. Adjacent land use and zoning is compatible with activities on Fort Greely. The surrounding training lands are primarily used as a non-firing maneuver area, air drops, training,

and troop maneuvers. All of the construction areas fall within the boundaries of Fort Greely and therefore have no conflicts with adjacent land uses or zoning. The land cover in the areas to be cleared would change from primarily mixed forest to grassland.

The Trans-Alaska pipeline right-of-way must be considered when constructing the fence on the western side adjacent to the pipeline. The right-of-way extends 12.8 meters (42 feet) east from the centerline of the pipeline. Clearing for the fence in this area would start at the edge of the right-of-way and extend eastward about 15.8 meters (52 feet) feet. Every attempt would be made to avoid the pipeline right-of-way; however, if access is required or additional clearing within the right-of-way is necessary, a Right-of-Way Use Guideline would be obtained from the Alyeska Pipeline Service Company to access the pipeline right-of-way.

There are no inhabited structures close to the construction sites. The closest inhabited structures, other than military, are in Delta Junction. Construction would not impact the use of Fort Greely by the U.S. Army as a test bed under the command of USASMDC. Donnelly Training Areas East and West would remain in use for troop training.

The airfield fence would not change any existing land uses and would take into account airfield safety and clear zones.

Airfield Modifications

Construction of the runway extension would be consistent with the existing land use at the airfield. Any modifications to the safety and clear zones would be within the confines of the airfield and would not affect adjacent land uses.

Construction of the approach lighting would require clearing at the north and south ends of the 18/36 runway. The north end approach lighting would extend into and across Jarvis Creek to Donnelly Training Area East, which is under the control of USARAK. A wetlands permit from the U.S. Army Corps of Engineers would have to be acquired for construction of light stands in the creek. The south end approach lighting would extend west of Richardson Highway to Donnelly Training Area West, also under the control of USARAK. The land on Donnelly Training Area is heavily forested and would require an agreement with USARAK to access, clear, construct, and operate the lights. Approximately 1.7 hectares (4.2 acres) would be cleared on Donnelly East and 1.9 hectares (4.7 acres) on Donnelly West. The conversion of these areas to a cleared state would not prevent the area from being used for troop training; however, the type of training may be altered to prevent damage to the approach lights. Overall, the impacts to the Donnelly Training Areas would be minimal.

Air Control

The construction of either radar alternative and the control tower would be consistent with other functions at Fort Greely. An area of approximately 0.4 hectare (1 acre) of mixed forest land would be cleared to grassland for the radar. All of the construction areas fall within the boundaries of Fort Greely and therefore have no conflicts with adjacent land uses or zoning.

4.1.9.2 Operations—Land Use

Security Fencing

The security fencing would not affect any of the existing facilities at Fort Greely or any of the surrounding land uses. In most areas, the fencing would be buffered from the public by trees, which would minimize the potential visual impacts. Unauthorized public access to Fort Greely is not permissible due to security concerns. There would be a loss of land used for recreational activities due to activation of the security fencing; however, the unfenced areas of Fort Greely would remain as natural areas. No hunting is currently permitted on Fort Greely property. There would be no impact on subsistence uses of Fort Greely.

Airfield Modifications

Operations of the runway extension would not affect any of the existing facilities at Fort Greely. The approach lighting structures may minimally affect visual aesthetics if they are visible from Richardson Highway. However, it would impact only a small portion of the forested boundary as viewed by the public. The operation of the approach lighting could change the use of the cleared area surrounding the light structures on Donnelly Training Area East and West. But the overall impact of the change in training use would be minimal to the training mission at Donnelly Training Area.

Air Control

The operation of the radar and control tower would not affect any of the existing facilities at Fort Greely or any of the surrounding land uses. The operation of both of these facilities would be consistent with existing land use at the airfield. Its remote location would eliminate a concern for visual aesthetics.

4.1.9.3 Cumulative Impacts—Land Use

Construction and operation of the supplemental GMD VOC activities would further limit access to Fort Greely by the general public. However, the area is designated for military use and is currently used to conduct military activities. It would create no zoning or land use conflicts. A small portion of Fort Greely would remain accessible from Donnelly Training Area. An agreement would be required for the use of land on Donnelly Training Area for approach lighting as well as the use of Fort Greely roads for training activities by various tactical units. Overall, the cumulative impacts to land use would be minor and insignificant. No other projects have been identified by Fort Greely that would contribute to cumulative land use impacts.

4.1.10 NOISE

This section addresses the potential impacts to the noise environment due to the construction and operation of the supplemental GMD VOC activities on Fort Greely.

4.1.10.1 Construction—Noise

Security Fencing, Airfield Modifications, and Air Control

Noise from construction equipment usually falls in the range of 70 dBA to 98 dBA at 15 meters (50 feet) from the source. Earth moving equipment is known to produce dBA readings in this range.

Construction could take place 24 hours per day during the summer months. Therefore, due to the 10 dBA penalty added to nighttime noise, the 65 dBA and 75 dBA contours are estimated to occur within approximately 1.9 kilometers (1.2 miles) and 0.8 kilometer (0.5 mile) from the construction site, respectively. However, since no noise sensitive receptors are known to exist within 1.9 kilometers (1.2 miles) of the proposed construction locations at Fort Greely, no impacts to the noise environment would be expected from construction equipment noise.

4.1.10.2 Operations—Noise

Security Fencing, Airfield Modifications, and Air Control

Operation of the supplemental GMD VOC activities is not expected to result in any adverse noise impacts near Fort Greely. The proposed use of the installation, including aircraft landings, would be less than when Fort Greely was a fully operational installation.

4.1.10.3 Cumulative Impacts—Noise

As no noise sensitive receptors have been identified in the vicinity of the construction areas, no cumulative impacts to the noise environment are anticipated.

4.1.11 SOCIOECONOMICS

This section addresses the potential impacts to regional socioeconomics due to construction and operation of the supplemental GMD VOC activities at Fort Greely.

4.1.11.1 Construction—Socioeconomics

Security Fencing, Airfield Modifications, and Air Control

Population

Supplemental GMD VOC construction would take approximately 3 to 6 months and employ between 10 and 35 construction personnel for each of the proposed activities. All of the construction would take place during the summer construction season, with the first activity being initiated in 2003, and depending on funding, could take place over several years. It is expected that many of the construction workers would move to the area on a temporary basis from outside the region. Fairbanks, the nearest community of any size, had just over 1,800 construction workers in 1996 but, with this exception, there is no major local pool of labor.

In previous projects at Fort Greely, about 70 percent of construction workers relocate to the area from outside of Alaska. However, for the proposed construction activities, which are relatively routine in nature, much of the labor force would likely come from the Fairbanks and Anchorage areas.

This project would not be expected to attract dependents. However, those bringing dependents with them for previous projects at Fort Greely have typically housed them in Fairbanks or Anchorage. The increased demand for temporary housing and hotel rooms in the Delta Junction area would likely aggravate the existing housing shortage. This condition is considered minor and short-term since the housing market will adjust to the demand over time.

Employment Income and Retail Impacts

The construction program would generate additional income in the local economy in two ways. The first is in the form of wages earned by the construction workers. A proportion of these wages would be spent locally on lodging, food, and transportation. Second, the construction program would include a proportion of locally purchased materials. These purchases, at local stores and from local suppliers, would generate additional income and jobs within the local economy.

While some non-contract jobs might be created in the communities surrounding Fort Greely, the majority would be in Fairbanks and Anchorage where much of the expenditure would be made.

The impact of construction program expenditures on retailers would be almost entirely concentrated in Fairbanks, as there are few retail outlets in the communities surrounding Fort Greely.

It is anticipated that the fence construction would be contracted to a local native Alaskan company. Each fence (cantonment, southern boundary, and airfield) would require 1 to 2 crews of 8 to 10 people each for a period of about 3 to 6 months during the summer construction season. Additionally, the contractor would be provided the option to salvage the timber as it is cleared.

The construction of the fence, while located adjacent to the Trans-Alaska pipeline on the western side of Fort Greely, would not adversely impact the operations of the Alyeska Pipeline Services Company.

Construction of the runway extension and the approach lighting would employ a crew of approximately 20 to 25 people over the course of a 4- to 6-month summer construction season.

Impacts on Housing, Education, and Health

Temporary housing is nearing short supply in the Fort Greely area. Most construction workers who have been involved in past projects at Fort Greely have been accommodated at the installation or have commuted from Fairbanks. Some have found housing in the surrounding communities of Delta Junction and Big Delta. Fort Greely has unaccompanied housing units available as a result of the recent realignment and associated decrease in the number of personnel employed at the installation. Additionally, an administrative mancamp may be established for Fort Greely that would provide living and dining facilities for 200 personnel. If construction contractors elect to house their workers in part by leasing or purchasing existing housing stock, the rental or purchase rate for housing may temporarily increase, which would be a beneficial impact to the local economy.

Primary emergency care would be provided to the construction personnel at the reopened health facility on Fort Greely. The hospital network in Fairbanks would deal with the more serious and longer-term care needs of the construction workers, as they arise. The medical facilities in Fairbanks are adequate to handle the increased demand.

It would not be expected that any additional enrollment in the local school districts would result from the construction activities.

Fiscal Impacts

The main fiscal impact arising from the construction phase would be as a result of purchases made by personnel. Negative fiscal impacts arising from construction activities would be limited to the potential for increased demands on the public safety services of fire, police, and ambulance.

4.1.11.2 Operations—Socioeconomics

Security Fencing, Airfield Modifications, and Air Control

Population, Employment Income, and Retail Impacts

The operational phase of the supplemental GMD VOC activities could result in employing up to 5 to 10 contract security personnel, potentially from the local area. Up to 11 full time personnel, most likely from outside of the local area, would be needed to staff the control tower at Fort Greely.

Impacts on Housing, Education, and Health

Although temporary housing off-post is limited, Fort Greely has unaccompanied housing available to operational personnel, as described for construction activities. The Delta Greely School District owns a school (Building 725) on 6 hectares (15 acres) of land leased from the U.S. Army in the cantonment area. It is not currently in use, with the exception of the gymnasium on an intermittent basis. Only a small number of accompanied personnel are anticipated to relocate to the area. Therefore, there would be a minimal addition to the enrollment at local schools. The Fort Greely swimming pool in Building 503 was closed during Base Realignment. Impacts to medical facilities would be similar to those described for construction activities. Installation of the cantonment fence would require special security arrangements for the public to access Fort Greely. However, this is considered to be a minor impact on the community.

4.1.11.3 Cumulative Impacts—Socioeconomics

The construction and operation of the supplemental GMD VOC activities at Fort Greely would have a positive cumulative economic impact. Combined with the socioeconomic benefits from the other GBI VOC test site activities, it would slightly mitigate the negative economic impact of Base Realignment activities.

4.1.12 WATER RESOURCES

This section addresses the potential impacts to water resources due to construction and operation of the supplemental GMD VOC activities on Fort Greely.

4.1.12.1 Construction—Water Resources

Security Fencing

Approximately 25.9 hectares (64 acres) of land would be disturbed during the construction of all three security fences, including the Preferred Southern Boundary Alignment. Windrows would be located to minimize impacts to surface drainage. Due to the relatively level topography and low precipitation, drainage patterns would only be altered slightly, and surface water runoff and erosion would be minimal. The cleared areas would be vegetated and no impervious areas would be constructed. Disturbance to stream channels, drainage patterns, and stream banks would be minimized to the extent practicable. A minor increase in sediment in surface waters is possible, but not likely due to the distance between the construction site and surface water bodies. BMPs would be used to reduce the potential for soil erosion into water resources from all fencing activities. These measures could include limiting the amount of area exposed, installing silt fences or straw bale dikes, and adding protective covering to the slopes to enhance long-term stability. Once construction is complete and vegetation is stabilized, there should be little soil erosion from operation of the site. A sediment erosion control plan would be prepared if needed and would address each of the measures. Minimal impacts to water resources during the site preparation activities are anticipated to occur from the proposed construction of the fences.

Potential impacts to water resources resulting from accidental spills of hazardous materials during construction would be minimized because all activities would follow Fort Greely's Environmental Procedures (U.S. Army Space and Missile Defense Command, 2002b), including the Spill Prevention, Control, and Countermeasures Plan and emergency response procedures.

Since construction would result in the disturbance of more than 2 hectares (5 acres) of land the activities would be subject to federal NPDES stormwater permitting requirements. The permitting process would involve coordination with both the EPA and the ADEC.

A minimal increase in water usage during construction would not impact the water supply aquifers and surface water sources at Fort Greely.

Airfield Modifications and Air Control

Construction impacts for the runway extensions, turnarounds, upgrades, control tower, approach lighting, and radar would be similar to those discussed above. The same measures would be employed to handle potential soil erosion. The same Spill Prevention, Control, and Countermeasures and emergency response procedures, as well as NPDES permitting requirements, would be implemented. A slight increase in water usage during construction would not impact the water supply aquifers and surface water sources at Fort Greely.

On the north extension, the approach lights would need to cross Jarvis Creek (four or five lights) a short distance into Donnelly Training Area East (two to three lights). For lights in or over the creek, construction of the approach light platforms would be conducted during the low-flow

season. A permit from the U.S. Army Corps of Engineers issued under section 404 of the Clean Water Act would be required. The lighting platforms would require construction that would withstand peak river flows and ice jams.

4.1.12.2 Operations—Water Resources

Security Fencing, Airfield Modifications, and Air Control

Once construction and landscaping is complete, there would be a low potential for erosion from the runway extensions, runway upgrades, and associated lateral clearing activities, since all cleared areas would be grassed. Deicing areas would be sloped to prevent deicing fluids from reaching surface water areas. A significant increase in stormwater runoff is not expected since the soils in the area are well-drained and the annual precipitation is low. Design of the approach lighting system would consider the strength of the support structures to withstand strong flows in Jarvis Creek, as well as ice jams. The radar site would be grassed after construction to control erosion and runoff. The impacts to water resources are expected to be minimal.

4.1.12.3 Cumulative Impacts—Water Resources

Increase in runoff and impacts to water quality levels would be minimal and no other future programs have been identified that when combined with the Proposed Action would contribute to cumulative water resources impacts. Upgrades to the stormwater collection system as part of airfield repairs were considered in the initial GMD VOC EA. BMPs discussed included storm water control measures such as retention areas, and constructed wetlands or ponds to contain runoff from the impervious areas. The specific BMPs to be implemented would be determined during design.

4.1.13 ENVIRONMENTAL JUSTICE

This section addresses the potential environmental justice impacts due to construction and operation of the supplemental GMD VOC activities at Fort Greely.

An environmental justice impact would be a long-term health, environmental, cultural, or economic effect that has a disproportionately high and adverse effect on a nearby minority or low-income population. Environmental justice concerns could be triggered where:

- The percentage of persons in low-income or minority populations in the census area meaningfully exceeds the percentage in the regions of comparison
- The percentage of low-income or minority population in the census area exceeds 50 percent
- The proposed activities would result in substantial adverse effects to one or both of the above populations

4.1.13.1 Construction and Operations—Environmental Justice

Potential environmental justice impacts at Fort Greely were addressed in the Alaska Army Lands Withdrawal Renewal Final Legislative EIS, the NMD Deployment EIS, and the GMD VOC EA, which concluded that there would be no disproportionately high and adverse environmental or human health effects on low-income or minority populations. Some of the contracts for construction would likely be awarded to Native Alaskan 8(a) (small and disadvantaged minority) firms.

4.1.13.2 Cumulative Impacts—Environmental Justice

No other projects or activities in the region have been identified that would contribute to potential cumulative environmental justice impacts.

4.2 CUMULATIVE IMPACTS

The following discussion summarizes the potential for cumulative impacts for supplemental GMD VOC activities at Fort Greely.

Emissions from mobile sources during construction would add cumulatively to emissions from other traffic sources in the area, but these emissions would be temporary and are not anticipated to result in a measurable impact to air quality within the ROI. The cumulative impacts of adding Class D airspace control would improve the air safety in the area. Biological impacts would include the loss of a small amount of habitat at Fort Greely, including moose habitat. Given the small amount of loss of wildlife habitat in the region of Fort Greely from past and current development and the vast amount of undeveloped land in the area, the additional loss of habitat from the proposed fences and airfield modifications would not result in a substantial cumulative reduction in habitat. Construction would include measures to reduce soil erosion on the site and to limit the extent of the erosion. Once site vegetation is restored, no long-term cumulative impacts to soils would be expected from erosion at the site. Overall, no cumulative impacts to geology and soils in the area are expected from construction and operation at Fort Greely.

The construction and operation of the supplemental GMD VOC activities at Fort Greely, in combination with ongoing Installation activities and future reuse activities, would result in an increase in the amounts of hazardous materials used and hazardous waste generated on Fort Greely. However, Fort Greely has the mechanisms and management systems in place to store and manage the increased quantity of hazardous materials and hazardous waste. Overall, it is not expected that there would be any cumulative hazardous materials or hazardous waste management issues at Fort Greely.

Potential negative cumulative health and safety impacts are not expected to occur at Fort Greely with the combination of the proposed activities and ongoing health and safety risk from current military activities. The proposed activities would provide safety improvements. The construction and operation of the supplemental GMD VOC activities would not exceed any of the operational capabilities of the existing infrastructure system and no cumulative impacts are expected. As no noise sensitive receptors have been identified in the vicinity of the

construction areas, no cumulative impacts to the noise environment are anticipated. The construction and operation of the supplemental GMD VOC activities at Fort Greely would have a positive cumulative economic impact. Combined with the socioeconomic benefits from the other GBI VOC test site activities, it would slightly mitigate the negative economic impact of the Base Realignment. An increase in runoff and water quality levels would be minimal and no other future programs have been identified that when combined with the Proposed Action would contribute to cumulative water resources impacts.

4.3 ENVIRONMENTAL CONSEQUENCES OF THE NO ACTION ALTERNATIVE

If the No-action Alternative is selected, no environmental consequences associated with the supplemental GMD VOC activities would occur. Present Fort Greely and GBI VOC test site activities would continue with no change in current operations and without the benefits of the supplemental GMD VOC actions, including the positive safety impacts of enhanced security for personnel and improved airfield conditions. The environmental consequences of the current GMD VOC activities were evaluated in the VOC EA and determined not to result in significant environmental effects to any resource area.

4.4 ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Adverse environmental effects that cannot be avoided include the release of small amounts of pollutants into the atmosphere; minor noise impacts on wildlife and reduction in habitats; short-term impact to vegetation from construction activities; minor increased generation of hazardous materials; minor increased stormwater runoff and soil erosion during construction; and increased noise levels at program-related sites. However, through implementation of the program actions and BMPs described in chapter 2.0, these effects would be minimized. Overall, no significant individual or cumulative adverse environmental impacts are anticipated to result from the Proposed Action.

4.5 CONFLICTS WITH FEDERAL, STATE, AND LOCAL LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AREA CONCERNED

All of the proposed program activities would take place in existing facilities or locations on a DoD installation dedicated to training and testing activities. These activities would not alter the uses of the sites, which were in the past or currently are used to support training and testing activities. However, potential new training and testing areas within the range boundaries could be developed. No conflicts with land use plans, policies, and controls are anticipated.

4.6 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Anticipated energy requirements of the supplemental GMD VOC activities would be well within the energy supply capacity of all facilities. Energy requirements would be subject to any established energy conservation practices at each facility, in accordance with Army Regulation 11-27, *Army Energy Program* and applicable Executive Orders.

4.7 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed activities would result in no loss of threatened or endangered species, and no loss of cultural resources, such as archaeological or historic sites. Moreover, there would be no changes in land use or preclusion of development of underground mineral resources that were not already precluded.

The amount of materials required for any program-related activities and energy used during the project would be small. Although the proposed activities would result in some irreversible or irretrievable commitment of resources such as various metallic materials, fossil fuels, minerals, and labor, this commitment of resources is not significantly different from that necessary for many other defense research and development programs carried out over the past several years. Proposed activities would not commit natural resources in significant quantities.

4.8 RELATIONSHIP BETWEEN SHORT-TERM USE OF THE HUMAN ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Proposed supplemental GMD VOC activities would take advantage of existing facilities and infrastructure. The proposed upgrades to these facilities or locations would not alter the uses of the sites. Therefore, the Proposed Action does not eliminate any options for future use of the locations under consideration.

4.9 NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL

Other than various structural materials and fuels, the program would require no significant natural or depletable resources. Salvage of timber during the construction activities would be an option to the contractor.

4.10 FEDERAL ACTIONS TO ADDRESS PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS (EXECUTIVE ORDER 13045)

This EA has not identified any environmental health and safety risks that may disproportionately affect children, in compliance with Executive Order 13045.

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Anchorage AK

Mr. Bentley Mark, Sr., President
Native Village of Tetlin (IRA)
Tetlin AK

Ms. Margaret Mathews
Tanana Chiefs Conference
Fairbanks AK

Mr. Leo Morgan
Executive Director
Kuskokwim Native Association
Aniak AK

Ms. Veronica Nicholas
President
Native Village of Cantwell
Cantwell AK

Mr. Hjalmar Olson
President and CEO
Bristol Bay Native Corporation
Anchorage AK

Ms. Gloria O'Neill
Acting Executive Director
Cook Inlet Tribal Council, Inc.
Anchorage AK

Mr. Moses Paul
Chief
Nenana Native Association
Nenana AK

Mr. John Regitano, Executive Director
Fairbanks Native Association
Fairbanks AK

Mr. Berkman Silas, Chief
Native Village of Minto (IRA)
Minto AK

Ms. Rita Stevens
President
Kodiak Area Native Association
Kodiak AK

Ms. Nellie Vale, Director
Yakutat Native Association
Yakutat AK

OTHER

Alaska

Alaska Action Center
Anchorage AK

Alaska Public Interest Research Group
Anchorage AK

Mr. Joel Bennett
Alaska Representative
Defenders of Wildlife
Alaska Office
Juneau AK

Mr. Ross Coen
Wilderness Campaign Coordinator
Northern Alaska Environmental Center
Fairbanks AK

Ms. Janet Daniels
Military Toxics Project
Anchorage AK

Delta Greely Community Coalition
Delta Junction AK

Ms. Melanie Duchin
GreenPeace Alaska
Anchorage AK

Mr. Steven Haagenson
Golden Valley Electric Assn
Fairbanks AK

Ms. Sally Kabisch
Field Representative
Sierra Club Alaska Field Office
Anchorage AK

Kodiak Rocket Launch Information Group
Kodiak AK

B. Long
Global Issues
Talkeetna AK

Ms. Pamela Miller
Alaska Community Action on Toxics
Anchorage AK

No Nukes North: Alaskan & Circumpolar
Coalition Against Missile Defense
Fairbanks AK

Mr. Ross Oliver
Alyeska Pipeline Service Co
Pump Station 09
Anchorage AK

Mr. Allen E. Smith
The Wilderness Society
Anchorage AK

Ms. Ann Winter
Institute of the North
Anchorage AK

Florida

Mr. Bruce K. Gagnon
Global Network
Gainesville FL

Hawaii

Mr. Michael Jones
University of Hawaii
Department of Physics and Astronomy
Honolulu HI

Massachusetts

Richard and Sharon Judge
Cape Cod Coalition to Decommission
PAVE PAWS
Sandwich MA

Mashpee Environmental Coalition
Mashpee MA

Texas

Mr. Richard Albanese
San Antonio TX

Virginia

Carmen Digiandomenico
Stafford VA

Washington, DC

Mr. David Adelman
Natural Resources Defense Counsel
Washington DC

Greenpeace Inc.
Washington DC

Physicians for Social Responsibility
Washington DC

Mr. Daryl G. Kimball
Coalition to Reduce Nuclear Dangers
Washington DC

Ms. Ellen Thomas
Proposition One Committee

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APPENDIX B

CORRESPONDENCE



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Alaska Regional Coordinator
Native American Fish and Wildlife Society
707 A Street
Anchorage, AK 99501

To Whom It May Concern:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Rick Albright
U.S. Environmental Protection Agency
Alaska Operations Office
222 West Seventh Avenue, No. 19
Anchorage, AK 99513-7588

Dear Mr. Albright:

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Ground-Based Midcourse Defense

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DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Greg Ballogh
U.S. Fish and Wildlife Service
Anchorage Ecological Services Office
605 W 4th Avenue, Room G62
Anchorage, AK 99501

Dear Mr. Ballogh:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Robert D. Barbee, Regional Director
U.S. Department of the Interior
National Park Service
AK Area Field Office
2525 Gambel Street, Room 107
Anchorage, AK 99503-2892

Dear Mr. Barbee:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Chuck Bell, State Conservationist
U.S. Department of Agriculture
Natural Resource Conservation Service
Alaska State Office
949 East 36th Street Avenue, Suite 400
Anchorage, AK 99508-4302

Dear Mr. Bell:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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Ground-Based Midcourse Defense

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As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Ms. Judith E. Bittner
State Historic Preservation Officer
Alaska Department of Natural Resources
Office of History and Archaeology
Division of Parks and Outdoor Recreation
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501

Dear Ms. Bittner:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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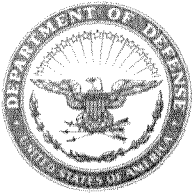
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Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Ms. Michele Brown, Commissioner
Alaska Department of Environmental Conservation
401 Willoughby Avenue, Suite 105
Juneau, AK 99801-1795

Dear Ms. Brown:

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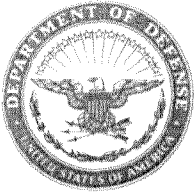
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Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Samuel Demientieff
Fairbanks Agency, Bureau of Indian Affairs
Federal Building & Courthouse
101 12th Avenue, Box 16
Fairbanks, AK 99701

Dear Mr. Demientieff:

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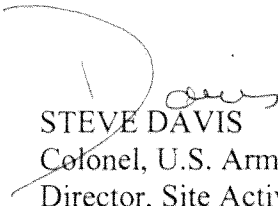
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Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Gary Forman
U.S. Bureau of Land Management
1150 University Avenue
Fairbanks, AK 99709

Dear Mr. Forman:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
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GROUND-BASED MIDCOURSE DEFENSE
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Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Clarence Goward
FAA, Alaska
ATTN: AAL536
222 West Seventh Avenue
Anchorage, AK 99513

Dear Mr. Goward:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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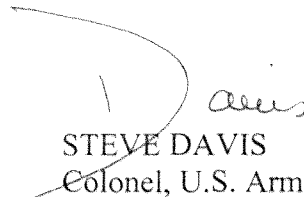
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If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

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As stated

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

From: Clarence Goward

Sent: Friday, November 08, 2002 4:04 PM

To: Kenneth Sims

Subject: Comments on GMD VOC

Kenneth,

I have reviewed the coordinating draft of the Ground-Based Midcourse Defense Validation of Operational Concept Supplemental Environmental Assessment (SEA) and have only a few comments, which are listed below.

In regards to the extension of the main runway -- It is not clear from the SEA why the runway extension is required.

Changes in fleet mix over existing routes can increase noise exposure and require environmental documentation.

Procedural changes that create new or alter existing flight tracks or altitudes may change or increase noise exposure and require environmental documentation.

New or revised air traffic control procedures which routinely route air traffic over noise sensitive areas at less than 3,000 feet above ground level normally require an environmental assessment.

If procedure/flight track changes are needed or anticipated as a result of this action, the impacts should be addressed in the SEA.

In regards to the reactivation of the control tower.

Allen Army Airfield does not meet the FAA establishment criteria for an Airport Traffic Control Tower.

Anchorage ARTCC currently provides air traffic control services within the region of influence (ROI). The SEA mentions the installation of an ASR-11, or similar type radar, to provide radar coverage below 2,500 feet. Included, would be a remote display to Anchorage ARTCC. This display would provide Anchorage ARTCC with the ability to provide the necessary air traffic control services to IFR and participating VFR aircraft within the ROI.

Our Air Traffic Mission does not require an airport traffic control tower at this location. FAA staffing of this facility would require funding support (approx. \$1,200,000 annually) from the organization requiring this service.

In regards to the modification of the airspace from Class E to Class D.

This type of action is normally categorically excluded from environmental documentation beyond the preliminary environmental review. It is, however, subject to a review of extraordinary circumstances. The extraordinary circumstances review areas appear to be adequately covered in the SEA, with one possible exception. I did not see specific mention of impacts to the use of public property under section 4(f) of the Department of Transportation Act (remodified as 49 USC 303).

There is a rulemaking process required for this action which invites public comments.

I hope the comments are helpful. Please call if you have questions
(Embedded image moved to file: pic02971.gif)

From: "Sims, Kenneth R Mr USASMDC"
To: "Edd Joy, "Robert Harward (E-mail)"
Date: 10/23/02 2:12PM
Subject: FW: VOC SEA Coordinating Draft

I've talked with MSG Sumpter and his comment 2 should be "Class D to Class E" instead of vice versa. I see no problem with these comments.

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

From: Clarence Sumpter, FAA
Sent: Tuesday, October 22, 2002 12:52 PM
To: Sims, Kenneth R Mr USASMDC
Subject: Re: VOC SEA Coordinating Draft

Hi Kenneth,

These are some items I noticed that you may want to change or take another look at on your document.

(See attached file: EA 2028 GBD.doc)

Regards
MSG Sumpter

						Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM)	DATE
TO: (Forward to proponent of publication or form) (Include Zip Code)						FROM: (Activity and location) (Include Zip Code)	
PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SCSM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER						DATE	TITLE
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO.	FIGURE NO.	TABLE No.	RECOMMENDED CHANGES AND REASON <i>(Provide exact wording of recommended changes, if possible).</i>	
1	Es-4		16,17			Airspace- The proposed action would require a change in airspace definition and control from class E to class D. This should say to add class D to the airspace, the class E would remain in place.	
2	2-8	2.1.2	33,34,35			Implementing of air control measures at Allen Army Airfield to include a change from Class E to Class D controlled airspace, reactivation of the control tower, and installation and use of an ASR-11 or similar type of airport surveillance radar. Change to, Implementing controlled airspace at Allen Army Airfield to include adding Class D to the Class E airspace, (all else remains the same)	
3	Es-3		5			Reactivation of Allen Army Airfield control tower would be key to positive control of FT. Greely airspace. Change to; Reactivation of Allen Army Airfield control tower would be key to controlling FT. Greely airspace	
4	2-13	2.1.2	35,36			Reactivation of Allen Army Airfield control tower would be key to positive control of FT. Greely airspace. Change to; Reactivation of Allen Army Airfield control tower would be key to control of FT. Greely airspace.	
5	3-7	3.1.2	19, 20			Airport radio communications are at very high frequency (VHF). The control tower frequency is 122.9. The control tower does not have any frequencies, 122.9 is a common traffic advisory frequency (CTAF), it is used for transiting aircraft to self announce their intentions as they pass through the area or enter the traffic pattern for landing, The tower does not maintain any frequencies if it has been closed as Allen has. New frequencies will have to be requested.	
6	3-7	3.1.2	35, 36, 37,			The majority of the civilian north and south traffic is limited to an existing Military Operations Area flight corridor (Buffalo MOAXB) that overflies the Richardson Highway, which parallels Ft. Greely and thus passes almost over Allen Army Airfield. The majority of the civilian north and south traffic is limited to 2 existing flight corridors (Richardson Highway VFR corridor and the Alaskan Highway VFR corridor) that overlie the Richardson Highway and Alaskan HWY, which parallels Ft. Greely on the East and West and thus passes almost over Allen Army Airfield.	



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Ms. Jeanne L. Hanson
Field Office Supervisor for Habitat Conservation
U.S. Department of Commerce
National Marine Fisheries Service
222 West Seventh Avenue, No. 43
Anchorage, AK 99513-7577

Dear Ms. Hanson:

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Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
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MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
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P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Kevin Harun, Executive Director
Alaska Center for the Environment
519 West 8th Avenue
Anchorage, AK 99501

Dear Mr. Harun:

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JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Jeff Hughes
Alaska Department of Fish and Game
Division of Wildlife Conservation, Region 2
333 Raspberry Road
Anchorage, AK 99518-1599

Dear Mr. Hughes:

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Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Albert Kahklen
Anchorage Agency
Bureau of Indian Affairs
1675 C Street
Anchorage, AK 99501

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MISSILE DEFENSE AGENCY
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P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Ronald G. King
Chief, Alaska Department of Environmental Conservation
Division of Air and Water Quality
Air Quality Improvement Section
610 University Avenue
Fairbanks, AK 99709-3643

Dear Mr. King:

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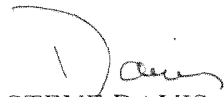
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GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
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GMW

October 8, 2002

Ms. Maureen McCrea
Alaska Office of Management and Budget
Division of Governmental Coordination
240 Main St Ste 500
Juneau, AK 99811-0030

Dear Ms. McCrea:

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Please review this information and provide comments no later than November 8, 2002 to Commander, U. S. Army Space and Missile Defense Command, ATTN: SMDC-EN-V (Mr. Kenneth Sims), P.O. Box 1500, Huntsville, AL 35807-3801, by facsimile 256-955-5074, or by e-mail to kenneth.sims@smdc.army.mil.

If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. William D. McGee
Regional Environmental Supervisor
Alaska Department of Environmental Conservation
610 University Avenue
Fairbanks, AK 99501

Dear Mr. McGee:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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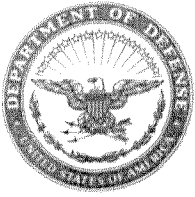
If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Ervin McIntosh, Field Supervisor
U.S. Department of the Interior
U.S. Fish and Wildlife Service
Ecological Service/Fairbanks
101-12th Avenue
Fairbanks, AK 997011-6267

Dear Mr. McIntosh:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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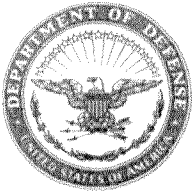
If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Leo Morgan
Executive Director
Alaska Native Health Board
4201 Tudor Centre Drive #105
Anchorage, AK 99508

Dear Mr. Morgan:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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Sincerely,



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DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Dick Mylius
Division of Mining, Land and Water
Department of Natural Resources
550 W. 7th Ave., Suite 1070
Anchorage, AK 99501-3579

Dear Mr. Mylius:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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Enclosure:
As stated



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MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Ross Oliver
Ms. Hillary Schaefer
Alyeska Pipeline Service Company
1835 South Bragaw Street
Pump Station 09
Anchorage, AK 99512

Dear Mr. Oliver/Ms. Schaefer:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated

From: Oliver, Ross C.
Sent: Friday, November 08, 2002 8:41 PM
To: Kenneth Sims
Cc: Badger, Phil C.; Schaefer, Hillary; Richey, Alan C
Subject: Ft. Greeley NMDS Fencing Environmental Review

We at Alyeska Pump Station 9 have reviewed the Supplemental Environmental Assessment regarding the construction of security fences, among other items around the new National Missile Defense Site.

We have had some discussion on this and basically find no problem with the proposed fencing paralleling our right of way. One possible issue which we discussed would be in the event that we needed to dig up our pipe in this area. Sometimes a temporary land use permit from the adjacent land owner is required because of the large size of the excavation limits needed to access our buried pipe. There is a remote possibility that in this event we would need to coordinate with the Army in this area to temporarily take down the fence in a limited local area and erect temporary fencing which would allow the required access for heavy equipment to excavate our pipe. Since the pipe is shallow burial in this area we feel that we can probably perform the required excavations without disturbing the proposed fence, although this possibility does exist.

Therefore, the bottom line is we feel that this fence would have no impact on our operation although there is a remote possibility of some coordinated effort in the future to work with the Army to temporarily accommodate a pipe excavation. Does this sound like something that could be accommodated if need be?

Thank you very much,
Ross Oliver

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

From: Nagel, Peter C.
Sent: Friday, November 22, 2002 2:26 PM
To: 'Sims, Kenneth R Mr USASMDC'

Ken:

Thank you for your note below and your recent efforts to coordinate with Alyeska Pipeline Service Company on the subject matter. On behalf of its owner companies, this email response indicates Alyeska's concurrence with your proposal to construct a fence as described in the Supplemental Environmental Assessment of 10/9/02 which will be situated parallel to and easterly of and setback approximately twelve (12) feet from the easterly TAPS right-of-way boundary at the referenced location.

This concurrence, which includes the performance of brushing as needed by USDOD within the easterly portion of the TAPS right-of-way, is subject to:

1. USDOD's agreement to coordinate "in-TAPS-ROW" brushing with the TAPS Pump Station 9 Maintenance Coordinator, and
2. Alyeska's right, as needed and with case-by-case USDOD and USBLM permission, to temporarily relocate portions of the fence in order to conduct TAPS excavations necessary for maintenance of the buried pipeline.

Please call me if you have any questions on this important matter.

Peter Nagel, SR/WA
Land and Right-Of-Way
Alyeska Pipeline Service Company, Agent

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

From: Sims, Kenneth R Mr USASMDC
Sent: Tuesday, November 19, 2002 8:22 AM
To: Nagel, Peter C.
Subject: VOC SEA

Peter:

I have discussed your set-back proposal here and we will design the fences to be 12 feet east from the existing pipeline right-of-way. Please concur with this and the fact that we may also have to do a little extra clearing of vegetation from your right-of-way. Also, please give me your mailing address and phone number again. -- Ken



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Alvin G. Ott
Regional Supervisor
Alaska Department of Fish and Game, Region III
Habitat Protection Division
1300 College Road
Fairbanks, AK 99701-1599

Dear Mr. Ott:

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If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated

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

From: Nancy Ihlenfeldt-Mcnay
Sent: Wednesday, November 06, 2002 1:38 PM
To: Kenneth Sims

Dear Mr. Sims:

The Alaska Department of Fish and Game (ADF&G), Habitat and Restoration Division (Fairbanks, AK) and Wildlife Conservation Division (Delta Junction, AK) have reviewed the Supplemental Environmental Assessment for the Ground-Based Midcourse Defense Validation of Operational Concept at Fort Greely, AK and have the following comments:

Page 2-13, Lines 11-15. Depending on the type and placement of the platforms constructed for the approach lights in or over Jarvis Creek, a Fish Habitat Permit (A.S. 16.05.840) may be required from the ADF&G. Jarvis Creek is known to support resident fish (e.g., Arctic grayling) so fish passage up and downstream must be maintained at all water levels.

Page 3-9, Lines 30-31. Other big game species possibly occurring within the Fort Greely area includes black bear, grizzly bear, and wolf. These species are listed as predators (Page 3-11, Lines 1-2), but are considered big game by ADF&G regulations, which has economic implications in addition to wildlife implications.

Page 3-9, Lines 36-37. The actual 2001 moose population estimate for Unit 20D is 4,956-6,704 rather than the estimate of 9,012-14,082 listed in text. The discrepancy occurs due to variations in habitat quality and thus density of moose, with Ft. Greely having higher than average quality and densities.

Page 3-11, Lines 2-3. Lynx and wolf should also be added to the list of species trapped for fur.

Page 3-11, Line 3-5. The implication is that most of the Ft. Greely area is "developed" and thus has low wildlife importance. In fact, much of the developed area still provides habitat for a wide variety of species other than those species listed, including resident moose.

Page 4-7, Line 20-21. I concur that removing large mammals from the fenced area will be important and will take a coordinated effort between ADF&G and the US Army. The Army should be prepared to provide potentially large numbers of personnel and equipment to herd animals from the enclosures before they are permanently closed.

Page 4-9, Lines 29-34. I agree that the proposed action will have little impact on the overall moose population in the area. However, the loss of habitat can be mitigated by rejuvenating habitat near Ft. Greely. The area to be fenced is approximately 3,521 acres. If 1/3 of the area is moose habitat (~1,173 acres), this loss of habitat could be mitigated by hydro-axing comparable acres in the 1987 Granite Creek burn along 33-mile Loop Road. Moose habitat quality in this burn is starting to decline in

quality.

If you have any questions regarding the comments above, please call me at 907-459-7287 or Steve Dubois at 907-895-4484.

Thank you for the opportunity to comment,

Nancy Ihlenfeldt

Habitat Biologist

ADF&G



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Steven Pennoyer, Regional Administrator
U.S. Department of Commerce
National Marine Fisheries Service
Alaska Regional Office
709 West 9th
Juneau, AK 99802-1668

Dear Mr. Pennoyer:

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If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated

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

From: Lawrence R. Peltz

Sent: Monday, November 04, 2002 5:38 PM

To: Kenneth Sims

Subject: Environmental Assessment Review

Mr. Sims,

As a representative of the National Marine Fisheries Service (NMFS), I have reviewed the Ground-Based Midcourse Defense (GMD) Validation of Operational Concept (VOC) Supplemental Environmental Assessment . The proposed construction will have no impact on anadromous fish streams or Essential Fish Habitat. Consequently, the NMFS has no comment on this proposed project. Please feel free to contact me if you need further clarification. Thank you.



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Ms. Mary Siroky
Alaska Department of Environmental
Conservation
410 Willoughby
Juneau, AK 99801

Dear Ms. Siroky:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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If you have any questions, please contact Mr. Kenneth Sims at 256-955-1113.

Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. John Stone
Chief, Alaska Department of
Environmental Conservation
Division of Air and Water Quality
Air Quality Maintenance Section
610 University Avenue
Fairbanks, AK 99709-1795

Dear Mr. Stone:

In compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the U. S. Army Space and Missile Defense Command (USASMDC), on behalf of the Missile Defense Agency's (MDA's) Ground-Based Midcourse Defense (GMD) Joint Program Office (JPO), is preparing the GMD Validation of Operational Concept (VOC) Supplemental Environmental Assessment (SEA).

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Enclosure:
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DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Lance Trasky
Division of Habitat and Restoration
Southcentral Regional Supervisor
333 Raspberry Rd.
Anchorage, AK 99518-1599

Dear Mr. Trasky:

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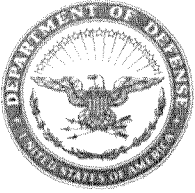
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Sincerely,



STEVE DAVIS
Colonel, U.S. Army
Director, Site Activation World Wide
Ground-Based Midcourse Defense

Enclosure:
As stated



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

U.S. Department of Interior
Alaska Maritime National Wildlife
Refuge
2355 Kachemak Bay Drive, Suite 101
Homer, AK 99603

To Whom It May Concern:

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MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Ms. Nancy Welch, Regional Manager
Alaska Department of Natural Resources
Division of Land and Water Management
Northern Regional Office
3700 Airport Way
Fairbanks, AK 99709-4699

Dear Ms. Welch:

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DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
GROUND-BASED MIDCOURSE DEFENSE
JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Curt Wilson
U.S. Bureau of Land Management
222 West Seventh Avenue
Anchorage, AK 99513

Dear Mr. Wilson:

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MISSILE DEFENSE AGENCY
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JOINT PROGRAM OFFICE

P.O. Box 1500
Huntsville, AL 35807-3801

GMW

October 8, 2002

Mr. Everett Robinson Wilson
U.S. Fish and Wildlife Service
Aleutian Ecological Services, Region 7
1101 East Tudor Road
Anchorage, AK 99503

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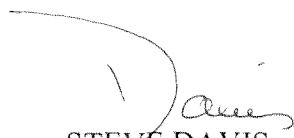
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