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

Supplemental Environmental Assessment

12 December 2002

U.S. Army Space and Missile Defense Command
P.O. Box 1500
Huntsville, Alabama 35807-3801

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

REPLY TO
ATTENTION OF

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,

for 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.

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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.

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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

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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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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 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 GMD is designed to protect all 50 states against limited ballistic missile attack by intercepting long-range ballistic missiles during the midcourse (ballistic) phase of their flight, before their reentry into the earth's atmosphere. The MDA completed the NMD Deployment Environmental Impact Statement (EIS) in July 2000 to support a future missile defense deployment decision. Following reviews directed by the current Bush Administration, the MDA re-focused the GMD from near-term deployment to an effort that would provide operationally realistic testing.

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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

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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
$L_{eq(1\ hour)}$	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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