Fort Greely

Emergency Services

Integrated Wildland Fire Management Plan

Department of the Army
USAG Fort Greely
Fort Greely, AK
28 June 2012

UNCLASSIFIED

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HISTORY. This Integrated Wildland Fire Management Plan (IWFMP) has been established for USAG Fort Greely, AK.

SUMMARY. This IWFMP outlines the various fire prevention requirements for all activities Civilian, military, tenants, and training units on Fort Greely.

APPLICABILITY. This regulation is applicable to all activities on Fort Greely. All civilian, military, tenants, and training units will comply with this regulation. No activity is exempt from this regulation.

PROPONENT EXCEPTION AUTHORITY. The Proponent of the Fort Greely Integrated Wildland Fire Management Plan is DES Fire & Emergency Services Division. Requests for additional copies of this regulation should be directed to: Directorate of Emergency Services, Fire & Emergency Services Division (IMFG-ESF), Bldg. 504 First Street, Fort Greely, AK 99731

SUPPLEMENTATION. Supplementation of this publication is prohibited without prior approval from the proponent.

SUGGESTED IMPROVEMENTS. The proponent agency for this circular is DES, Fire & Emergency Services Division, Fort Greely. Send comments or suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to DES, Fire & Emergency Services Division, (IMFG-ESF), PO BOX 31149, Fort Greely, AK 99731-1249.

OFFICIAL:

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Commanding

UNCLASSIFIED

DEPARTMENT OF THE ARMY
UNITED STATES ARMY GARRISON FORT GREELY
UNITED STATES ARMY INSTALLATION MANAGEMENT COMMAND

FORT GREELY, AK 99737

United States Army Garrison Integrated Wildland Fire Management Plan

Fire and Emergency Services

Organizations supplementing this regulation which exceeds minimum requirements or that prepare Standing Operating Procedures (SOP's) relating to the Wildland Fire Management Plan will provide one copy of each supplement and/or SOP to the Fire & Emergency Services (F&ES) Division, ATTN: IMFG-ESF.

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CHAPTER 1
ADMINISTRATION

1-1. Executive Summary

Forest and wildland fire management is extremely important in order protect lives, infrastructure, installation and personal property and to maintain the mission of Fort Greely.
Fort Greely is located 5 miles south of Delta Junction, Alaska and is about 100 miles southeast of Fairbanks. The garrison sits on approximately 6,800 acres and is shown in Figure 1-1. Jarvis Creek bounds the area to the east and north, the Richardson Highway lays to the west and the Cold Regions Test Centers, Mobility Test Complex is to the south.

Fort Greely, Alaska, is home of the United States Army Garrison Fort Greely, AK (USAG Fort Greely) and Ground-Based Midcourse Missile Defense; 49th Missile Defense Battalion; 59th Signal Battalion; Cold Regions Test Center; U.S. Army Alaska; U.S. Army Corps of Engineers; Army and Air Force Exchange Service; Defense Commissary Agency; Delta/Greely School District; U.S. Post Office; and by Inter-Service Support Agreement (ISSA), the Northern Warfare Training Center.

Fort Greely is comprised of approximately 6,800 acres with 44.7% of that acreage being comprised of improved lands, with little to no vegetation. Open broadleaf stands of varying mixes of paper birch, quaking aspen, and balsam poplar are the dominant classes, consisting of 1,262.4 acres. The second most common classes are those that represent closed mixed stands of white spruce, birch, and aspen. These classes comprise 424.4 acres.

USAG Fort Greely's service area includes over 700 buildings, many of which are in an urban interface zone. The Strategic Missile Defense Complex houses several sensitive buildings and other related infrastructures while employing a defensible barrier space the installation is completely surrounded on all sides by high fire hazard vegetation.

USAG Fort Greely does not occupy any lands used for live fire or maneuver training.
All live fire combat exercise training takes place on USAG-AK lands.
However, due to the close proximity USAG-AK's mission can cause impacts to the environment by increasing the number and frequency of fire starts in an area. Prescribed burns or actual fire starts can pose a smoke management problem to USAG Fort Greely and with the right conditions could threaten USAG Fort Greely.

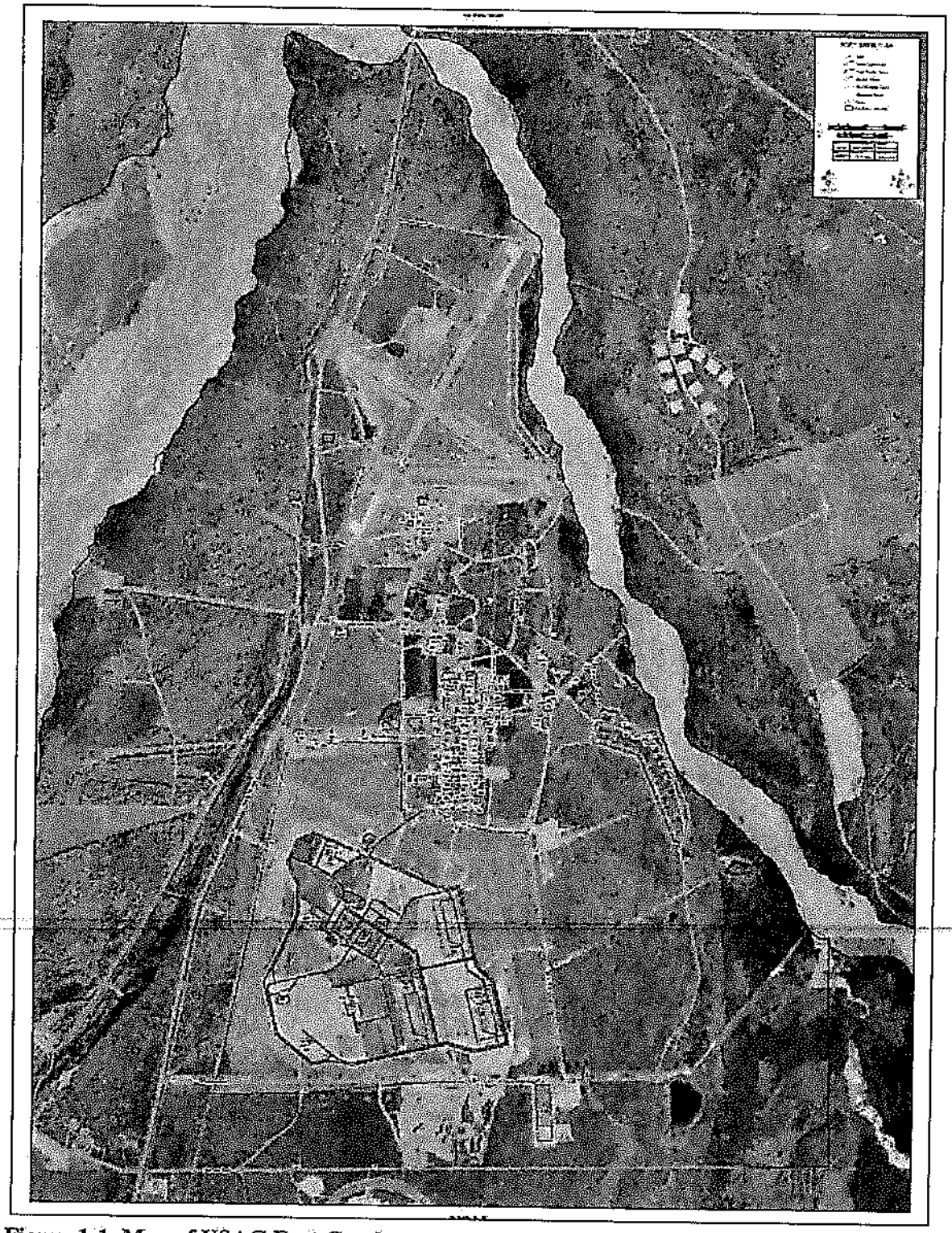

Figure 1-1. Map of USAG Fort Greely

1-2. Introduction

This component of the Integrated Natural Resource Management Plan (INRMP) serves as the USAG Fort Greely Integrated Wildland Fire Management Plan. This Integrated Wildland Fire Management Plan reduces wildfire potential, effectively protects and enhances valuable natural and cultural resources, integrates applicable state and local permit and reporting requirements.

As a component of the INRMP, it will be reviewed and updated annually and revised at a minimum once every five years. The Integrated Wildland Fire Management Plan directly supports USAG Fort Greely missions and is consistent with USAG Fort Greely's emergency operations plans while being integrated into the INRMP, the USAG Fort Greely's fire and emergency services plan, and the Integrated Cultural Resources Management Plan (ICRMP).

The management of fire on the landscape is consistent with ecosystem management principles and is required by the Sikes Act and Army Regulation 200-1. Development of an Integrated Wildland Fire Management Plan is also required by the Fort Greely Resource Management Plan mandated by Public Law 106-65, the Military Lands Withdrawal Act. Additional direction regarding fire management comes from the Memorandum of Understanding between the Bureau of Land Management and USAG-AK concerning the Management of Certain Public Lands Withdrawn for Military Use and the Interdepartmental Support Agreements LAI 03 0001 with the Bureau of Land Management.

In addition this IWFMP addresses and responds to the following laws, plans, policies, and standards adopted by the Army:

a. Federal Wildland Fire Management Policy, 1 January 1995

b. National Wildfire Coordinating Group (NWCG) Wildland and Prescribed Fire Qualification System Guide (PMS 310- 1/NFES 1414), January 2000

c. National Fire Protection Association (NFPA) Standards:

(1) Standard 295 *Standard for wildfire control*

(2) Standard 299 *Protection of life and property from wildfire*

(3) Standard 1051 *Wildland firefighter professional qualification standard*

(4) Standard 1977 *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*

d. Department of Defense (DOD) Instruction 6055.6, 10 October 2000, DoD Fire and Emergency Services Program

e. National Environmental Policy Act of 1969 (NEPA), as amended

f. U.S. Fish and Wildlife Service, 23 August 2002

g. U.S. Army Garrison Fort Greely Integrated Natural Resources Management Plan 2007-2011

h. U.S. Army Garrison Fort Greely Integrated Cultural Resources Management Plan 2011-2015

i. Clean Air Act (1990)
j. National Historic Preservation Act of 1966 (NHPA), as amended
k. Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66; 42 U.S.C. 1856a)
l. Federal Land Policy and Management Act of 1976 (90 Stat. 2743)

m. Federal Grant and Cooperative Agreement Act of 1977 (P.L. 95-224, as amended by P.L. 97-258, September 13, 1982 (96 Stat. 1003; 31 U.S.C. 6301 thru 6308))
n. Supplemental Appropriation Act of Sept 10, 1982 (96 Stat. 837)
o. Wildfire Suppression Assistance Act of 1989 (P.L. 100-428, as amended by P.L. 101-11, April 7, 1989)

1-3. Purpose

This Integrated Wildland Fire Management Plan provides the planning framework for all fire management decision-making and specifies the uses of fire, which are consistent with and can enhance land management objectives. This document provides guidance and direction to establish an effective wildland fire management program that fulfills the Army's requirement for an Integrated Wildland Fire Management Plan and supports the Alaska Interagency Fire Management Plan. This document identifies responsibilities and standard practices for fuels management, pre-suppression, prevention, and suppression while supporting military preparedness along with United States Department of the Interior, Bureau of Land Management and USAG Fort Greely's resource management goals.

1-4. Goals and Objectives

1.4.1 Protect life as the highest priority.
- *a.* Provide for the safety of army personnel, dependents, employees, visitors, and fire staff.
- *b.* Maintain a qualified and properly trained fire staff.
- *c.* Reduce fuels that threaten high-use areas.

1.4.2 Protect installation and personal property.
- *a.* Reduce fuels that threaten high-value areas.
- *b.* Coordinate structural and wildland fire operations.

1.4.3 Control wildfires through suppression activities.
- *a.* Report wildfires.
- *b.* Conduct initial response.
- *c.* Coordinate with Alaska Fire Service during fire fighting operations.

1.4.4 Manage fire to benefit natural resources.
- *a.* Allow fire to be a dynamic ecosystem process.
- *b.* Use of fire as a land management tool in the prevention of wildfires as needed.
- *c.* Minimize adverse effects of fire and suppression activities on natural resources.

1.4.5 Compliance
- *a.* Establish fire management qualifications for all firefighters and fire managers.

1-5. Scope

This Integrated Wildland Fire Management Plan covers all lands administered by USAG Fort Greely in the state of Alaska, to include Fort Greely Main Post. Army Wildland Fire Management Policy directs that the Integrated Wildland Fire Management Plan must include goals and objectives, organizational structure and responsibilities, interagency cooperation and mutual aid agreements, smoke management and air quality, safety and emergency operations, risk assessment/decision analysis processes, wildland fire history, natural and cultural resource considerations, mission considerations, wildland fuel factors, monitoring requirements, public relations, funding requirements, personnel training and certification standards, opportunities for maintenance of current knowledge on the science of fire and fire management and to take advantage of new technology, and programmatic environmental assessment.

1-6. Fire History

Wildland Fires are and have always been an active threat to Fort Greely. USAG Fort Greely sits in the middle of a forest of spruce and hardwoods and in June 1999 the largest fire to threaten Fort Greely made its run north. The Donnelly Flats fire burned approximately 18,000 acres and threatened Fort Greely and Delta Junction. Pushed by 50 mile per hour winds on the evening of June 13th, 1999 Fort Greely was evacuated as a wall of flames entered the post on its southwest perimeter.

Preplanning in the mid 1990's reduced standing, dead and undergrowth forming a defensible space to the south of the housing area. These actions were certainly significant in the fact that only one structure was lost and six others received only minor damage. See Fire History Map Figure 1-6

1-7. Interagency Cooperation and Mutual Aid Agreements

USAG Fort Greely has maintained an interagency agreement with Bureau of Land Management (BLM) (Appendix B) that covers all fire management activities. Mutual aid agreements with local fire departments provide sharing of resources for fire suppression activities (Appendix B). The Alaska Fire Service (AFS) also has a Reciprocal Fire Management Agreement with the State of Alaska's Department of Natural Resources, Division of Forestry (Alaska Fire Service and State of Alaska 1998). Under this agreement, the agencies have implemented a coordinated fire suppression effort and have identified areas where each agency has agreed to provide wildland fire suppression, regardless of whether the lands are under state or federal ownership.

1-8. USAG Fort Greely Directorate of Emergency Services

The USAG Fort Greely Directorate of Emergency Services Fire Department is responsible for providing detection, initial response, and fire fighting on USAG Fort Greely lands. The Directorate of Emergency Services Fire Department also provides fire fighting services for initial response on USAG-AK's range lands; Donnelly Training Area, see figure 1-8.

1-9. National Interagency Fire Center

Following proper coordination with the Office of the Deputy Chief of Staff, G-3, military assistance (both military and civilian personnel) may be furnished to the National Interagency Fire Center in national fire emergencies pursuant to the Memorandum of Understanding between the Department of Defense and The Departments of Agriculture and the Interior dated 1975.

Support to National Interagency Fire Center is reimbursable under the Economy Act. Local area assistance included in existing agreements may be authorized by the Garrison Commander.

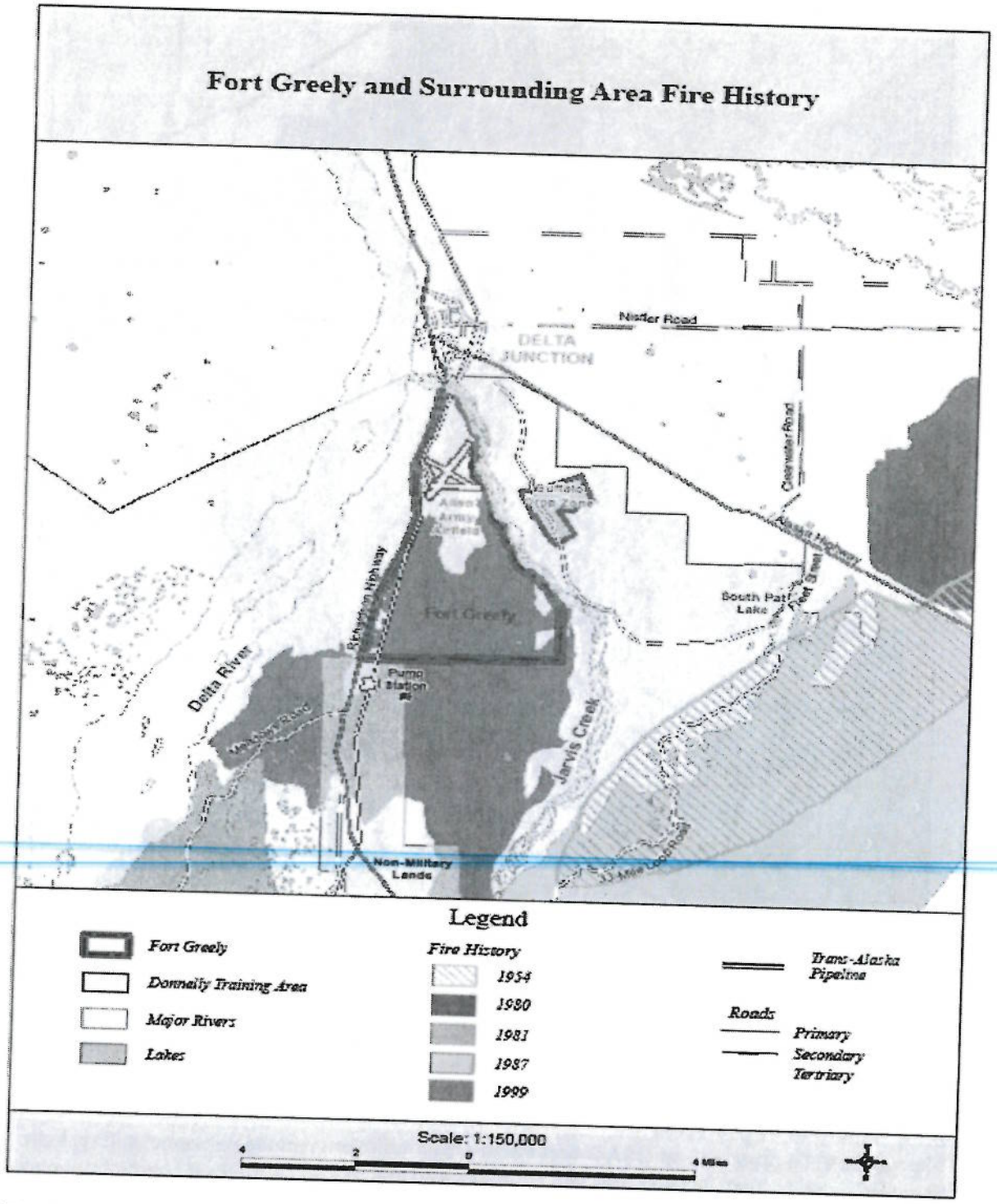

Fig. 1-6 Fire History Map For Fort Greely and Surrounding Areas 1954 -2005

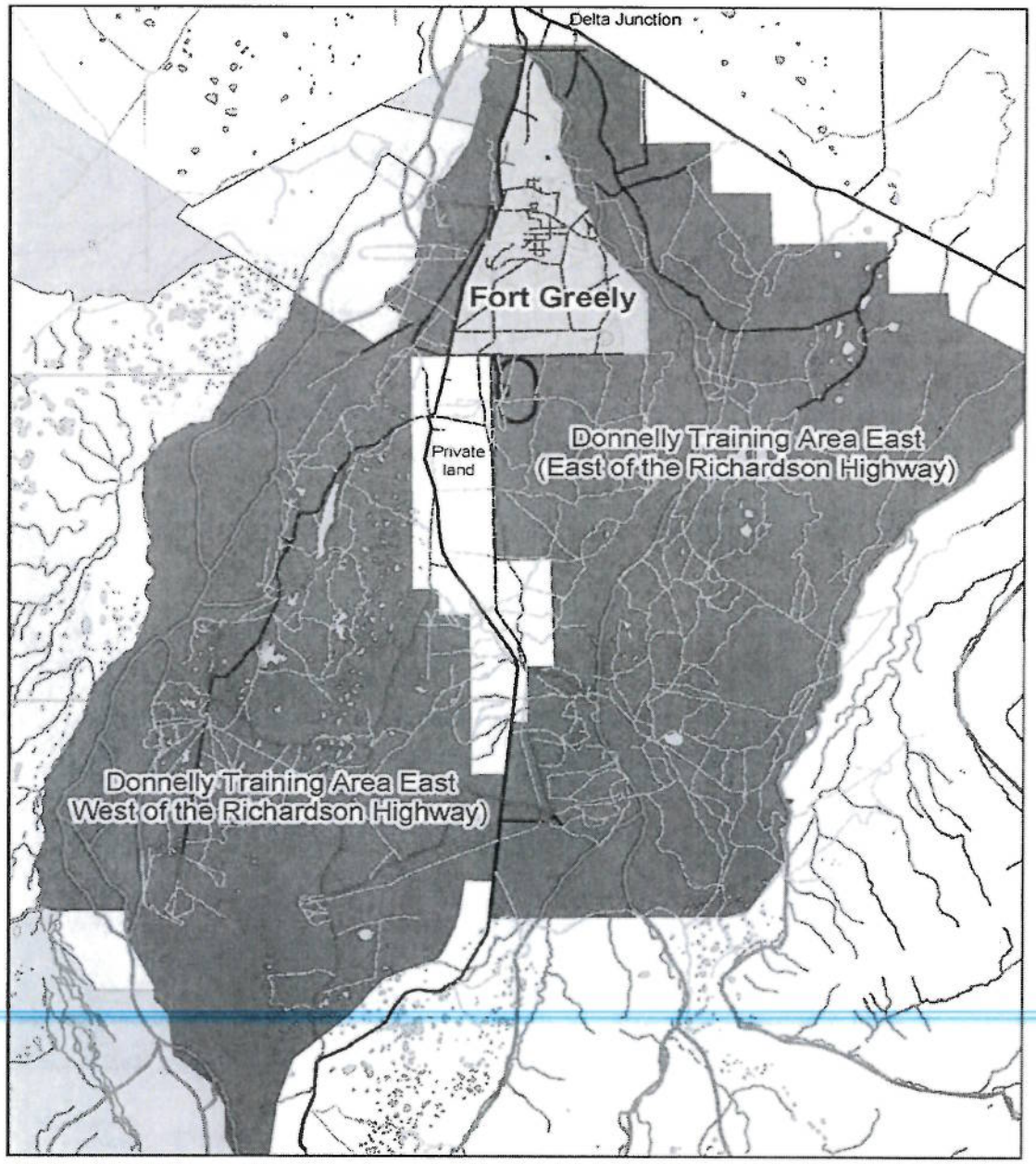

Fig. 1-8. Map of Donnelly Training Areas East and West

1-10. Values to be protected

The values to be protected on USAG Fort Greely from wildfires include personnel safety, built-up improvements, such as structures and cultural resources. Based on the Fort Greely Integrated Cultural Resources Management Plan (ICRMP) there are sixteen archaeological properties, seven of these properties are considered eligible for inclusion in the National Register of Historic

Places (NRHP) for their potential to contain information important to local, regional and national prehistory. All sites are logged and mapped and may be referenced in the ICRMP. These sites would be considered high value properties in the event of a wildfire and would receive full suppression efforts while disturbance to the area would be managed in conjunction with the ICRMP Officer to prevent or minimize damage through suppression techniques.

CHAPTER 2
ECOLOGICAL AND ENVIRONMENTAL

2-1. Geology

The geology of Fort Greely is largely derived from glacial activity. Fort Greely has three major landforms: glacial moraine, outwash/alluvial fan and flood plain.

Approximately 10,000 years ago glaciers extended north from the Alaska Range covering much of Fort Greely and Donnelly Training Area. As the glaciers receded, they left behind evidence of their passing. A moraine is created when a glacier pushes sediment up along the sides and ends of the glacier. On Fort Greely, the lateral moraine occupies the southeast portion of the cantonment area (1,444 acres, or 22% of area). The moraine is characterized by its rolling hills and lakes. This type of landscape is often referred to as kettle-moraine topography.

The majority of the landscape of Fort Greely is very flat. The melting glaciers discharged large amounts of water and sediment from their edges. This effluent is called glacial outwash. The outwash from the glacier fanned out to form a large uniform plain of sand and gravel. The resultant alluvial fan consists of 5,078 acres or 76% of the study area.

Glacial activity in the study area today is demonstrated by Jarvis Creek, which is fed by Jarvis Glacier, originating in the Alaska Range. Jarvis Creek carries a heavy sediment load and this makes the stream very erosive. Jarvis Creek is classified as a braided stream, meaning that its flood plain is wide and the creek travels through variable "braids" or channels. The flood plain landform is the smallest in size of the landforms and comprises 167 acres within the study area, or 2%.

2-2. Soils

The soils on Fort Greely originate from four main types and are strongly correlated to area geology. Parent materials found in the study area are: glacial till, glacial outwash, alluvium and loess.

Glacial till is defined as unsorted sediment deposited directly by the glacier. It is material that was pushed ahead or to the sides of the moving ice or was conveyed by the ice in some manner. The sediment is comprised of unsorted soil and rock particles of all sizes, from the tiniest clay particle (<0.002 mm) to the largest boulders (>6 meters).

Glacial outwash forms from sediments carried away from the glacial margin by melt water. These sediments vary in size and are often sorted.

Alluvium is material laid down by moving water. Alluvium is found on active floodplains and terraces. It can be mistaken for glacial outwash, but alluvium has finer sorted layers (more occurrences).
Loess is wind-blown silt deposits. Loess deposition is an active process in interior Alaska. Strong winds blow down the Delta river valley picking up fine sediments and depositing them further down wind.

Permafrost is found discontinuously throughout the Alaskan Interior and is an important influence on soil properties, vegetation and hydrology. Permafrost, its formation and degradation is a cyclical process that takes many decades to complete. On Fort Greely there is very little permafrost. The permafrost that does exist is found in small pockets, is not continuous and is thaw stable meaning that if the permafrost thaws it will not significantly alter the landscape. Permafrost is typically found in conjunction with wetland soils.

2-3. Vegetation

The vegetation on Fort Greely is largely composed of mature or regenerating white spruce *(Picea glauca)*, aspen *(Populus tremuloides)* and birch *(Betula papyrifera)* forests. These forest types occur on warm, well-drained soils. On wetter sites species such as bog birch *(Betula nana)*, black spruce *(Picea glauca)*, and sedge *(Carex sp.)* can be found (Figure 4). The vegetation on Fort Greely is largely influenced by fire. The 1999 fire burned a large swath of area. Today much of the vegetation on Fort Greely is dominated by regenerating birch, aspen and spruce.

2-4. Disturbance

Fire is important to the ecology of the boreal forest. How ecosystems recover after fire depends upon many factors including seed source, soil climate, and the heat or intensity of the fire. Fire can create a mosaic of plant communities when burn intensities vary. However, the 1999 fire burned intensely and reset the successional clock for 67% of Fort Greely.

Fire has created in areas previously dominated by mature white spruce an even age forest dominated by birch and aspen. These areas should mature into white spruce dominated stands within 100 years. Areas dominated by black spruce prior to the fire and that lack a deciduous forest stage currently will generally return to a black spruce dominated stand within 15 to 30 years (Chapin et al. 2006).

Flooding occurs along Jarvis Creek intermittently and can be a source of erosion and vegetation change. At 167 acres, this area represents 2.5 % of the study area.

The area north of Allen Army Airfield has not had a history of fire since the 1950's when fire recording started. This area is mostly mature aspen and birch stands, with a small amount of mature spruce. Though no fires have occurred, this area has been subject to man-made disturbances including the construction of the airfield and the building of the Alaska Pipeline.

2-5. Cultural Resources

The earliest written accounts of the Fort Greely region are by trappers, traders, and prospectors who entered the region in the late nineteenth century. While generally unreliable from a scientific standpoint, these reports recorded the first contact with Natives in the region and

present a broad geographic overview of the area. The first scientific exploration of the region took place in 1885 when Lieutenant Henry Allen led an expedition that descended the Tanana River. He observed native camps at the mouth of the Goodpaster and Delta Rivers. With the discovery of gold at Birch Creek and the establishment of Circle City in the 1890s, more expeditions were initiated to better map the area and locate transportation and communication routes into the Interior mining camps. Reports of these expeditions provide accounts of the Natives in the region and the geography of the Tanana Valley.

While gold brought people to the region throughout the early 1900s and provided the impetus for mapping expeditions, it was not until the 1930s that the first archaeological investigations took place. Beginning in 1934, under the direction of John Dorsh, and later under Froelich Rainey, archaeological excavations were conducted at the Campus Site in Fairbanks. Work continued at the site until 1937. During the summer of 1936, Rainey conducted a quick survey of the Tanana River Valley from the Upper Copper River and concluded at the Tanana's confluence with the Yukon. During this investigation, a number of historic and prehistoric Athabaskan sites were identified. These early investigations were the first to scientifically establish the ancient occupation of Interior Alaska, and established the basis for later investigations in the region.

Through the 1940s and 1950s archaeological work was sporadic. In the early 1960s Robert McKennan began preliminary excavations at Healy Lake. John Cook and William Workman continued efforts at this site into the late 1960s. In 1964, Frederick Hadleigh West began exploring sites in the area around Donnelly Ridge, about twenty miles south of the Fort Greely cantonment.

In the 1970s numerous cultural resources surveys were developed from various studies involving the proposed pipeline route, upgrades on Fort Greely, and renewal of military land withdrawals. Of the approximately seventy new sites that were discovered during this time, only a small number were identified on Fort Greely proper. Studies continued in the 1980s. With the relocation of the Air Force's Cope Thunder training exercise from the Philippines to Eielson AFB in 1992, numerous projects were undertaken to modernize ranges on Fort Greely. Surveys were conducted on the Fort Greely Maneuver Area in conjunction with these projects.

During the preparations for Fort Greely's Base Realignment and Closure (BRAC), a survey was conducted of most Fort Greely's buildings. No World War II buildings were found that met National Register eligibility. Twenty-six buildings that were considered eligible under a Cold War context were identified in the main Fort Greely cantonment area and consolidated into the Cold War Historic District. (Fort Greely Integrated Cultural Resources Management Plan 2011-2015)

2.6 Unexploded Ordinance

In September 2006 the Military Munitions Response Program performed a site inspection conducted by the Defense Environmental Restoration Program in order to identify possible areas of unexploded ordinance (UXO) and other areas of concern.

Two sites were identified; these sites contain minimal hazards as one site does not warrant further investigations and both sites were found to be free of munitions and explosives of concern (MEC).

Both sites are logged and mapped and future coordination shall be completed in the event a wildfire threatens these sites.

2.7 Clean Air

All fire management activities on USAG Fort Greely will be conducted in full compliance with local, state, and interstate air pollution control regulations as required by the Clean Air Act, 42 U.S.C. 7418. The Alaska Department of Environmental Conservation (ADEC) issues open burning permits. As per Public Law 95-95, compliance with federal, state and local air quality regulations is mandatory and will require coordination with state and local air quality authorities.

Smoke management can also be a significant part of determining the complexity of a prescribed fire project. The National Wildfire Coordinating Group publication *Prescribed Fire Smoke Management Guide*, National Fire Equipment Service 1279 / Publication Management System 420-2, provides a guide to the understanding of smoke management concepts. Several computer models are available to help determine the potential smoke impacts on a given area.

Personnel developing prescribed fire plans must be aware of state and local regulations and the impacts that a specific project may have on critical areas. Potential smoke impacts on critical areas such as Class I air sheds, restricted areas, and non-attainment areas (often called designated areas) must be considered. Equally important are local features that could be impacted, such as highways, airports, recreation sites and smaller population centers. Prescribed fire plans need to identify sensitive areas and provide operational guidance to minimize the impacts from smoke.

The Alaska Department of Environmental Conservation is the regulatory agency responsible for air quality and smoke management on both state and federal lands in Alaska. Prescribed burns, other than burning to combat a wildland fire, require written approval from the department. The Alaska Department of Environmental Conservation is also responsible for declaring air episodes and issuing air quality advisories, as appropriate, during periods of poor air quality of inadequate dispersion conditions. The Alaska Interagency Coordination Center (AICC) is notified of any advisories or declarations.

The Alaska Department of Environmental Conservation is represented on the Alaska Wildland Fire Coordinating Group. During periods of wildland fire activity, the multi-agency coordinating group addresses air quality and smoke management issues. Press releases with recommended actions that individuals can take to protect their health would be issued by the Alaska Department of Environmental Conservation, in coordination with the multi-agency coordinating group.

The Army's air quality specialist will be informed of all proposed prescribed fire and grounds maintenance activities using fire at the beginning of each year from which a report will be made available to the Alaska Department of Environmental Conservation. A final end-of-year report will also be made available to the Alaska Department of Environmental Conservation of actual

area burned from prescribed fires and grounds maintenance activities. If potential negative impacts from smoke could occur, an assessment of potential downwind impacts using an appropriate smoke management model will be completed. Concerns about public health related to air quality and visibility will be considered.

CHAPTER 3
FUELS MANAGEMENT

3.1 Fuel Types

As mentioned above the common fuels found on USAG Fort Greely is largely composed of mature or regenerating white spruce *(Picea glauca)*, aspen *(Populus tremuloides)* and birch *(Betula papyrifera)* forests with a grass understory.

3.2 General Wildfire Fuels

Vegetation is the fuel for any wildfire. Petroleum based fuels, wood products, and plastics that are associated with human development are normally not classified as wildfire fuels. Structural facilities located in USAG Fort Greely areas are addressed under structural fire protection programs.

All vegetation is either already a fuel source or is a potential fuel source under specific conditions. The dry dead foliage or litter produced by all vegetation creates fuel for fire. Living vegetation becomes a viable fuel source when drought conditions dry the living plants sufficiently or when, during a wildfire, they are dried by the convective or radiant heat of the fire itself.

Fuel conditions are directly related to moisture patterns and seasonal rainfall. During short periods of no or low moisture, the burning potential of vegetation can persist throughout the year. Fluctuations in precipitation can also result in short periods of vegetation green-up, followed by periods of drying. Dry conditions contribute to an increase in dead foliage and litter in plant communities.

3.3 Fuels Classifications

Fuels are a combination of the dead vegetative litter, dry or flammable standing foliage, and the live vegetation that can be dried and become a fire fuel. Fuels can be defined as the portion of the biomass, which is likely to burn if ignited. Fuels are broken down into classes described by the amount of time or "time lag" that is required to change the moisture content of the individual fuel particle being classified. This time lag is the amount of time for a substance to lose or gain approximately two-thirds of the moisture above or below its equilibrium moisture content. The shorter the time lag, the more responsive the fuels are to changes in environmental moisture.

There are four fuels classifications. One-hour fuels consist of dead vegetation less than ¼ inch in diameter, the 10-hour fuel class is 1/4" to 1" diameter, 100-hour fuel class is 1" to 3" diameter, and the 1000-hour fuel class is 3" to 10" or larger diameter. The one-hour classes of fuels are considered to be "fine fuels" and the most sensitive to ignitions. Calculation of the current moisture content of the fine or one-hour fuels is based on weather conditions. These calculations

are used to monitor the level of flammability of the fine fuels based on the amount of moisture they are estimated to contain.

Careful monitoring of the estimated Fine Fuel Moisture level will provide an accurate indication of fuel combustibility. It should be noted that these moisture percentages can change rapidly (within minutes) depending upon temperature and relative humidity readings. In fuel types dominated by one-hour fuels, fine fuels become the most critical concern of a fire manager. This size class reacts rapidly to changes in weather conditions and is the primary carrier of fire, especially in wind driven conditions.

3.4 Fire Behavior

Much of the literature on fire behavior in Alaska comes from the research of Rod Norum formerly with the U.S. Department of Agriculture Forest Service (USDA) Institute of Northern Forestry (Norum 1980). Forests in Alaska often do not appear capable of producing much fire. There is seldom much dead wood on the ground and everything looks lush and green in the summer. In many areas, rivers wind and loop all over the countryside and it doesn't look like a setting for a raging fire. Appearances can be deceiving.

The fuels on the floor of Alaskan forests are composed almost entirely of small, fast drying fuels piled or growing one upon another. When the relative humidity goes down, the fuel moistures of these fuels follow very quickly. Surface fuels in Alaska nearly stop burning if they get as wet as 15% moisture content. They burn readily at 8 to 10%. At 5 to 7%, they burn with fierce intensity and will carry fire into tree crowns.

Black spruce forests have an almost mattress-like layer of moss, lichens, and dead material on the forest floor. Dead tree branches extend to the ground. The ground fuels are either dead or contain enough flammable substance to carry a fire when they dry out. When the fire stays on the ground it is relatively easy to suppress. When it kicks up and involves the trees, it has intensity comparable to California brush fires. The trees are always moisture starved. Needle fuel moisture is under 90% coming out of winter. It rises only slightly during the growing season; therefore, the canopies are ready to burn any time they get enough heat underneath.

When the relative humidity drops into the 40% range, trees start to torch out. If wind speed is less than 10 mph, expect a slow moving crown fire, with a ground fire ahead of the crown fire. If relative humidity falls into the 30s, fire intensity increases; however, well-established lines can hold if wind is less than five mph. With wind speeds 10 mph or greater, expect a full-blown, running crown fire that spots ahead and is too hot for crews to handle. Relative humidity 30% or lower is always dangerous. Crown fires are nearly certain, and the fire is too intense to work next to. Any wind will cause spotting across all but the widest fuel breaks. Winds above 10 mph spell a "get out" situation.

Fire in forests of white spruce and mixed hardwoods is easier to manage. Fires sometimes stop here, but not always. In drought periods, fire can and will move through them, though with less intensity than in black spruce.

Tussock tundra is a distinct case. Fires in grass prairies in the mountain states are similar, but walking is much tougher here. Fires can burn through these fuels while the ground is saturated with water. Unless the wind is strong, the rate of forward spread is moderate. With wind, these fires can be quite hot. Escape from a running fire in these fuels may well be impossible if crews do not keep track of easy routes and safe havens. Foot travel is extremely difficult.

A fire may be very quiet; burnout attempts don't succeed. In an hour, the relative humidity drops and the fire becomes a raging inferno. A cool rainy day is often followed by a day when the fire stands up and runs over lines, and crews, if they're not careful. Fires come to life quickly when conditions change ever so slightly. As a rule of thumb, things will be quiet for half a burning period after a light rain and for 1 ½ days after a wetting rain. The sleeping giant can wake up in a hurry if dry air moves in and especially if wind is with it (Norum 1980).

3.5 Fuel Models

Factors in the fire behavior fuel models are fuel loading in each time lag class, fuel bed depth, the surface area to volume ratio, the heat content of the fuel, and the extinction moisture. Fuel depth can be critical to fire behavior determination. Very deep grasses will permit the highest wildfire intensities, although not necessarily the most rapid fire spread rates. Seasonal changes in the amount of live biomass for perennial and annual species are very important to potential fire behavior. Grass fuel beds composed entirely of green material (e.g., an immediate post-fire stand of grasses) are difficult to burn. However, green grass can be "under burned" where the fire carries in a well-developed thatch layer when relative humidity and soil moistures are low.
In addition to fire behavior fuel models, the Canadian Fire Danger Rating System fuel models could be assigned to various locales on USAG Fort Greely to aid in determining the threat of fire given the current weather conditions. The Canadian Fire Danger Rating System provides an estimate of the risk a fire would present, should one be ignited.

3.6 Fuel Load

Fuel load is described as the amount (weight) of flammable biomass that builds up in a given area over time or at a specific time. Fuel loading is normally measured in tons of biomass fuels per acre. Fuel loads in a given area can vary greatly depending on fuel types and environmental conditions, particularly soil moisture and soil quality.

Fuel loads are constantly in flux, and the more variable the vegetation type over time, the more difficult it is to assess the fuel conditions. Herbaceous fuels are the most difficult to estimate over time because they change so readily with alterations in climate.

Fuel loading is one of the primary factors in the fire behavior fuel models and the Fire Danger Rating System fuel models.
Continued vegetation surveys can support the Integrated Wildfire Management Plan by monitoring fuel conditions.

3.7 Fuels Management

Currently, USAG Fort Greely does not engage in a fuels management program. As the regeneration of vegetation from the Donnelly Flats Fire continues, a fuels management program will reduce the danger of future wildfires by conducting fuel hazard assessments and by

constructing and maintaining a combination of fuel breaks and firebreaks through the mechanical removal of fuels and through prescribed burning.

3.8 Fuel Hazard Assessments

Wildfire fuel hazard assessments for structures can be performed to standards set by the FireWise Program (FireWise 2002). All vegetation should be actively managed to reduce fire risk within 30 feet of a structure. Trees should be pruned and spaced at least 10 feet apart out to 100 feet from a structure. Standard assessment forms are used to survey structures. The forms were developed by the Bureau of Land Management, Alaska Fire Service and look at vegetation, building material, location and hazardous material storage.

a. Black spruce – These stands are highly flammable and are generally located in wetter and cooler sites. Crown fires are common and typically result in extensive mortality.

b. White spruce – White spruce is less flammable and located in generally warmer and drier sites. Crown fires may occur during drought conditions.

c. Mixed spruce/hardwood stands – In these stands the conifers are generally white spruce with black spruce sometimes present. Black spruce is highly flammable and conducive to crown fire. White spruce is less flammable and less conducive to crown fire. The associated hardwoods are generally less flammable and may include birch, aspen, and/or cottonwood. Surface fuels include mosses, lichens, leaf litter, grasses, and shrubs. Fires in these mixed stands are generally of moderate intensity.

3.9 Fuels Modification

Fuels modification is defined as removing and/or modifying an area or wide strip of flammable vegetation. Fuel modification can provide a reduction in radiant and convective heat, thereby providing fire suppression forces a safer area in which to fight the fire.

Fire hazard is managed by changing the vegetation type. The goal is to maintain a fuel condition that makes fires easier to control. Maintenance treatments are necessary because the flammable biomass will grow back over time, thus making fires more difficult to suppress.

The following methods, in order of decreasing effectiveness, are used to achieve lower fuel loading or a more manageable fuel matrix. A mixture of these techniques is often used in fuel management.

Reducing total amount of fuels so that there is not enough or as much to burn is the first method. Examples of reducing total fuels are prescribed burning, mechanical or chemical removal.

The second method to achieve lower fuel loading is manipulating the spacing of vegetation (both horizontally and vertically) so that it is difficult for fire to spread. Examples of spacing include mowing, grazing, or masticating.

The third method is to decrease the flammability of fuels by increasing the moisture of the vegetation or by changing the vegetation to less flammable species. This can be accomplished by watering, but this technique is only applicable for very small plots of land, such as around an individual house. More often this is accomplished by partially or totally replacing the fuels with fire resistant plants.

There are four categories of fuel modification treatments that can accomplish these objectives, including prescribed burning, mechanical treatments, chemical treatments and biological treatments.

The methods used in fuel modification, fuel breaks, and firebreaks will vary due to terrain and acreage, and the shapes of areas to be treated. In many situations, a combination of these treatments is applied. Prescribed burning reduces the volume of fuel through combustion. Fuel material can be ignited by hand or by mechanical devices at some distance from the site (i.e., helitorch, aerial firing device, etc.).

Burning generally takes place when conditions permit adequate combustion as well as control. Prescribed burning is executed by qualified individuals under precise weather conditions and after extensive precautions have been taken, such as installing firebreaks or control lines. Prescribed burning is the fastest, most complete, and most cost-effective fuel removal treatment available. However, it generates many concerns over the chance of escape as well as air quality impacts. Coordination and notification of interested parties are major tasks. The Army has successfully conducted prescribed burns on Army lands in the past.

Mechanical treatments rip up, bury, flail, or cut down vegetation and rearrange the fuel structure. Mechanical treatments generally involve the use of a bulldozer or tractor with a variety of attachments, such as a blade, large chain, rollers, a cutting (or pushing) blade, or a disc. These attachments scrape or break off the vegetation, beat up and crush or cut the fuel into small pieces, or bury the pieces. It reduces the fuel height and thus reduces the intensity of a grass fire. Mowing is especially effective in increasing the ease of fire control if it takes place just inside the firebreak. Hand labor is a subset of mechanical treatment, where human labor is used instead of mechanized equipment. Its primary disadvantage is its labor cost, but in certain situations there is no other viable alternative.

Chemicals such as herbicides and growth retardants can prevent seeds from germinating and kill mature fuels. Chemicals can be applied by hand, with a truck/tractor sprayer, or aerially. Vegetation is not removed, but further growth is stopped. Where plants are killed, the standing vegetation presents a temporarily increased fire hazard until the plant material decays. Thus, the fuel volume is not decreased immediately by this treatment, but will slowly be reduced by decomposition. It is essential that treatment frequency be high enough to prevent significant growth in the interim periods. Chemical treatments that reduce or prevent growth are most desirable. The choice of herbicides depends on the environmental setting, effectiveness on the vegetation in question, and the consequences for native species and human health and safety. While it can be an effective and efficient method, chemical control may not be appropriate in all settings.

Biological treatments are the introduction of a biological control measure to counteract the undesired fuels. These measures can include the deliberate introduction of other plants or insects that will replace, modify or retard the undesired fuels. Simple biological treatments may be the introduction of fire resistant native or alien plants to out-compete undesired fuels.

Creating a vegetative fuel break is a common means of a simple biological treatment, though it is not an effective means of fire control in all situations. Another example is the introduction of a species of plant(s) to shade out or out-compete undesired fuels in a controlled area. Grazing is another form of a simple biological control. Livestock such as cattle, goats, horses, and sheep are most commonly used. It is only effective in non-forest fuels where the vegetation is palatable to livestock. The livestock consume the vegetation, thus keeping the amount of fuel in check. Goats prefer forbs and shrubs, but will also eat grass, whereas cattle and horses will eat primarily grass. Sheep will eat both forbs and grass. Steep slopes can be grazed by goats, sheep, and horses, but cattle prefer not to graze slopes over 30%, making them ineffective in mountainous terrain.

Livestock control requires extensive enclosures and many times is not cost effective. Complex biological measures involve organisms that will directly destroy the targeted vegetation. Normally these types of treatments are strictly implemented, monitored and tightly controlled and must be coordinated with multiple agencies because they involve the introduction of a non-native biological organism.

3.10 Fuel Breaks, Firebreaks, and Natural Barrier Systems

If a wildfire escapes the initial attack, fuel breaks and other fuel modification areas provide the most logical location for fire containment lines. Well-maintained fuel breaks and fuel modifications provide defensible space that aids in wildfire containment.

Incorporating them into wildfire pre-suppression planning, initial attack responses, and resource deployment strategies can enhance the effectiveness of fire suppression. They also provide follow-up resources with a quick alternative attack strategy and a place to assemble that has been designated in advance and is well documented and mapped.

Fuel breaks are defined as strategically located blocks or strips within which vegetation has been manipulated to reduce fuel volume or flammability as an aid to fire control. USAG Fort Greely has some fire breaks. These fire breaks have seen little maintenance since USAG Fort Greely was removed from BRAC status. Future maintenance should continue to focus on the current priorities as well as provide for periodic maintenance of the remaining fuel/fire breaks and roads.

Fuel breaks are most effective if they are linked to other natural or man-made fire containment barriers. Drivable fuel breaks, or fuel breaks that have periodic access, are an important part of a successful fuel break system. Additionally, a fuel break system encompassing a large area is much more effective than an isolated single fuel break or small segments of fuel breaks. Fuel break widths are determined by fuel type, terrain features, and expected fire weather conditions, especially wind direction and speed. Generally, the wider the fuel break, the higher the probability and safer the task of containing the fire.

Fire fuel break establishment consist of the following procedures. Breaks can be created using hand thinning or tree removal techniques. Hand line/trenches may be dug to mineral soil using hand tools. Fuel breaks created with hand thinning are usually 15 - 120 feet wide. Breaks can be created using dozers with shear-blades and or straight blades. Vegetation is sheared or pushed over and windrowed or pushed into piles. The duff and or organic matter are rolled up into the windrows or piles to expose mineral soil. Piles and windrows are burned following stipulations

outlined in a burn plan. The soil may then be disked, creating furrows to enhance hardwood and shrub re-vegetation. Fuel breaks created with dozers are usually 15 - 30 feet wide. Breaks can be created using hydro-axes with masticating and rotary blades.

Vegetation is chopped up into pieces. Masticating heads incorporate vegetation with the duff and organic layers of the soil. The soil may then be disked, creating furrows to enhance hardwood and shrub re-vegetation. Fuel breaks created with hydro-axes are usually 15 - 30 feet wide.

Fuel breaks provide safe access for firefighting personnel and equipment. Firefighters can be rapidly positioned along these predetermined fire control lines. The low volume fuels within the fuel break, can be fired out (black lined) quickly to further widen an existing firebreak or quickly create a new one under conditions where backfiring operations would be impossible in the adjacent dense vegetation. In situations where the vegetation within the fuel break is not too dense, the fuel break can be used to anchor a backfire, thus allowing a wide backline to be established between the fire and the fuel break.

Fuel breaks normally will not stop the head of a fast spreading, high intensity wildfire that has the potential for long distance spotting. In this situation, the overall fuel break system aids firefighters in the containment of the flanks, rear of the wildfire, and/or reducing the size of the main fire front. If time permits, they may also provide a location from which to backfire, potentially slowing or stopping the advance of the main fire.

Fuel breaks will only remain effective if they are continually maintained. The condition of the fuel break and vehicle accessibility will be reviewed annually to determine necessary maintenance. Fuel breaks shall be cleared at the end of the growing season, before the grasses dry and add to the dead fuel load in the area.

Firebreaks are defined as cleared-to-mineral-soil fire control lines. Similar to fuel breaks, to be effective, firebreaks must be maintained each year prior to potential use in fire control.

Firebreaks will be 6 to 10 meters in width or more, but will sometimes be constrained by terrain. An annual preventive maintenance schedule for all designated firebreaks should be implemented.

During construction and maintenance, all berms should be removed to the extent necessary to minimize erosion. Water bars are to be installed at all natural watercourses on firebreaks, except where permanent drainage structures are provided.

Natural fire barriers (i.e., barren lava, rivers, streams, roads, etc.) can be used as a control line to stop the spread of fire. A natural barrier is defined as any area where a lack of flammable material obstructs the spread of wildfires. An indirect attack strategy may involve the withdrawal of fire suppression resources to roads, trails, and other natural fuel breaks. The fuel between these barriers and the fire can be burned out or backfired if necessary. Fort Greely's eastern and northern border is Jarvis Creek, a wide sand and gravel creek bed which is a very effective natural fire containment barrier.

Fuel management corridors are much wider than fuel breaks but do not include any road infrastructure. These are designed around existing natural fire barriers that may become overgrown with vegetation in the future. The corridor is monitored for encroaching vegetation and management is initiated when it reaches a threshold level. Fuel management corridors are designed to slow or even stop a fire.

At a minimum, they provide an area in which fire intensity is much lower than the surrounding vegetation, much the same as a fuel break.

Fire and fuel break effectiveness in the event of a wildfire depends on regular maintenance. Standards will be adhered to wherever terrain permits. In some locations slope, drainages, or other factors may make these standards unreasonable. In these situations, the standards will be met to the greatest extent feasible.

CHAPTER 4
PRESCRIBED FIRE

4.1 Use of Prescribed Fire

Prescribed burning is defined as the controlled application of fire under specified environmental conditions that allow the fire to be confined to a predetermined area while at the same time producing fire behavior required to attain resource management objectives. Because of the potential for unintended circumstances, extensive planning, coordination, and risk management must be completed prior to ignition of any prescribed burn. Prescribed burns also mimic the important ecosystem functions of wildfire while reducing risk to human environments and other resources.

Currently, USAG Fort Greely does not use prescribed fires as a land management tool. The opportunity to conduct prescribed burns in Alaska is usually limited to May, between snowmelt and spring growth of plants. Often this period is very wet, which makes burning difficult. Fall is another time of the year when burns can be accomplished, but the burning window in the fall is narrower due to weather and personnel constraints. Another limiting factor is that winds must be low to prevent smoke from entering populated areas. For the months of May, June, July, the prevailing winds are from the south and southwest in August. These winds could pose a significant smoke management problem for Fort Greely and the neighboring community.

4.2 General

Prescribed burning is an effective and efficient means to reduce or prevent the accumulation of hazardous fuels, where permitted, and in the future may be used as a recognized land management practice for natural resources management and fire protection. The decision to use prescribed burning will be based on the safety hazard involved, the hazard that will develop if burning is not accomplished, the type of natural habitat involved, the impact on the areas total ecosystem, and applicable state and local regulations and coordination with installation fire departments (Army Regulation 200-1).

When applied in a safe, carefully controlled situation, it is often the most cost-effective means of achieving management and natural resource objectives. Consideration will be given to prescribed

fire to protect habitats, natural resources, and capital improvements as well as reduce hazardous fuels, construct and reinforce fuel breaks, and control alien plants. Well placed prescribed burning units can help prevent large wildfires or slow their advance.

Prescribed burning on USAG Fort Greely will only be executed by qualified individuals. A National Wildland Coordinating Group certified prescribed "Burn Boss" must supervise all prescribed burns. The Burn Boss has the responsibility to make the on-site, tactical "go, no-go" decisions and ensures all prescription, staffing, equipment, and other prescribed burn requirements are met before and during the burn.

Individual prescribed burns are required to have plans and appropriate National Environmental Policy Act documentation prepared after coordination between the Bureau of Land Management, Natural Resources Branch (NFO), and the Fort Greely Fire Department occurs. Alaska Fire Service would prepare the burn plans for USAG-Fort Greely. Burn plans are used to evaluate and minimize risks associated with prescribed burning and include how the fire will be set. At a minimum, burn plans will include the following:
Burn objectives.

a. Acceptable weather and fuel moisture parameters.
b. Required personnel and equipment resources.
c. Burn area map.
d. Smoke management plan.
e. Safety considerations.
f. Pre-burn authorization/notification checklist.
g. Coordination to consider wildlife, endangered species, cultural resources, and noxious weed effects.
h. Alternative plan to cover plan of action if wind direction changes during prescribed burn.
i. Plan for analysis of burn success and identification of lessons learned.
j. When planning for prescribed fires, and when suppressing wildfire, utilize natural and existing man-made features whenever possible. Firebreaks must be constructed, maintained, or rehabilitated to prevent erosion.

It is difficult to long-range plan prescribed burning due to weather, and availability of resources, which are limited during the burn window. An air permit from the Alaska Department of Environmental Conservation is required for any burning as well as National Environmental Policy Act documentation.

4.3 Objectives

If management-ignited prescribed fires are to be used as a land management tool on USAG Fort Greely lands in the future this plan will serve as the standard so as to direct and guide all actions.

The primary objective is to use management-ignited or training-ignited prescribed fires in a safe, carefully controlled, and cost-effective manner as means of achieving fire management objectives. Management-ignited prescribed fires, often referred to as simply "prescribed fires," are defined as intentionally set fires used to achieve a resource management objective.

Prescribed fire may be used as a management tool to support mission needs and to attain the goals and objectives of the Integrated Natural Resource Management Plan, designed to implement the land management policies. Prescribed fires are used for silvicultural treatment of sites, preparation for reforestation, hazard fuel reduction, habitat enhancement, and insect and disease control.

4.4 Procedures

Prescribed burning consists of the following procedures. A management-ignited prescribed fire burn plan must be completed for all prescribed burning projects in advance of ignition. In the prescribed fire burn plans, appropriate actions to take must be addressed if on-site conditions change and cause one or more prescription parameters to exceed acceptable limits. A prescribed fire that exceeds, or is anticipated to exceed, one or more prescription parameters and/or line holding capability must be declared a wildfire and cannot be re-delegated as a prescribed fire. At this point, appropriate suppression action must be taken.

Each prescribed fire must be conducted in compliance with the approved burned plan. Only trained and qualified personnel may be used to execute each prescribed burn plan. The number of resources required to safely achieve prescribed fire objectives must be based on the size and complexity of each project. Minimum manning will vary with the size and complexity of each prescribed burn. The Wildland Fire Program Manager must personally approve the prescribed fire/prescribed natural fire burn plan and any changes. Only in the absence of the Wildland Fire Program Manager may this responsibility be re-delegated.

When planning for prescribed fires and when suppressing wildfire, utilize natural and existing man-made features whenever possible. Firebreaks must be constructed, maintained, or rehabilitated to prevent erosion. When the burn prescription window is open, crews assemble at the burn unit. The edge of the burn unit is lit using hand lighting or aerial lighting techniques. Roads, trails or changes in vegetation types surround burn units and these features are utilized as fire lines. Next the interior of the unit is lit using hand lighting or aerial lighting techniques. The interior is lit using a systematic grid pattern. The mop-up process starts after the entire unit is lit. Mop-up consists of extinguishing all hot spots within a specified distance from the burn perimeter. During mop-up, burning trees and shrubs are cut down and extinguished. Smoldering sites are dug up with hand tools and extinguished. Water is applied on an as-needed basis during mop-up, either by backpack pumps, draft pumps, fire engines, or helicopter buckets. The final process involves monitoring the burn unit until the fire is completely out; this process can take anywhere from several days to several months. The Bureau of Land Management, Alaska Fire Service, State of Alaska, Division of Forestry, or the Fort Greely Fire Department working with the Fort Greely Natural Resource Office prepares burn plans and implement prescribed fires.

4.5 Prescribed Fire Ignitions

One single type of ignition is recognized on USAG Fort Greely land: management ignition, resulting in a management (deliberate) ignited prescribed fire. Determination of prescribed fire complexity shall be based on an assessment of technical difficulty and potential consequences.

Complexity shall be used to delegate approval authority, set standards for personnel staffing and skill requirements, and to determine the level of burn plan detail. Prescribed fire projects should

be classified as Complex, Intermediate, or Basic. Burn complexity will be determined by the Wildland Fire Program Manager and shall be made in the context of existing or potential social, political, economic, biological, and/or legal consequences.

Complex prescribed fire is defined as those where prescribed burning occurs under particularly challenging conditions and/or constraints. This classification includes prescribed fires where the difficulty of achieving resource management objectives is high or where the consequences of project failure may be serious. Intermediate classification includes prescribed fires where the difficulty of achieving resource management objectives is not particularly high or complicated and where the consequences of project failure are less serious and can be mitigated. Prescribed fires of basic complexity are defined as those where few constraints, other than the normal prescription parameters, exist. This classification includes prescribed fires where achieving resource management objectives is routine and the probable consequences of project failure are low.

4.6 Prescribed Fire Burn Plan Requirements

A prescribed fire burn plan shall be completed for each management-ignited prescribed fire. Prescribed burn plans describe expected results and the conditions necessary to achieve them as part of a vegetation management program. It shall include all items outlined below. The detail needed should be commensurate with project complexity. If a given item is not applicable, it should be so indicated in the plan.

a. A description of the burn unit's physical location, including a map.

b. Identification of resource management objectives to be accomplished by the prescribed fire.

c. Desired effects and tolerable deviations.

d. Prescribed fire management of vegetation requires an understanding of the type, age class, condition, availability, and arrangement of the fuel that can impact the natural resources structures, and soils. All prescribed burns must have measurable objectives. Monitoring must occur before and after each prescribed fire to document and verify that the stated objectives have been met.

e. Project area description that includes unit and fuel descriptors.

f. A fire prescription containing those key parameters needed to achieve desired results (i.e., acceptable fire behavior, acceptable limits of environmental elements) and provisions to record on-site conditions.

g. The range of acceptable results expected, expressed in quantifiable terms.

h. Prescribed burn plans shall include the following smoke management components: Actions to minimize prescribed fire emissions, evaluate smoke dispersion, public notification, air quality monitoring, and exposure reduction precautions. The Army fully supports the Clean Air Act (1967) and amendments to the Act (1972, 1977) to protect and enhance the quality of national air resources and to protect public health and welfare. USAG Fort Greely will comply with all applicable State of Alaska and local laws pertaining to prescribed burning and the acquisition of appropriate burning permit(s).

i. Provisions for weather data collection, acceptable parameters, and forecasts.

j. Provisions for public safety and protection of sensitive features.

k. Provisions for inter/intra agency pre-burn coordination and, where applicable, public involvement and burn day notification to appropriate individuals, agencies, and the public.

l. Prescribed burn plans will be coordinated with directorates to include: Bureau of Land Management, Alaska Fire Service; Directorate of Public Works; Fort Greely Fire Department; Staff Judge Advocate; the Assistant Chief of Staff, G3, Directorate of Plans, Training, & Mobilization; and Installation Range Office. Technical experts from outside agencies (i.e., U.S. Forest Service, National Park Service, and State of Alaska, Division of Forestry) may review USAG Fort Greely's prescribed burn plans.

m. Identification of the level of complexity of the fire and the appropriate organization needed. No less than the organization described in the approved plan shall be used to execute the burn. Minimum requirements for skill/knowledge element ratings of all elements of each position listed shall be stated. Describe the duties and responsibilities of positions within the organization.

n. A communication plan.

o. Provisions for line construction, pretreatment, and holding actions to keep the fire within prescription. Firing techniques, containment, patrols, and mop-up procedures are required. Holding actions must be defined in the prescribed burn plan. The burn plan will allow the Burn Boss to take limited holding actions on fires outside the planned perimeter. However, there must be defined limits in the amount and kind of holding that can be done before any fire is determined to have exceeded the approved plan and must be declared a wildfire. The limits of acceptable holding actions must be clearly stated in the prescribed burn plan. These limits must be defined as specific actions that can be taken, not general terms. If a prescribed burn accidentally crosses the prescribed perimeter, immediate action by the holding crews must be taken to control it.

p. Identification of contingency actions to be taken if the fire exceeds prescription parameters and/or line holding capabilities and cannot be returned to prescription with project resources. If the fire exceeds the predetermined and pre-approved constraints on holding actions, the fire must be declared a wildfire and appropriate fire suppression action taken. If a single spot fire escapes, it may be designated as a separate fire. If additional suppression forces are needed, the spot fire is declared a wildfire. The prescribed burn may continue as long as adequate holding forces remain on the prescribed burn as specified in the prescribed burn plan, separate from the suppression action on the spot fire, and the burn remains in prescription. In no case should the capability to hold the prescribed burn be jeopardized by moving essential holding forces to fight a spot fire.

q. A risk assessment that portrays an estimation of the probabilities and consequences of success/failure to the approving official. A safety plan and a "go, no-go" checklist are required.

r. Provisions for fire proximity to endangered species and plant boundaries; consideration of existing and predicted weather, fire behavior, and fuel conditions; and drought evaluation impact and/or effect.

s. The source of funding and estimated costs.

t. Provisions for a test fire and recording the results.

4.7 Prescribed Fire Organization

A "Burn Boss," experienced with local weather, fire behavior, fuels, and terrain conditions, shall personally supervise the burning operations on each management-ignited prescribed fire. More complex burns may require an "Ignitions Boss" and a "Holding Boss." A Prescribed Fire Manager qualified to manage prescribed management-ignited and training-initiated prescribed fires shall personally supervise operations.

Every management-ignited prescribed fire requires the performance of the duties shown in this IWFMP. On smaller or less complex projects, one person may perform more than one of the required duties. Larger or more complex projects will require more qualified people to perform necessary duties.

The Prescribed Fire Manager will determine, through the development of the training-initiated prescribed fire burn plan, the organization, expertise, and positions necessary to manage the prescribed natural fire. The organization required varies with the size and complexity of each prescribed fire. In the event of an escape, use personnel qualified under National Interagency Fire Qualification Handbook standards (National Wildfire Coordinating Group Guide 310-1) to accomplish the required suppression activity. The temporary use of personnel who do not meet these qualifications is appropriate for prescribed fires that escape and are declared wildfires.

The Prescribed Fire Planning Specialist develops the prescribed fire burn plan for each management-ignited or training-initiated prescribed fire. The Prescribed Fire Planning Specialist may determine by the complexity or number of prescribed fires that a Prescribed Fire Manager is necessary. On management-ignited prescribed fires, the Burn Boss is responsible directly to the designated Prescribed Fire Manager for implementation and coordination of the assigned prescribed fire activities. The Prescribed Fire Manager shall:

a. Coordinate and schedule the ignition and management of two or more management-ignited prescribed fires, or the management of a single training-initiated prescribed fire.

b. Develop and implement the training-initiated prescribed fire burn plan on appropriate training-ignited fires.

c. Coordinate personnel and equipment requirements, including resources called for holding actions and contingency action section of the burn plan.

d. Ensure appropriate public notice is given prior to and during the prescribed fire activity.

e. Coordinate prescribed burn projects to avoid exceeding holding and contingency capabilities.

f. Monitor prescribed burn projects to ensure that all plan requirements are being met.

g. Record and report costs and accomplishments and recommend improvements to the Wildland Fire Program Manager.

The Burn Boss has direct responsibility for onsite implementation of specific actions in strict compliance with the approved prescribed burn plan. The Burn Boss is accountable to the Prescribed Fire Manager. The burn boss has the following responsibilities that cannot be re-delegated:

a. Ensuring safety of personnel.

b. Supervise all operations on the project site.

c. Ensure that all prescribed fire burn plan requirements are met and that personnel are briefed before proceeding with ignition.

d. To make the decision to proceed, accelerate, defer, or curtail operations based on attainment of the approved prescription criteria or lack thereof, including daily validation of prescribed criteria on multi-day projects.

e. Ensure that the fire prescription is met before proceeding with ignition.

f. Ensure that the forecast on site weather parameters are within prescription at the time of ignition and predicted to remain so during the expected life of the burn.

g. Ensure the availability of suppression resources in the event the prescribed fire escapes and is declared a wildfire.

h. Control directly, or through supervision of Ignitions Bosses, the method, rate, and location of firing.

i. Maintain immediate and clear communications with the Ignitions Boss and Holding Boss at all times.

j. Monitor fire behavior and terminate operations if fire behavior or effects are not according to prescription.

k. Accomplish mop-up to predetermined standards in accordance with the prescribed fire burn plan.

l. Certify that the fire is out.

The Ignitions Boss reports to the Burn Boss. The Ignitions Boss will maintain control of the ignition sources, including aerial ignition, on the burn project at all times, ensure deployment, sequence, and timing of all ignition sources to meet project objectives, supervise assigned personnel and ensure their safety, maintain immediate and clear communications with the Burn Boss and Holding Boss at all times, and if aerial ignition is used, ensure that the aerial ignition pilot is briefed on the Job Safety and Health Hazard Analysis, with emphasis on aerial flight hazards.

The Holding Boss reports to the Burn Boss on management-ignited prescribed fires. On prescribed natural fires, the Holding Boss may report directly to the Prescribed Fire Manager. The Holding Boss shall confine the prescribed fire within the planned area, take action when fire exceeds, or has the potential to exceed, the planned area, confer with the Ignitions Boss, Burn Boss, Prescribed Fire Manager, as appropriate, to match holding and contingency capability with firing sequence, supervise assigned personnel and ensure their safety and maintain immediate and clear communications with the Burn Boss, Ignitions Boss, or Prescribed Fire Manager, as appropriate, at all times.

4.8 Smoke Management

Although prescribed fire is essential to meet, resource and public safety objectives, the short-term effects on air quality may violate certain air quality standards, either on or off USAG Fort Greely. Smoke, (or particulate matter), produced from wildland fires is a pollutant which can present a health hazard to humans and animals. It can also impair visibility which can create safety hazards along roads, airports, and highways. The degree to which fuel is consumed during a fire determines the amount of smoke produced. Nearly complete oxidation of fuels produces very little smoke, while fires where consumption is poor produce a great deal.

Climatic conditions determine how smoke will rise, flow, and dissipate into the atmosphere. Basically, dry fuels burning under hot dry conditions will produce little smoke. The opposite is true for green fuels under wetter and/or cooler conditions. Daytime burns in the May through June season will have smoke plumes which rise vertically several thousand feet and are dispersed by high speed winds aloft. During the nighttime as the earth's surface cools, nocturnal air flow is such that smoke does not rise but drifts down slope to settle in valley areas. Air inversions can trap warm smoke-filled air in these low lying areas causing severe air pollution at the ground surface (National Wildfire Coordinating Group 1985).

All fire management activities on USAG Fort Greely will be conducted in full compliance with local, state, and interstate air pollution control regulations as required by the Clean Air Act, 42 U.S.C. 7418. The Alaska Department of Environmental Conservation issues open burning permits.

As per Public Law 95-95, compliance with federal, state and local air quality regulations is mandatory and will require coordination with state and local air quality authorities. Smoke management can also be a significant part of determining the complexity of a prescribed fire project. The National Wildfire Coordinating Group publication *Prescribed Fire Smoke Management Guide*, National Fire Equipment Service 1279 / Publication Management System 420-2, provides a guide to the understanding of smoke management concepts. Several computer models are available to help determine the potential smoke impacts on a given area.

Personnel developing prescribed fire plans must be aware of state and local regulations and the impacts that a specific project may have on critical areas. Potential smoke impacts on critical areas such as Class I air sheds, restricted areas, and non-attainment areas (often called designated areas) must be considered. Equally important are local features that could be impacted, such as highways, airports, recreation sites and smaller population centers. Prescribed fire plans need to identify sensitive areas and provide operational guidance to minimize the impacts from smoke.

The Alaska Department of Environmental Conservation is the regulatory agency responsible for air quality and smoke management on both state and federal lands in Alaska. Prescribed burns, other than burning to combat a wildland fire, require written approval from the department. The Alaska Department of Environmental Conservation is also responsible for declaring air episodes and issuing air quality advisories, as appropriate, during periods of poor air quality of inadequate dispersion conditions. The Alaska Interagency Coordination Center is notified of any advisories or declarations.

The Alaska Department of Environmental Conservation is represented on the Alaska Wildland Fire Coordinating Group. During periods of wildland fire activity, the multi-agency coordinating group addresses air quality and smoke management issues. Press releases with recommended actions that individuals can take to protect their health would be issued by the Alaska Department of Environmental Conservation, in coordination with the multi-agency coordinating group.

The air quality specialist will be informed of all proposed prescribed fire and grounds maintenance activities using fire at the beginning of each year from which a report will be made available to the Alaska Department of Environmental Conservation. A final end-of-year report will also be made available to the Alaska Department of Environmental Conservation of actual area burned from prescribed.

4.9 Escape Procedures

All ignitions will stop in the event of an escape, with suppression efforts initiated by the burn boss. If the burn exceeds the initial suppression efforts and size limitations specified within the

prescribed burn plan, the burn will be declared a wildland fire. Suppression actions are then to be initiated and directed by a qualified Type III or IV Incident Commander.

4.10 Ignition Sources

The most common causes of ignition are lighting and ignition due to downed power lines. Other less common causes of fire are field burning, exhaust, recreation, trash burning, and warming fires.

4.11 Fire Chronicle Maps

Fire history maps are updated annually by obtaining wildfire perimeters from the Bureau of Land Management, Alaska Fire Service's Geographic Information System office. Perimeters of fires smaller than 100 acres, cost, ignition point, and cause are obtained directly from the Military Zone of Alaska Fire Service. Data is consolidated with the previous years in a Geographic Information System. Two data bases are maintained, one of perimeters and one of ignition points. Wildfire and prescribed fire perimeter data is generated from satellite imagery and/or flying the perimeter with a helicopter and recording the data in a Global Position System unit.

CHAPTER 5
FIRE DEMAND ZONES

5.1 Fire Demand Zones

USAG Fort Greely is broken down in to five fire demand zones, see Figure5-1. All receive full and critical fire management suppression options due to the close proximity of personnel, structures, and cultural resources spread throughout the garrison.

5.2 Fire Demand Zone 1

Fire Demand Zone 1 includes the Allen Army Airfield, hangar,POL, fire department headquarters, steam plant, fire department storage building, water pump station, and assorted storage and mechanical buildings.

This demand zone is bordered on the east by the Richardson Highway, the south by Patricia Pike Road, the west and north the Jarvis Creek. The predominant vegetation makeup of this area is mature White Spruce and Aspen with a grassy understory. Since 1950 this area has not seen any fire activity. Most of this area has adequate defensible space.

5.3 Fire Demand Zone 2

Fire Demand Zone 2 contains most business orientated infrastructure for the garrison. This demand zone contains the POL, power plant, water treatment facility, heavy vehicle maintenance shops, post head quarters, barracks, the Post Exchange, commissary, fire station and several other administrative buildings and warehouses/storage buildings.

This demand zone is bordered on the east by the Richardson Highway, the south by Big Delta Road, the west by the Jarvis Creek and to the north by Patricia Pike Road. Predominant vegetation again is White Spruce, Aspen and Black Spruce. The western border of this demand zone suffered heavy fire damage in 1999 due to the Donnelly Flats Fire. Much of the fire killed timber has been recently leveled and now presents a heavy fire load until it rots.

The majority of the infrastructure is centralized and contained in a developed area that presents little urban interface or wildfire hazards.

The eastern portion as well as the northern area of the demand zone contains heavy stands of mature timber (White/Black Spruce and Aspen) and does pose some wildfire and urban interface threats for some outlying structures.

5.4 Fire Demand Zone 3

Fire Demand Zone 3 encompasses the missile defense complex and a large portion of undeveloped around the missile defense complex.

Fire Demand Zone 3 is bordered on the east by the Richardson Highway, the south by the southern border of USAG Fort Greely, the west by Robin Road and Landfill Road and Big Delta to the North.

5.5 Fire Demand Zone 4

Fire Demand Zone 4 is occupied predominantly by post housing as well as the child development center, post chapel, and the Delta/Greely Middle School. The eastern edge of zone 4 is predominately undeveloped, undisturbed land with large tracts of mature spruce forests, and fire killed timber.

Fire Demand Zone 4 is bordered on the east by Robin and Landfill Road, to the south by the southernmost USAG Fort Greely boundary, to the west by Jarvis Creek and the ASP's and the north by Big Delta Avenue.

Fire Demand Zone 4 also suffered heavy timber damage during the Donnelly Flats Fire along its western edge and in the southwest corner of post housing and extending to the eastern edge of housing. This area is dominated by regenerating white spruce, aspen and birch forests with a grass understory. Some fuel management and or prescribed fire should be accomplished periodically in order to reduce fuel loading.

5.6 Fire Demand Zone 5

Fire Demand Zone 5 contains USAG Fort Greely's ammunition supply points. This area is surrounded by standing fire killed timber with regenerating hardwoods.
This demand zone is bordered by Jarvis Creek to the west, to the east and south by burned standing timber, and to the north by East Post Road and Landfill road.

5.7 Fort Greely's Urban Interface Zone's

The predominant threat from wildfire on USAG Fort Greely is an escape from off the installation from the west or south entering the installation and threatening the missile defense complex and post housing.

The south or western perimeter is not the only zones vulnerable to wildland urban interface (WUI) fires. The entire installation is surrounded by mature and regenerating stands of timber and flashy undergrowth. Successful WUI firefighting operations are accomplished by selecting sound strategies supported by effective tactical actions that keep firefighters safe, protect the

public and minimize property loss. WUI fires often overtax the local fire agency resulting in the activation of mutual aid and automatic aid agreements to augment jurisdictional resources.

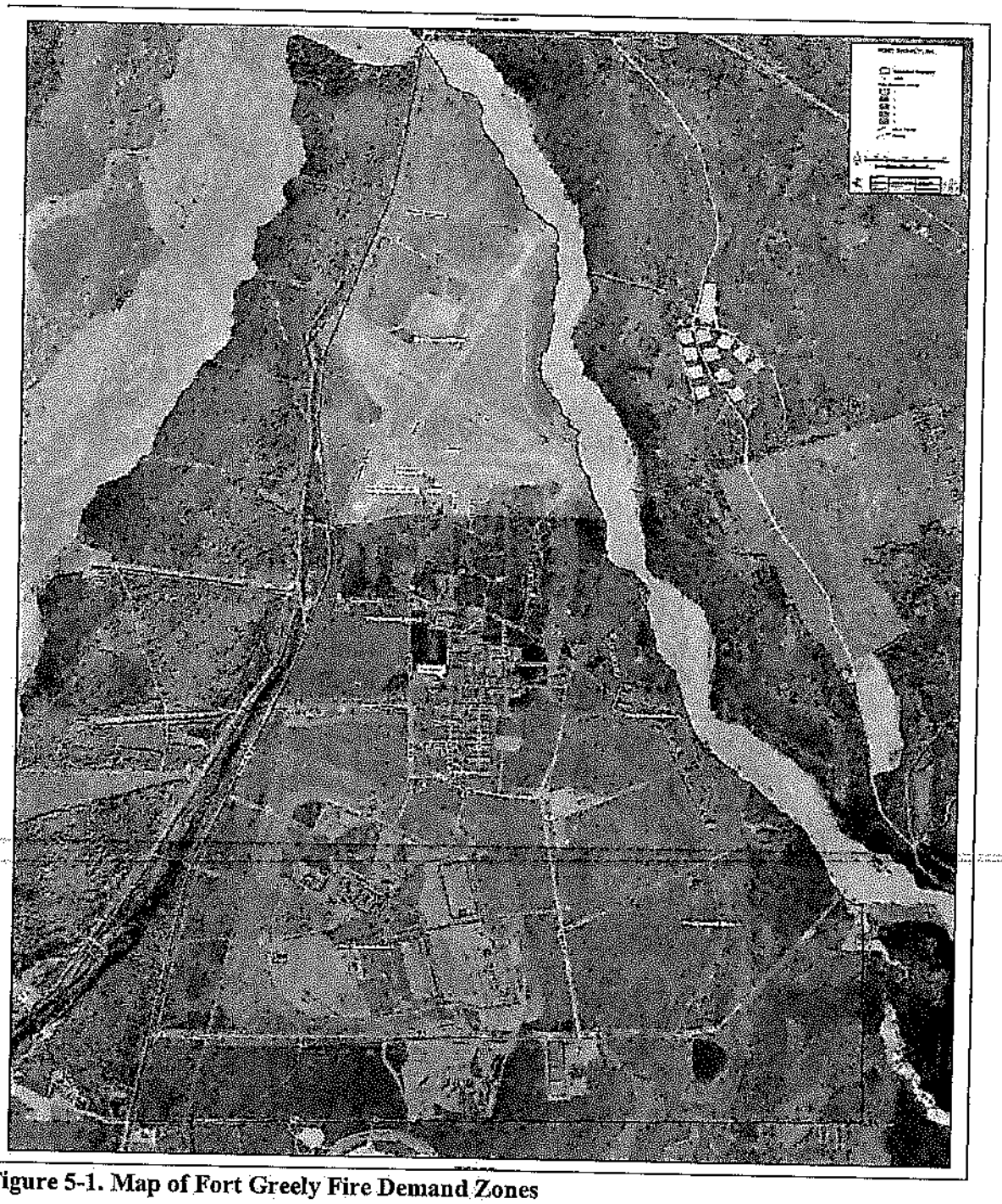

Figure 5-1. Map of Fort Greely Fire Demand Zones

CHAPTER 6
INSTALLATION STAFFING IN SUPPORT OF WILDFIRE MANAGEMENT

6-1. Internal Organizational Staffing

At USAG Fort Greely, most of the responsibility for wildland fire management fire planning and operations lies within the Fire Department and the DPW, Environmental and Natural Resource Division (ENRD). All wildfires at USAG Fort Greely are responded to by the Fort Greely fire department and Bureau of Land Management, Alaska State Division of Forestry or mutual aid partners if needed.

Several organizations contained within the garrison are key in supporting fire management and fire suppression activities.

6-2. Directorate of Emergency Services (DES)

Fire Chief/Deputy Fire Chief- Has responsibility for wildland fire program. They coordinate with ENRD personnel, particularly the natural resource officer on planning and compliance activities and with the Fire Department's Wildland Fire Coordinator on operational requirements. The chief will approve all burn plans and any wildland fire use.
Assistant Fire Chief's- Oversee personnel and training matters and are typically the initial incident commander.

The primary mission of the Fire Department is to protect life and property on USAG Fort Greely by providing emergency medical services, structural fire protection, hazardous materials response, technical rescue, and aircraft rescue and firefighting.
A secondary mission is wildfire suppression on the 6,800 acres contained within the garrison and initial response and fire attack on USAG-AK's training ranges.

Minimum staffing levels for USAG Fort Greely wildland apparatus is two (2) crew members, less than this is strictly prohibited.

6-3. Directorate of Public Works (DPW)

Environmental Natural Resource Division- Approves all burn plans and wildland fire use. Responsible for overseeing preparation of fire management plan and supporting environmental compliance, coordinate fire management Endangered Species Act compliance activities, assist with documentation of fire effects on soils, vegetation, and wildlife, provides information related to effects of fire and fire management activities on cultural and historical resources and, responsible for fuels management in the grasslands, woodlands, and forests

Geographic Information System (GIS) Specialist– Provides fire program mapping needs by plotting global positioning system (GPS) burn perimeters and maintaining fire history map and database

6-4. Directorate of Plans, Training, Mobilization, Security (DPTMS)

Responsible for internal coordination for prescribed burns; the Environmental Division's initiates requests, and DPTMS disseminates information to all necessary personnel, obtains clearance for time and place of burns and issues approval.

6-5. Public Affairs Officer (PAO)
Responsible for notification of fire-related activities to military and civilian personnel on and off the installation.

6-6. Directorate of Morale Welfare Recreation (FMWR)
Serves as the contact and coordination point, for ensuring compatibility between fire and MWR planning and operations.

CHAPTER 7
OPERATIONAL MANAGEMENT

7.1 Fire Department Staffing
USAG Fort Greely shall ensure that proper staffing requirements are in accordance with Department of Defense Instruction 6055.6, *Fire Protection Program*, and established manpower-staffing standards. Minimum staffing is based on the safety and complexity of the firefighting organization during initial attack and extended attack operations. Having a fully qualified and trained firefighting staff is an essential part of an effective suppression program

7.2 Wildland Firefighting Personal Protective Equipment
This IWFMP established the minimum standards for wildland fire fighting personal protective equipment that is to be worn at all wildland fire incidents in with compliance NFPA 1977.
All USAG Fort Greely Firefighters shall be required prior to engagement in wildland fire operations to don the appropriate personal protective equipment (PPE).

Minimum PPE requirements consist of:

(1) Department Issued Green Nomex Pants
(2) Inner shirt must be 100% cotton short sleeve
(3) Outer Shirt department issued Nomex long sleeve
(4) Three ounce leather wildland gloves
(5) Wildland or safety compliant hard hat
(6) Wildland shroud secured to helmet. The shroud will provide ears, neck, and face protection. The closure shall be on the right cheek. Shrouds shall be 6 ounce Yellow Nomex material with an FR cotton inner lining.
(7) Wildland safety goggles secured to helmet. Goggles shall have heat resistant frame and full perimeter ventilation and filtration.
(8) Wildland boots shall meet the following specifications.
a. Eight inch minimum boot height.
b. All leather uppers (No synthetic collars or panels)
c. Lace Up (no Zippers)
d. Defined Heel
e. Oil and heat resistant sole
f. Non-Slip lugged sole

d. No steel toe

(9) Web gear shall be designed and manufactured for wildland fire fighting. Construction materials shall be fire resistant.

(10) Fire shelters shall be worn while engaged in wildland fire fighting operations. Fire shelters shall be properly sized. Firefighters over 6'1" and/or 54" girth at any point shall be provided a large shelter. Fire fighters under 6"1" and 54" girth shall be provided with a regular size shelter.

All PPE shall be inspected after each use by the end user. All wildland PPE will be inspected at the beginning of each fire season. Any deficiencies (Excessive wear, excessive fading, damage, rips, tears, excessive soiling, contamination, etc.) shall be reported to the on-duty assistant chief of operations. PPE will be cleaned and/or replaced as soon as possible.

7.3 Incident Command System

The purpose of the Incident Command System (ICS) is to provide for a systematic development of a complete, functional command organization designed to allow for single or multi-agency use which increases the effectiveness of command and firefighter safety.
This system combines command and strategy with organizational guidelines.

The ICS organization develops around five major functions that are required on any incident whether it is large or small. For some incidents, and in some applications, only a few of the organization's functional elements may be required. However, if there is a need to expand the organization, additional positions exist within the ICS framework to meet virtually any need.

ICS establishes lines of supervisory authority and formal reporting relationships. There is complete unity of command as each position and person within the system has a designated supervisor. Direction and supervision follows established organizational lines at all times.

Fort Greely Fire Department uses the National Incident Management System (NIMS) on all incidents regardless of size or magnitude and all fire department personnel meet the requirements of Homeland Security Presidential Directive 5 (HSPD-5).

7.4 Communications

Communications procedures cover working with internal and external parties. Within USAG Fort Greely the Fire Department operates off the Alaska Land Mobile Radio (ALMR) system. This system provides complete interoperability between internal and external organizations All Fire personnel are equipped with hand-held radios while the fire apparatus are outfitted with mobile radios or portables.

7.5 Fire Suppression

Wildfire suppression is conducted by the Fort Greely Fire Department, Bureau of Land Management, (Alaska Fire Service). The State of Alaska, Division of Forestry may be called upon for assistance as well as local fire departments. Suppression actions consist of using the following resources: fire engines, dozers, saws, hand tools, pumps, aircraft and backfiring.

7.6 Fire Management Strategies

The Wildland Fire Situation Analysis is a systematic and documented decision process employed to determine the most appropriate suppression strategy for a particular situation. A Wildland Fire Situation Analysis is prepared when a fire:

(1) Escapes initial attack,
(2) Threatens to escape a fire management option into a higher management option,
(3) Warrants suppression actions but was not initial attacked due to resource shortages,
(4) Is beyond the capabilities of initial attack forces, or
(5) Fire and/or resource management objectives are not being met and a significant change in strategy/action is required.

7.7 Special Considerations for Suppression

The Incident Commander needs to select suppression tactics commensurate with the fire's potential or existing behavior, yet leaving minimal environmental impact. Minimum impact suppression is an increased emphasis on suppressing a wildfire while minimizing the effects of suppression measures on the vegetation, soils, and watershed. Minimum impact suppression tactics will not over-ride considerations for safety or containment or control of the wildfire. However, they will be used to the maximum extent possible within these constraints.

Protection of the local environment will be considered in fire management strategies, particularly in the location of fuel breaks and control lines. Bulldozers are a useful tool in fire suppression efforts but can have a severe impact on natural and cultural resources. The use of dozers to construct fire-lines within pre-established fuel breaks provides for safe dozer operations, enhances ground firefighter safety, and causes the least environmental impact, as these areas are pre-approved for vegetation removal. Dozers are used as a means of last resort in fire suppression because of their potential impact on the environment. Dozer operators will be equipped and trained for wildland fire protection, trained in environmental sensitive issues relating to the use of dozers (i.e., long term effects of physical disturbance, potential introduction of alien plants, erosion control, and location of endangered and threatened species populations), and given natural/cultural resource orientation prior to any work assignment.

Fire managers must be familiar with the long-term effects of physical ground/vegetation disturbance, potential of alien vegetation introduction, through the use of dirty equipment or the creation of invasion routes, creation of erosion problems, protection of cultural sites, limitations on use of fire suppression chemicals (foam and retardant), the aerial use of chemical retardant, fire foam and saltwater will be weighed against the potential for fire damage to sensitive plants.

Use of aerial fire retardant near lakes, wetlands, streams, rivers, sources of human water consumption, and areas adjacent to water sources should be avoided to protect fish habitat and water quality. If feasible in these areas, the use of water rather than retardant is preferred. When the use of retardant is necessary, avoid aerial or ground application of retardant or foam within 300 feet of a waterway; application beyond 500 feet is preferred. Examples of when the use of retardant is authorized are for the protection of:

a. Human life.
b. Permanent year-round residences.
c. National Historic Landmarks.

d. Structures on or eligible for the National Register of Historic Places.
e. Government facilities.
f. High value resources on BLM managed land and those of adjacent land owners.
g. Threatened, endangered, and sensitive species habitats as identified by resource specialist.

During fire suppression the Incident Commander will evaluate each and every suppression activity during planning and strategy sessions to see that they meet minimum impact suppression objectives, discuss minimum impact suppression tactics with overhead team during overhead briefings, ensure minimum impact suppression tactics are implemented during line construction as well as other environmentally destructive activities, and consult with environmental staff prior to implementing line construction in sensitive areas, providing time permits and proper personnel are available.

Whenever possible, a red card certified member of the environmental and/or cultural staff shall accompany bulldozers or hand crews constructing fireline in previously undisturbed locations. Minimum impact suppression tactics shall be applied to ensure protection of high valued resources.

7.8 Fire Detection

All wildfires are to be immediately reported to Fort Greely Central Dispatch. Fort Greely Central Dispatch will then notify Fort Greely Fire Department and the Bureau of Land Management, Alaska Fire Service upon request from the incident commander.

Normally, the fire and emergency services will be notified first then they will, in turn, notify the Bureau of Land Management. However, some situations may warrant simultaneous notification. No notification should be made to The State of Alaska, Division of Forestry without first contacting the Bureau of Land Management, Alaska Fire Service.

7.9 Public Information

Wildfire progress monitoring is conducted by the Bureau of Land Management, Alaska Fire Service. Updates can be obtained on its web site http://fire.ak.blm.gov/. Updates for fires where suppression action is required can also be obtained by contacting the public information officer at Alaska Fire Service.

7.10 Funding

Funding for Integrated Wildland Fire Management Plan implementation, wildland fire prevention, fuel management for hazard reduction, wildland fire suppression, prescribed burning, and other wildland fire management is an installation operations and maintenance responsibility. Wildland fire management activities conducted for the purpose of compliance with environmental laws and regulations will be supported by environmental conservation funds.

CHAPTER 8
Training and Safety

8.1 Life Safety
The primary concern during any fire is human safety and protection. Neighboring towns (Delta Junction) and other areas provide additional priority protection considerations. Additionally, firefighters on the line, in the air, and at the command post must all be properly trained, outfitted, and informed of all threats and safety measures. Fire management safety concerns on USAG Fort Greely include threats posed by fire and smoke to local residents, employed personnel, and wildland firefighters.

8.2 Training and Safety
Training is the key to safe and successful wildfire and prescribed fire incidents. Without training for planned and unplanned fire events, public and firefighter safety may be compromised. Safety is the first and highest priority and will never be compromised by other objectives. Safety is the responsibility of everyone assigned to a wildfire or prescribed fire incident. Safety is an attitude that must be promoted at all operational levels. Once personnel are committed to an incident, those resources become the highest value to be protected.

Fighting wildfires is inherently dangerous, and firefighters risk injury or even death in these operations. Nationally wildland firefighter fatalities occur nearly every year. In addition to the danger from the fire itself, the need to use cutting tools, mobile apparatus, heavy equipment, and aircraft add to the risk involved.

8.3 Description of Program
Courses of instruction have been developed by the National Wildfire Coordinating Group for each position in the Wildfire Incident Command System. These courses have been designed to teach the basic information required to gain a general understanding of the position and provide technical knowledge required to perform duties required by the job. These courses are similar to college courses in that they start out at a basic level (100 level basic firefighter skills) and work up through higher levels of the Incident Command System (up to 500 level national Incident Command System skills). Courses are to be taught by trained and qualified instructors, experienced in the skill being taught.

Position Task Books are used to document performance demonstrations. Position Task Books are National Wildfire Coordinating Group published booklets that apply to a specific position in the Incident Command System. A Position Task Book contains all critical tasks that are required to perform a given job. These booklets will be used by wildfire managers and supervisors to keep track of an individual's training experience. There will be a Position Task Book for most positions included in the program. The tasks in each Position Task Book have been established by the National Wildfire Coordinating Group. Position Task Books have been designed in a format that allows documentation of a trainee's ability to perform each task. Tasks pertaining to tactical decision-making and safety are flagged and require a position performance on a wildfire. Remaining tasks can be evaluated through other means such as simulation or other emergency and non-emergency work. Successful completion of all tasks required of the position will be the basis for recommending certification for a specific position in the Incident Command System.

8.4 Training Requirements

Training is established to provide standardization for organizations that are responsible for fire fighting, wildfire, and prescribed fire duties.

Personnel in the GS-081 job series, will meet the certification standards specified in NFPA Standard 1051 - Standard for Wildland Fire Fighter Professional Qualifications and NFPA Standard 1002 - Standard for Fire Apparatus Driver/Operator Professional Qualifications and or National Wildfire Coordinating Group (NWCG) training standards. All other Department of the Army personnel with jobs requiring wildland fire responsibilities may use the NWCG Wildland Fire Qualification Subsystem Guide

The training program, qualification, and certification process are the foundations of a safe fire program. Only qualified personnel will be assigned fire fighting duties. All assigned wildland fire personnel, whether on wildfires or prescribed fires, must meet NFPA or NWCG training standards.

All personnel engaged in actual fireline operations (in the vicinity of the fire) must have completed S-130, Firefighter Training; S-190, Introduction to Fire Behavior, Your Fire Shelter and Standards for Survival; and I-100, Introduction to Incident Command System (ICS) or be deemed by the incident commander to have the acceptable skills and knowledge. All Fort Greely Fire Department personnel will be required to complete an annual four-hour refresher course S-132, Standards for Survival. All personnel will have NWCG certified training or similar trainings (NFPA) for tasks they are assigned.

USAG Fort Greely personnel assigned under the GS-081 job series maintain at a minimum of an Emergency Medical Technician (EMT-1) certification, all secondary wildland firefighters will be certified, as a minimum requirement, in Cardio-Pulmonary Resuscitation (CPR) and Standard First Aid by the American Heart Association or comparable certification authority.

Individuals will not be assigned to duties for which they lack training and/or certified experience. All personnel dispatched or assigned to wildfires or prescribed fires will be qualified for the fire position assigned, unless assigned as trainees under the direct supervision of higher qualified personnel.

Fort Greely Fire Department or outside cooperating agencies shall meet the required wildland fire fighter training and physical fitness requirements outlined within each respective agency's established policies or training program. Training opportunities offered by the USAG Fort Greely will be shared with outside cooperative agencies for cross-leveling and sharing of training opportunities within the area, such as other DOD, state and local fire departments, and nongovernmental agencies.

8.5 Fitness Requirements

This installation IWFMP describes a measurable and objective evaluation test (medical exam, step-test, pack test, etc.) that will be used to establish physical fitness standards for personnel that

participate in wildland fire management activities. All required exams will be paid for by the Government.

Personnel whose job description requires participation in wildland fire management activities as a primary or secondary firefighter on USAG Fort Greely will meet the pre-employment medical and physical criteria contained in NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program* and receive a physical examination as specified in NFPA 1582 *Standard on Medical Requirements for Fire Fighters.*

The fitness level that personnel shall meet is ICS position dependent.
Personnel assigned to wildfire or prescribed fire duties are required to meet the following standards for physical fitness or those deemed acceptable by the incident commander.

(1) Arduous duties involve fieldwork requiring physical performance over an extended period of time, calling for above-average endurance and superior conditioning. These duties may include a demand for extraordinarily strenuous activities in emergencies under adverse environmental conditions and over extended periods of time. Requirements include running, walking, climbing, jumping, twisting, bending, and lifting more than 50 pounds; the pace of work typically is set by the emergency situation.

(2) Moderate duties involve field work requiring complete control of all physical faculties and may include considerable walking over irregular ground, standing for long periods of time, lifting 25 to 50 pounds, climbing, bending, stooping, squatting, twisting, and reaching. Occasional demands may be required for moderately strenuous activities in emergencies over long periods of time. Individuals usually set their own work pace.

(3) Light duties mainly involve office work with occasional field activity characterized by light physical exertion. Activities may include climbing stairs, standing, operating a vehicle, and long hours of work, as well as some bending, stooping, or light lifting. Individuals almost always can govern the extent and pace of their physical activity.

(4) None duties are normally performed in a controlled environment, such as an incident base or camp.

By NWCG standards the Pack Test is used to determine whether individuals are fit enough to perform wildland firefighting duties. The Pack Test is the standard and shall be used to determine the level of fitness and certification.

(1) Arduous: Individual must carry a 45-lb backpack 3 miles in 45 minutes or less.
(2) Moderate: Individual must carry a 25-lb backpack 2 miles in 30 minutes or less.
(3) Light: Individual must hike 1 mile in 15 minutes with no pack.

There are no fitness requirements for non-operation technical specialist positions unless participating on the fire line. For all non-operation technical specialists whose skills are needed on the fire line, the physical fitness level classification shall be designated as, light.

Appendix B
Interagency Agreements

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FT GREELY
P. O. BOX 31269
FORT GREELY ALASKA 99731-1269

02-02-2011

MUTUAL AID AGREEMENT
BETWEEN
UNITED STATES ARMY GARRISON FORT GREELY FIRE AND EMERGENCY SERVICES
AND
DELTA JUNCTION VOLUNTEER RESCUE SQUAD
AND
DELTA JUNCTION VOLUNTEER FIRE DEPARTMENT
AND
RURAL DELTANA VOLUNTEER FIRE DEPARTMENT

SUBJECT: Mutual Aid for the Protection of Life and Property from Fire, Rescue, Hazardous Materials, and Emergency Medical Care.

This agreement, entered into this day of 02-02-2011, between the Secretary of the Army acting according to the authority of section 1856a, title 42, United States Codes, the Delta Junction Volunteer Fire Department, Delta Junction Volunteer Rescue Squad and Rural Deltana Volunteer Fire Department is to secure for each, the benefits of mutual aid in fire prevention, the protection of life and property from fire, rescue, hazardous materials, and emergency medical care. It is agreed that-

a. On request to a representative of the United States Army Garrison, Fort Greely herein known as USAG Fort Greely Fire and Emergency Services (USAG Fort Greely F&ES) by a representative of the Delta Junction Rescue Squad or Delta Junction Volunteer Fire Department or Rural Deltana Volunteer Fire Department emergency equipment and personnel of the USAG Fort Greely F&ES will be dispatched when available to any point within the area for which the Delta Junction Volunteer Rescue Squad or Delta Junction Volunteer Fire Department, or Rural Deltana Volunteer Fire Department provides emergency services as designated by the representative of either the Delta Junction Volunteer Rescue Squad or Delta Junction Volunteer Fire Department or the Rural Deltana Volunteer Fire Department.

b. On request to a representative of the Delta Junction Volunteer Rescue Squad, Rural Deltana Volunteer Fire Department or Delta Junction Volunteer Fire Department by a representative of the USAG Fort Greely F&ES, emergency equipment and personnel of the Delta Junction Volunteer Rescue Squad or Delta Junction Volunteer Fire Department or Rural Deltana Volunteer Fire Department will be dispatched when available to any point within the area for which USAG Fort Greely F&ES normally provides emergency services as designated by the representative of the USAG Fort Greely F&ES.

c. The rendering of assistance under the terms of this agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting department if, for any reason, assistance cannot be rendered.

d. Any dispatch of equipment and personnel pursuant to this agreement is subject to the following condition:

(1) Any request for aid under this agreement will specify the location to which the equipment and personnel are to be dispatched; however, the amount and type of equipment and number of personnel to be furnished will be determined by a representative of the responding organization.

(2) The responding organization will report to the officer in charge of the requesting organization at the location to which the equipment is dispatched. The Senior Officer from the responding organization and the Incident Commander from the requesting organization will work under a unified command system as outlined in the National Incident Management System (NIMS), dated 1 March 2004 or the current version.

(3) A responding organization will be released by the requesting organization when the services of the responding organization are no longer required, or when the responding organization is needed within the area for which it normally provides fire protection.

(4) If a crash of aircraft owned or operated by the Unites States or Military aircraft of any foreign nation occurs within the area for which the City of Delta Junction Volunteer Fire Department normally provides fire protection, or the Rural Deltana Volunteer Fire Department normally provides fire protection the Chief of USAG Fort Greely F&ES or his or her representative will assume full command on arrival at the scene of the crash.

(5) USAG Fort Greely F&ES shall provide aid for Emergency Medical Support (EMS) to Delta Junction upon request by the Delta Junction Volunteer Rescue Squad or an authorized designee such as City Dispatch. In addition, USAG Fort Greely F&ES shall respond to EMS calls in the Delta community when requested by Delta Junction Volunteer Rescue Squad or City Dispatch when there is no response to a second call for service by Delta Junction Rescue Squad and if USAG Fort Greely F&ES resources allow. Also, USAG Fort Greely F&ES shall also provide aid to Delta Junction Volunteer Rescue Squad for all EMS calls designated as Charlie, Delta, or Echo emergency responses determined by City Dispatch. Delta Junction Volunteer Rescue Squad shall provide aid to USAG Fort Greely F&ES only upon request by USAG Fort Greely F&ES if resources permit. If at any time one party determines that aid is no longer required by the other, they shall notify the other party so that their response can be discontinued.

e. Each party herby waives all claims against every other party for compensation for any loss, damage, injury, or death occurring as a consequence of the performance of firefighting operations, rescue operations, or emergency medical needs under this agreement except those claims authorized under 15 U.S.C. 2210.

f. Each party herby agrees that the cost for any expendable supplies used during a medical emergency will be reimbursable at the replacement cost to the responding agency. A detailed report of supplies shall be submitted to the responding agency within thirty (30) days to have said items replaced.

g. The chief officers and personnel of the departments of all parties to this agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and, as feasible, to jointly conduct pre-fire planning inspections and emergency drills.

h. The chief officers of the departments of the parties to this agreement are authorized and directed to meet and draft any detailed plans and procedures of operations necessary to effectively implement this agreement. Such plans and procedures of operations shall become effective upon ratification by the signatory parties.

i. All equipment used by USAG Fort Greely F&ES, Delta Junction Volunteer Rescue Squad, Rural Deltana Volunteer Fire Department or Delta Junction Volunteer Fire Department in carrying out this agreement will be owned by the parties listed herein; and all personnel acting for the parties to this agreement will be an employee or volunteer member of one of the above mentioned parties. A fire or emergency response onto Fort Greely by the Delta Junction Volunteer Rescue Squad, a Rural Deltana Volunteer Fire Department or Delta Junction Volunteer Fire Department will not cause the individuals that comprise these organizations to become agents or employees of the United States Government. Likewise, a response by Fort Greely at the request of another organization will not cause Fort Greely's personnel to become agents of the requesting organization. The medical, worker's compensation and/or disability protection plan by the respective organizations will still cover their individual members. If an individual is a member of a requesting and a responding organization, his duty status (which organization he was working with/for at the time of the incident) will determine medical, worker's compensation and/or disability protection plan coverage. The same provisions of this paragraph will control if an individual suffers bodily harm during training.

j. This agreement shall become effective upon the date hereof and remain in full force and effect until cancelled by mutual agreement of the parties hereto or by written notice by one party to the other parties, giving thirty (30) days' notice of said cancellation.

IMPC-GRE-FES
SUBJECT: Mutual Aid for the Protection of Life and Property from Fire, Rescue, Hazardous Materials, and Emergency Medical Care.

k. The Delta Junction Volunteer Rescue Squad, Rural Deltana Volunteer Fire Department and Delta Junction Volunteer Fire Department fire fighting forces will not be used for biological, chemical, radioactive, or explosive response but may be used for support functions posing less risk, such as a subsequent decontamination of the site of materials at the site once the hazard has been reduced.

l. The Delta Junction Volunteer Rescue Squad, Rural Deltana Volunteer Fire Department, Delta Junction Volunteer Fire Department, and USAG Fort Greely F&ES will train together as needed to better understand the other responding agencies equipment to allow for timely responses.

CHRIS W. CHRONIS
LTC, AV
Commanding

14 February 2011
Date

VERNON G. HEINTZ
Acting Fire Chief
Delta Junction Fire Department

2-5-2011
Date

JAMES DEGNAN
Fire Chief
USAG, Fort Greely F&ES

2-7-2011
Date

MARY LEITH
Mayor
City of Delta Junction

2/2/2011
Date

IMPC-GRE-FES
SUBJECT: Mutual Aid for the Protection of Life and Property from Fire, Rescue, Hazardous Materials, and Emergency Medical Care.

LARRY M. RAINS
Board President
Rural Deltana Fire Department, Inc

2/3/2011
Date

ADRIANE R. PETERSON
EMS Chief
Delta Junction Rescue Squad

03Feb2011
Date

TED HAMILTON
Fire Chief
Rural Deltana Fire Department

2-7-2011
Date

SUPPORT AGREEMENT

1. AGREEMENT NUMBER (Provided by Supplier)	2. SUPERSEDED AGREEMENT NO. (If this replaces another agreement)	3. EFFECTIVE DATE (YYMMDD)	4. EXPIRATION DATE (May be "Indefinite")
BLM No. LAI 03 0001			

5. SUPPLYING ACTIVITY	6 RECEIVING ACTIVITY
a. NAME AND ADDRESS Fred Hernandez (907) 356-5549 or Tamela Defries (907) 356-5503 Department of Interior Bureau of Land Management, Alaska Fire Service P.O. Box 35005 Fort Wainwright, AK 99703-0005 Agreements Coordinator (907) 267-1306	a. NAME AND ADDRESS Deputy Commanding General, Research, Development and Acquisition U.S. Army Space and Missile Defense Command SMDC-RM-M P.O. Box 1500 Hunstville, AL 35807-3801 Phone: (256) 955-3600; FAX: (256) 955-3963
b. MAJOR COMMAND N/A	b. MAJOR COMMAND U.S. Army Space and Missile Defense Command

7. SUPPORT PROVIDED BY SUPPLIER

a. SUPPORT (Specify what, when, where, and how much)	b. BASIS FOR REIMBURSEMENT	c. ESTIMATED REIMBURSEMENT
Fire Protection	Non-Reimbursable	0
Training Services	Non-Reimbursable	0

ADDITIONAL SUPPORT REQUIREMENTS ATTACHED: [X] YES [ ] NO

8. SUPPLYING COMPONENT		9. RECEIVING COMPONENT	
a. COMPTROLLER SIGNATURE Scott Billing Scott Billing, AFS Manager	b. DATE SIGNED 12/9/02	a. COMPTROLLER SIGNATURE Gene Willard for M. E. LaValle COL, GS, DCSRM	b. DATE SIGNED 25 Oct 02
c. APPROVING AUTHORITY		c. APPROVING AUTHORITY	
(1) TYPED NAME: Don Hinrichson, Deputy State Director Vicky Hawkinson, Procurement Analyst		(1) TYPED NAME David G. Farrisee, COL, GS, Chief of Staff	
(2) ORGANIZATION Alaska Fire Service Management, Department of Interior	(3) TELEPHONE NUMBER (907) 356-5500 (907) 256-1323	(2) ORGANIZATION U.S. Army Space and Missile Defense Command	(3) TELEPHONE NUMBER (703) 607-1895
(4) SIGNATURE Vicky Hawkinson	(5) DATE SIGNED 12-17-02	(4) SIGNATURE David G. Farrisee	(5) DATE SIGNED 13 Dec 02

10. TERMINATION (Complete only when agreement is terminated prior to scheduled expiration date.)

a. APPROVING AUTHORITY SIGNATURE	b. DATE SIGNED	a. APPROVING AUTHORITY SIGNATURE	b. DATE SIGNED
Vicky Hawkinson	12-18-02		

7/18/02

DD Form 1144, MAY 1999 Previous editions are obsolete. USAPA V1.00

11. GENERAL PROVISIONS *(Complete blank spaces and add additional general provisions as appropriate: e.g., exceptions to printed provisions, additional parties to this agreement, billing and reimbursement instructions.)*

a. The receiving components will provide the supplying component projections of requested support. *(Siginificant changes in the receiving component's support requirements should be submitted to the supplying component in a manner that will permit timely modification of resource requirements.)*

b. It is the responsibility of the supplying component to bring any required or requested change in support to the attention of Garrison Commander, U.S. Army Garrison, Fort Greely, AK, P.O. Box 507, Delta Junction, AK 99737 prior to changing or cancelling support.

c. The component providing reimbursable support in this agreement will submit statements of costs to: Alaska Fire Service, P.O. Box 35005, Fort Wainwright, Alaska 99703

d. All rates expressing the unit cost of services provided in this agreement are based on current rates which may be subject to change for uncontrollable reasons, such as legislation, DoD directives, and commercial utility rate increases. The receiver will be notified immediately of such rate changes that must be passed through to the support receivers.

e. This agreement may be cancelled at any time by mutual consent of the parties concerned. This agreement may also be cancelled by either party upon giving at least 180 days written notice to the other party.

f. In case of mobilization or other emergency, this agreement will remain in force only within suppplier's capabilities.

DISTRIBUTION:

3 Ea - ATTN: Contracting Officer, Sandee Smith, AK 952
Assistance Officer
6881 Abbott Loop Road
Anchorage, AK 99507
Telephone: (907) 267-1306; FAX: (907) 267-1434

1 Ea - Deputy Commanding General, Research, Development and Acquisition
U.S. Army Space and Missile Defense Command
SMDC-RM-M
P.O. Box 1500
Huntsville, AL 35807-3801
Telephone: (256) 955-3600; FAX: (256) 955-3963

ADDITIONAL SUPPORT REQUIREMENTS ATTACHED: [X] YES [ ] NO

12. SPECIFIC CONDITIONS *(As appropriate: e.g., location and size of occupied facilities, unique supplier and receiver responsibilities, conditions, requirements, quality standards, and criteria for measurement/reimbursement of unique requirements.)*

ADDITIONAL SUPPORT PROVISIONS ATTACHED: [X] YES [ ] NO

DD FORM 1144 (BACK), MAY 1999 USAPA V1.00

STANDARD PROVISIONS

1. This agreement between the U.S. Army Space and Missile Defense Command (USASMDC)/U.S. Army Garrison, Fort Greely, AK and the U.S. Department of Interior, Bureau of Land Management (BLM), Alaska Fire Service (AFS), delineates the policies and procedures whereby AFS provides wildland fire suppression services for all range and forestland fires located on Fort Greely on a non-reimbursable basis.

2. BLM, AFS, is the federal agency responsible for wildfire suppression on public lands. USASMDC/U.S. Army Garrison, Fort Greely is the land manager.

3. Agreement modifications:

a. The Financial Provisions of this agreement concerned with reimbursements will, if requested, be reviewed annually.

b. The Specific Provisions will be reviewed triennially, or as requested by either the Supplier or Receiver.

4. BLM, AFS, personnel will abide by all post and installation regulations, directives, and policies to include postal, fire, safety, security, and similar administrative procedures.

5. If services are required, which are not specifically addressed in this agreement, and the services are available, a funding document agreeable to the applicable budget offices should be submitted to the budget office of the organization providing the service as follows:

a. USASMDC:

Deputy Commanding General, Research, Development and Acquisition
U.S. Army Space and Missile Defense Command
SMDC-RM-S
P.O. Box 1500
Huntsville, AL 35807-3801
Telephone: (256) 955-3850

b. BLM/AFS:

(1) State Office
U.S. Department of Interior, Bureau of Land Management
ATTN: Susan Ryherd, Agreements Specialist
6881 Abbot Loop Road
Anchorage, AK 99507
Telephone: (907) 267-1306; FAX: (907) 267-1434

(2) Alaska Fire Service
U.S. Department of Interior, Bureau of Land Management
ATTN: Tami DeFries, Military Zone Fire Management Officer
P.O. Box 35005
Fort Wainwright, AK 99703-0005
Telephone: (907) 356-5503

6. If it is determined that the service will be required on a recurring basis (even if only annually), a written request for a revision must be submitted to:

a. USASMDC:

Garrison Commander
U.S. Army Garrison, Fort Greely
SMDC-RD-TE-G
P.O. Box 507
Delta Junction, AK 99737
Telephone: (907) 873-3106

b. BLM/AFS:

(1) State Office
U.S. Department of Interior, Bureau of Land Management
ATTN: Susan Ryherd, Agreements Specialist
6881 Abbot Loop Road
Anchorage, AK 99507
Telephone: (907) 267-1306; FAX: (907) 267-1434

(2) Alaska Fire Service
U.S. Department of Interior, Bureau of Land Management
ATTN: Tami DeFries, Military Zone Fire Management Officer
P.O. Box 35005
Fort Wainwright, AK 99703-0005
Telephone: (907) 356-5503

7. The agreement will remain in effect during implementation of mobilization and will be subject to review at that time.

8. Receiver point of contact is:

U.S. Army Garrison, Fort, Greely
SMDC-RD-TE-G (Fire Chief)
P.O. Box 507
Delta Junction, AK 99737
Telephone: (907) 873-3473

9. Supplier point of contact is:

Department of Interior
Bureau of Land Management (BLM)
ATTN: Manager, Alaska Fire Service
P.O. Box 35005
Fort Wainwright, Alaska 99703-0005
Phone: (907) 356-5500; FAX: (907) 356-5290

FINANCIAL PROVISIONS

1. In September 2002, approximately 7200 acres of land transferred to the USASMDC/U.S. Army Garrison, Fort Greely. This agreement between USASMDC/U.S. Army Garrison, Fort Greely and the U.S. Department of Interior, Bureau of Land Management (BLM), Alaska Fire Service (AFS) will become valid upon signature of both agencies. The intent is for this agreement to be in effect as of fire season May 2003.

2. Other Fire Management Services, including Pre-Attack Planning and Hazard Fuels Reduction, will be provided upon request, and on a reimbursable basis only upon receipt of the appropriate funding document from the USASMDC/U.S. Army Garrison, Fort Greely prior to performance of services. Hazard Fuel Reduction: Any treatment of vegetation that reduces the threat of wildfire ignition and/or reduces the fire intensity or rate of spread of a wildfire.

3. Fire suppression services are not reimbursable in consideration of the other services provided to AFS. Human caused fire ignitions may be subject for review under the BLM fire trespass process.

4. Upon request, and upon receipt of written authorization and a funding document PRIOR TO PERFORMANCE OF SERVICES:

a. Provide National Wildfire Coordinating Group (NWCG) approved personnel to perform hazard fuel reduction work on USASMDC/U.S. Army Garrison, Fort Greely land.

b. Provide technical advice and support services related to various aspects of fire management activities on USASMDC/U.S. Army Garrison, Fort Greely land; i.e. pre-attack planning, hazard fuel reduction, fire prevention, and prescribed fire activities.

c. Fire Management will be mutually agreed upon formally in writing. These services may be provided in exchange for temporary housing of AFS personnel performing fire management functions on Fort Greely, on a case-by-case basis, and within the Receiver's capability to provide the service.

5. USASMDC/U.S. Army Garrison, Fort Greely will remit payments for reimbursable support to: Alaska Fire Service, P.O. Box 35005, Fort Wainwright, Alaska 99703.

FIRE PROTECTION

SUPPLIER WILL: BLM/AFS

Provide wildland fire suppression services on lands belonging to USASMDC/U.S. Army Garrison, Fort Greely, AK on a non-reimbursable basis. On-site responsibilities for suppression action and coordination of support will be under the authority of AFS.

Conduct a pre-fire season meeting and a post-fire season review annually. The post-fire season review may be held in conjunction with AFS Interagency Fall Fire Review. The Manager, AFS, will notify in writing, the U.S. Army Garrison, Fort Greely Fire Chief, the Fort Greely Garrison Commander, the Director of Public Works, and the Director of Operations, Plans, Training, and Mobilization of the time and place of the meeting. Operating procedures and prevention measures will be clarified and reviewed.

Review and update annually fire suppression levels in accordance with the Alaska Interagency Fire Management Plan. Use a mutually agreed upon Fire Management Option Map defining areas within the USASMDC/U.S. Army Garrison, Fort Greely military reservation with predetermined levels of fire protection.

Request Explosive Ordnance Disposal (EOD) services through the Fort Greely Post Commander, via the Fort Greely Fire Department, (907) 873-3473.

Annually update and keep current maps and information related to ordnance impact areas.

Notify the USASMDC/U.S. Army Garrison, Fort Greely representative of fire prioritization when military lands are involved or may potentially be endangered. [Fire suppression prioritization and allocation of resources will be based on statewide fire activity and the Multi-Agency Coordination Group (MAC Group) decisions.]

Over flights of Fort Greely should be coordinated with the Range Control Office and the Allen Army Airfield Manager.

Upon receipt of written authorization and a funding document PRIOR TO PERFORMANCE OF SERVICES:

a. Provide, upon request NWCG qualified personnel to perform hazard fuel reduction work on USASMDC/U.S. Army Garrison, Fort Greely land.

b. Provide, upon request technical advice and support services related to various aspects of fire management activities on USASMDC/U.S. Army Garrison, Fort Greely land; i.e. pre-attack planning, fire hazard reduction, fire prevention, and prescribed fire activities.

RECEIVER WILL: USASMDC/U.S. Army Garrison, Fort Greely

Provide initial fire response to all lands managed by USASMDC/ U.S. Army Garrison, Fort Greely, and within Receiver's capability, USARAK managed lands East of Delta River that are accessible by vehicle. All responders must be NWCG qualified fire personnel.

Upon the request of AFS, designate the USASMDC/U.S. Army Garrison, Fort Greely Fire Chief or his/her representative as the agency representative/liaison officer to the incident commander.

Provide representation to the BLM, pre-fire season meeting and to the post fire season review. The U.S. Army Garrison, Fort Greely representatives will include:

a. The U.S. Army Garrison Fort Greely Fire Chief or his designee.

b. Environmental Division personnel.

c. Upon request from USARAK, Explosive Ordnance Disposal (EOD) personnel.

d. Other designated officials deemed appropriate.

Promote and implement a fire prevention plan for U.S. Army Garrison, Fort Greely lands.

Provide facilities and land adjacent to Allen Army Airfield to support large-scale fire operations for lands managed by USARAK or USASMDC/U.S. Army Garrison, Fort Greely.

Provide space at Fort Greely (Allen Army Airfield) for aerial retardant mixing and loading.

Note: This site is maintained by the Delta Area Division of Forestry. BLM, AFS utilizes this State of Alaska operated facility for retardant operations. This agreement will serve as the document to maintain the use of this facility as current.

Provide use of the Army Allen Airfield for government contracted aircraft to include fixed wing and helicopters.

Upon formal approval by the Army, provide funding documentation prior to performance of hazard fuel reduction work. Within capabilities, provide housing on either a reimbursable basis or exchange for services for AFS personnel performing fire management functions on Fort Greely. (When mutually acceptable, this exchange may be used in place of providing a funding document for fire hazard reduction work.)

Provide BLM AFS notification of changes, which may affect levels of fire protection such as structures built, sensitive areas, or sites that wildfire may destroy.

Upon request of AFS, provide EOD support within 24 hours when fire is on military lands.

Provide BLM, AFS, with maps defining known impact areas (dud area/hot zones). These areas will be classified as limited with no "on the ground" fire suppression due to the hazards posed by unexploded ordnance and hazardous particulate matter (smoke with hazardous chemical properties).

TRAINING SERVICES

SUPPLIER WILL: Provide assistance in the training of fire department personnel, and assist in current qualification training.

RECEIVER WILL: Comply with BLM, AFS, incident qualification policies and procedures for wildland firefighting.

UNIQUE PROVISIONS

FORT GREELY:

Key personnel, telephone numbers, and radio frequencies:

a. Information notes/standard operating procedures should be updated annually with any changes in pertinent facts such as:

(1) The names of individuals occupying key positions.

(2) Any pertinent telephone number changes.

(3) Changes in radio frequencies.

b. Key positions, telephone numbers, and radio frequencies at Fort Greely include:

(1) Post Commander, Fort Greely - (907) 873-4206.

(2) Director of Public Works, Fort Greely - (907) 873-4582.

(3) Range Control Manager, Fort Greely - Voice (907) 873-4714; FAX - (907) 873-4723.

(4) Fire Department, Fort Greely.

(a) Fire Chief - (907) 873-4625/3473.

(b) Assistant Chief - (907) 873-3473/4489.

(c) Facsimile Number - (907) 873-3425.

(5) Allen Army Airfield Manager - (Telephone Number TBD).

(6) Fort Greely Fire Department Radio Frequency - Contact the Fort Greely Fire Department - (907) 873-4625/3473/4489.

***Security Issues/Access to the USASMDC/U.S. Army Garrison, Fort Greely.** AFS will follow any security procedures set forth by the U.S. Army Garrison, Fort Greely.

***Note:** Given the nature of wildfire emergency response, special consideration must be applied for permission to access USASMDC/U.S. Army Garrison, Fort Greely lands during the wildfire season. This typically will fall within the months of May thru August.

INFORMATION NOTES
FIRE SUPPRESSION

1. Bureau of Land Management, AFS, has the responsibility for suppression of wildland fires on Army land. Assets include: smoke jumpers, Hot Shot crews, support personnel, air tankers, and other types of aircraft that are available for fire suppression. These forces can be used throughout the state and can be based at different locations depending on current and expected fire occurrence. AFS and the State of Alaska share resources to meet the demand for suppression forces, and both agencies will bring up additional forces to support the actions within the state.

2. The BLM, AFS, has the responsibility for wildland fire suppression of the lands that were withdrawn for use by the Army. The AFS has a reciprocal fire protection agreement with the State of Alaska for providing fire suppression on each other's land. The State has on occasion acted as a representative of the BLM, AFS, and taken control of Army fires, but the responsibility and control of actions taken will reside at AFS.

3. On-site responsibilities for suppression actions and coordination of support will be the incident commander on site. This will be an AFS person or someone acting as an agent for AFS. The allocation and prioritization of forces will be the responsibility of Alaska Interagency Fire Coordination Center, Initial Attack Dispatch Office. These decisions will be based on resources available and fire priorities statewide.

4. The Alaska State Fire Management Plan establishes four fire management options:

   a. Critical Protection.

   b. Full Protection.

   c. Modified Protection.

   d. Limited Action.

5. Intent of Management Options:

a. Critical Protection Management Option. This option is specifically created to prioritize suppression action of wildland fires that threaten human life, inhabited property, and designated physical developments. Unquestioned priority over all other wildfires is automatically given to those which demonstrate the imminent potential for causing damage to human life and inhabited property. The designation of a site (area) with this option is left to the discretion of the land manager/ owner with resource management jurisdiction on the surrounding lands.

b. Full Protection Management Option. Areas assigned this designation will receive aggressive initial attack and suppression efforts on all fire starts until the fires are declared out. This option was designed for the protection of cultural and historical sites, uninhabited private property, high resource value areas, and those types of things which require wild land fire protection but do not involve the protection of human life and habitation.

c. Modified Action Management Option. This option provides a level of protection between Full and Limited. The intent is to provide manager/owners with an alternative for those lands that require a relatively high level of protection during critical burning periods, but a lower level of protection when the risks of large, damaging fires is diminished. The intent is to reduce suppression costs and increase resource benefits during the entire fire season through its two distinct operational responses to fire.

d. Limited Action Management Option. This category recognized those areas where suppression actions need only be to the extent necessary to keep a fire within the management unit or to protect critical sites within the area.

APPENDIX C
References

Alaska Interagency Wildland Fire Management Plan, 2010

Master Cooperative Wildland Fire Management Agreement, Exhibit C, Alaska Statewide Annual Operating Plan, 2012

Army Regulation 200-1, Environmental Protection and Enhancement, 2007

Army Regulation 420-1, Chapter 25, 2008

Department of the Army. 2002. Army Wildland Fire Policy Guidance

DoD Instruction, 6055.06, 2006

Inter-departmental Support Agreement Number BLM No. LAI 03 0001 U.S. Army Space and Missile Defense Command (USASMDC)/U.S. Army Garrison, Fort Greely, AK and the U.S. Department of Interior, Bureau of Land Management (BLM), Alaska Fire Service (AFS)

Military Munitions Response Plan, Site Inspection Plan, 2007

National Wildfire Coordinating Group (NWCG) Wildland and Prescribed Fire Qualification System Guide (PMS 310- 1/NFES 1414), January 2000

Norum, R., 1980. Fire Behavior in Alaska. U.S.D.A. Forest Service, Institute of Northern Forestry

Salcha-Delta Soil and Water Conservation District, Fort Greely Ecological Land Survey, 2011

USAG-AK ,Integrated Natural Resources Management Plan, Volume II, Annex C Forest and Wildland Fire Management

U.S. Army Garrison, Fort Greely Integrated Natural Resources Management Plan, 2007-2011

U.S. Army Garrison, Fort Greely Integrated Cultural Resources Management Plan 2011-2015

APPENDIX D
Definitions

ADEC	Alaska Department of Environmental Conservation
AFS	Alaska Fire Service
AICC	Alaska Interagency Coordination Center
ALMR	Alaska Land Mobile Radio
AR	Army Regulation
AWFCG	Alaska Wildland Fire Coordinating Group
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
CPR	Cardio-Pulmonary Resuscitation
DES	Directorate of Emergency Services
DOD	Department of Defense
DOF	State of Alaska, Dept. of Natural Resources, Division of Forestry
DPTMS	Directorate of Plans, Training, Mobilization, Security
DPW	Directorate of Public Works
EMT-1	Emergency Medical Technician
F&ES	Fire & Emergency Services
FMWR	Directorate of Morale Welfare Recreation
FS	Forest Service
GIS	Geographic Information System
GPS	Global Positioning System
HSPD-5	Homeland Security Presidential Directive 5
ICRMP	Integrated Cultural Resources Management Plan
ICS	Incident Command System
INRMP	Integrated Natural Resource Management Plan
ISSA	Inter-Service Support Agreement
IWFMP	Integrated Wildland Fire Management Plan
MEC	Munitions and Explosives of Concern
NEPA	National Environmental Policy Act
NFES	National Fire Equipment Service
NFO	Natural Resource Branch (BLM)
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NIMS	National Incident Management System
NRHP	National Register of Historic Places
NWCG	National Wildfire Coordinating Group
PAO	Public Affairs Officer

PPE	Personal Protective Gear
USAG Fort Greely	United States Army Garrison Fort Greely
USAG-AK	United States Army Garrison Alaska
USDA	United States Department of Agriculture
UXO	Unexploded Ordinances
WUI	Wildland Urban Interface