Department of the Army

U.S. Army Alaska
Environmental Assessment and
Finding of No Significant Impact

Grow the Army
Force Structure Realignment

September 2008

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FINDING OF NO SIGNIFICANT IMPACT

The National Environmental Policy Act of 1969 (NEPA) requires federal agencies to consider the potential environmental impacts prior to undertaking a course of action. Within the Department of army, NEPA is implemented through regulations promulgated by the Council on Environmental Quality (40 Code of Federal Regulations (CFR) Parts 1500-1508) with supplemental requirements provided under Army Regulations 32 CFR Part 651, (*Environmental Analysis of Army Actions*). In adherence with NEPA, 40 CFR 1500-1508, and 32 CFR Part 651, U.S. Army Garrison Fort Richardson (USAG Fort Richardson) and U.S. Army Garrison Fort Wainwright (USAG Fort Wainwright) have prepared an Environmental Assessment (EA) to consider the environmental effects of implementing "Grow the Army" and force structure realignment in Alaska.

Description of Action: In early 2008, the Department of the Army identified the need to grow and realign its forces in support of operations in the Pacific Theater. This need precipitated preparation of the *Final Supplemental Programmatic Environmental Impact Statement (SPEIS) for Growth and Force Structure Realignment to Support Operations in the Pacific Theater (2008)*. The SPEIS examined the environmental and socio-economic effects of several potential stationing scenarios affecting unit strength at suitable Army installations in Alaska. Final Army stationing decisions for Alaska were announced and explained in the SPEIS Record of Decision (ROD) on 11 September 2008. As a consequence of that decision, an additional 1,773 Soldiers and their Families will be added to Fort Richardson, Alaska (FRA) and an additional 425 Soldiers and their Families will be added to Fort Wainwright, Alaska (FWA). These new units will use existing Army training lands for weapons and vehicle maneuver training. However, existing housing, weapons ranges, administrative facilities, and maintenance facilities at FRA and FWA are not sufficient to absorb the increased demands represented by these new units, Soldiers and their Families. This site-specific Environmental Assessment (EA) analyzes the most appropriate means of accommodating the projected growth within Alaska, and provides detailed information and analysis regarding the environmental impacts that would result.

At FRA, construction of additional garrison infrastructure is required in order to accommodate stationing of an additional 1,773 Soldiers. To meet mission requirements, all new facilities would be sited within the existing cantonment footprint on FRA, and some would require demolition and replacement of existing facilities. Several upgrades to training range facilities are needed to meet doctrinal training and standard range design requirements. Although there is no need for new ranges, four existing ranges within the Small Arms Complex would be expanded through the addition of more firing lanes to support the increased number of Soldiers.

In order to support the stationing of 425 Soldiers at FWA, the Army will need to construct new garrison support facilities. Mission considerations require all projects to be sited within the existing FWA cantonment footprint. Similar to FRA, the additional Soldiers will require upgrades to four existing training range facilities within the Small Arms Complex.

Alternatives Considered in the Analysis:

Alternative One - Support the stationing of new units associated with Army growth and realignment in Alaska (Proposed Action). Actions proposed as part of this alternative would accommodate SPEIS ROD stationing decisions by constructing new support facilities and expanding existing training ranges at FRA and FWA. This alternative also includes an associated increase in live-fire and maneuver training on all Army lands in Alaska, to include Tanana Flats, Yukon, and Donnelly East and West training areas.

Alternative Two - No Action. Soldiers would be assigned to Alaska but corresponding construction would not take place within the cantonment areas of either FRA or FWA. In addition, there would be no expansion of training ranges within the FRA or FWA Small Arms Range Complexes; nor would there be any increase in training on Army managed training lands in Alaska.

Preferred Alternative: The preferred alternative of U.S. Army Garrison Fort Richardson and U.S. Army Garrison Fort Wainwright is Alternative One - *Support the stationing of new units associated with Army growth and realignment in Alaska*.

Procedure: An analysis of the potential environmental impacts associated with the two alternatives is presented in the *Environmental Assessment for Grow the Army and Force Structure Realignment in Alaska (September 2008).* The Assessment was made available for public review and comment. The Army did not receive any public comments.

Summary of Anticipated Environmental Effects: This FNSI incorporates by reference the methodology and analysis contained with the attached EA, summarized below. The Proposed Action would produce minor to moderate (insignificant) impacts to the resource categories listed below. No resource category would experience severe (significant) impacts.

Summary of Environmental Consequences - FRA

Resource Categories	Alternative One: Preferred	Alternative Two: No Action
Air Quality	Minor	No Impact
Cultural Resources	Minor	No Impact
Soil Resources	Minor to Moderate	No Impact
Biological Resources	Minor to Moderate	No Impact
Vegetation	Minor to Moderate	No Impact
Wildland Fire Management	Minor to Moderate	No Impact
Public Access & Recreation, Human Health and Safety	Moderate	No Impact
Socioeconomics	Minor to Moderate	No Impact
Wetlands	Moderate	No Impact
Water Resources	Moderate	No Impact
Facilties	Minor to Moderate	No Impact
Traffic & Transportation	Moderate	No Impact

Summary of Environmental Consequences - FWA

Resource Categories	Alternative One: Preferred	Alternative Two: No Action
Air Quality	Minor	No Impact
Cultural Resources	Minor to Moderate	No Impact
Soil Resources	Minor to Moderate	No Impact
Biological Resources	Minor to Moderate	No Impact
Vegetation	Minor to Moderate	No Impact
Wildland Fire Management	Minor to Moderate	No Impact
Public Access & Recreation, Human Health and Safety	Moderate	No Impact
Subsistence	Moderate	No Impact
Socioeconomics	Minor	No Impact

Wetlands	Moderate	No Impact

Summary of Environmental Consequences – DTA

Resource Categories	Alternative One: Preferred	Alternative Two: No Action
Cultural Resources	Moderate	No Impact
Soil Resources	Minor to Moderate	No Impact
Biological Resources	Minor	No Impact
Vegetation	Minor	No Impact
Wildland Fire Management	Minor to Moderate	No Impact
Public Access & Recreation, Human Health and Safety	Minor	No Impact
Wetlands	Minor to Moderate	No Impact
Water Resources	Minor to Moderate	No Impact
Traffic & Transportation	Minor to Moderate	No Impact
Invasive Species	Minor to Moderate	No Impact

Anticipated Cumulative Environmental Impacts: The Proposed Action would have no cumulative impacts or contribute to minor adverse cumulative impacts for the majority of resource categories at all three installations. The following VECs are anticipated to experience moderate adverse cumulative impacts as a result of the proposed action: air quality (FWA and FRA), soil resources (FRA, FWA, and DTA), biological resources (FRA), Wetlands (FWA), facilities (FWA), energy (FWA), land use (FWA), haz mat/haz waste (FWA), public access and recreation and human health and safety (FRA), and invasive species (DTA). The Proposed Action would not result in severe impacts to any resource area.

Mitigation Measures: Mitigation measures identified by Army subject matter experts will serve to reduce the adverse effects to impacted resource areas. The following measures, which are discussed in Chapter 3.0 of the *Environmental Assessment for Grow the Army and Force Structure Realignment in Alaska (September 2008)* and incorporated into this FNSI, will be undertaken and completed as part of the Proposed Action.

Air Quality

- Existing range and training area management programs (ITAM program) will continue to be implemented and improved as necessary to maintain the full functionality and environmental sustainability of Army lands.

Cultural and Historic Resources

- Perform Section 110 cultural resource surveys on Alaska lands. The identification of historic properties allows for them to be taken into account in management decisions.
- Continue to meet legal obligations under Section 106 of the National Historic Preservation Act (NHPA). Fulfilling obligations under Section 106 ensures that cultural resources are identified and considered in decision-making involving activities that could potentially impact cultural resources.
- Continue to implement the Integrated Cultural Resources Management Plan (ICRMP). The ICRMP provides guidance on the best methods for compliance with cultural resources management responsibilities.
- Continue to curate discovered artifacts with federally-certified museums, per the NHPA.

Soil Resources

- Continue to conserve and manage soil resources through planning level soil and topographical surveys, soil resource monitoring, and soil resources rehabilitation and management strategies.
- Continue to implement the Draft Natural Resources Guidance from Army Chief of Staff for Installation Management (U.S. Army 2007) to identify and map soils, correlate soils to permafrost areas, and establish relationships among components of terrain.
- Continue to perform soil monitoring through the Range and Training Land Assessment Program, the monitoring component of ITAM. Annual Range and Training Land Assessment reports detail the levels of current and past disturbance and land condition resulting from military training and recreational use at FRA and FWA. Soil resources management at FRA and FWA is achieved through prevention activities and actual restoration of disturbed areas by implementing industry standard BMPs and techniques. Relevant BMPs used at FRA and FWA are detailed in the INRMP (INRMP, 2006) and in the ITAM Five Year Management Plan (USAG Alaska 2005).
- Monitoring and rehabilitation efforts of the Range and Training Land Assessment (RTLA) and Land Rehabilitation and Maintenance components of the ITAM program would be utilized to determine effects of training on soils and adjust training use. During spring break-up, training is limited when necessary to protect soils. Fugitive dust, as a result of ground disturbance from normal usage during summer months, would be minimized by utilizing best management practices (such as chemical soil stabilizers or water, when necessary) as described in the ITAM Five-Year Management Plan (USAG Alaska 2005).
- Impacts caused by off-road vehicle use would be minimized by timing, as much as is practical, training activities to coincide with the times of the year during which the lands are more resilient. For example, snow-pack would minimize the impacts to soils and permafrost. Additionally, where possible, trails and existing roadways would be hardened to increase the resiliency and capacity for the land to absorb additional traffic.

Wildlife

- Additional bear-proof containers and bear-resistant dumpsters would be considered as mitigation at FRA to reduce incidence of bear-human interaction within the cantonment area and on the small arms ranges. This would contribute to a reduced incidence of interruptions of live-fire training due to bears sited in the area. The issue also directly relates to the safety of Soldiers.
- Continued full implementation of the INRMP, which helps maintain natural resource sustainability.
- To the extent possible, vegetation removal associated with range construction within the Small Arms Range Complexes at FRA and FWA would be conducted outside the 1 May -15 July timing guidelines in order to avoid any disruptions to migratory bird habitat.
- Avoid all intentional takings of migratory birds and eagles by avoiding any visible migratory birds, eagles and any active migratory bird or eagle nests. Also avoid to the extent practicable engaging in vegetation-clearing activities between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds, eagles or active nests.
- Installation ITAM best management procedures are incorporated to minimize impact on fish habitat related to stream crossing and associated disturbance and/or erosion during maneuver training. In the event that a proposed action could adversely affect Essential Fish Habitat, appropriate consultation would occur.
- Continue to cooperatively manage the Delta Bison Herd with Alaska Department of Fish and Game to ensure sustainment of the military mission and the health of the bison population.

- Continue planting of blue grass in designated areas south of DTA's training areas to help bison move away from training areas in a safe, non-harassing manor.
- Continue to limit firing within 1,500 meters of bison.
- Continue prohibition of disturbance to bison by Soldiers during training events.

Vegetation

- In accordance with USAG Alaska Regulation 350-2, units conducting maneuver training on all affected training areas must adhere to specific control measures and avoid certain areas and specific activities that have been deemed environmentally incompatible with sound land management practices. In addition, live trees greater than four inches in diameter will not be cut or damaged during training without prior approval.
- Consideration will be given to native species as part of any revegetation initiative.
- Stabilize all disturbed areas, resulting from project construction, using native vegetation to minimize erosion and subsequent sedimentation of wetlands and streams.
- Continued full implementation of the INRMP to ensure natural resource sustainability.
- ITAM projects would continue to repair and provide vegetative cover to areas disturbed by maneuver training.
- Continue to adhere to the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. To the extent practicable, vegetation-clearing activities will occur between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds or active nests.

Invasive Species

- Conduct monitoring to determine extent of invasive species presence on Army lands in Alaska.
- Continue collaborative invasive species management efforts with local area agencies and entities and include recommendations from these efforts into the development of garrisons' invasive species programs.

Wetlands

- Where necessary, natural drainage patterns would be maintained by the installation of culverts of adequate number and size to prevent flooding or excessive drainage of adjacent wetlands.
- Continued implementation of the INRMP, which helps maintain natural resource sustainability.
- Continued adherence to all terms and conditions of Clean Water Act, Section 404 permits.
- ITAM projects would continue to repair and provide vegetative cover to disturbed areas, reducing the percentage of impact.
- Combat engineers must read and understand the policies of USARAK Range Regulation 350-2 prior to engaging in activities on training land. Any areas in which the engineer units propose to dig must be approved in advance by the installation's excavation approval process.

Wildland Fire

- Continue on-going actions to prepare the landscape for potential wildland fires (i.e., prescribed burns and thinning to restore ecosystem functions to fire and to reduce future fire severity).
- Continue to implement Integrated Natural Resources and installation wildland fire management plans.

Public Access and Recreation & Human Health and Safety

- Use of bear-proof containers and bear-resistant dumpsters at FRA.
- Continued monitoring and management of bear and moose in the FRA cantonment area.
- Increased use of signs and other public notification measures to increase public awareness of dangers of military training.
- Increased enforcement of recreational use requirements (e.g. USARTRAK policies).
- Continue use of advanced public notification of military training activities likely to restrict the use of Alaska Army lands for recreational, subsistence, and other uses.
- The ITAM program will continue to manage the impacts associated with live-fire and maneuver training on all ranges and training areas and restore training areas, not just to support realistic military training, but also to prevent degradation of these important multi-use resources.

Subsistence

- Continue use of advanced public notification of military training activities likely to restrict the use of Alaska Army lands for recreational, subsistence, and other uses.
- The ITAM program will continue to manage the impacts associated with live-fire and maneuver training on all ranges and training areas and restore training areas, not just to support realistic military training, but also to prevent degradation of these important multi-use resources.

Socioeconomics

- No foreseeable mitigation measures will be necessary to supplement the projects and activities included in the Proposed Action.

Water Resources

- Continue water resources programs and monitoring.
- Continue implementation of best management practices.
- Continue implementation of the INRMPs, including institutional controls and training programs for Soldiers.
- Implementation of water resource protective measures and restorative techniques as specified in the INRMP, Volume III, Supplements.

Facilities

- FRA and/or FWA housing representatives will coordinate directly with the local government, Chamber of Commerce, hotels, realtors, and other related parties to address any potential temporary housing needs while construction is still underway.

Traffic

- Implementation of recommended traffic/transportation and pedestrian improvements as detailed in the October 2006 *Fort Wainwright Transportation Plan.*
- Completion of upgrades to FRA Main Gate to facilitate traffic movement.
- Prepare a traffic study at FRA and surrounding area to provide information for future traffic planning efforts.
- All Army operations would follow USAG Alaska Regulation 55-2, *Transportation Operations and Planning in Alaska*, which establishes policies and procedures for USARAK units and agencies using transportation resources in support of Army operations.
- Continued management of environmental programs listed in current INRMPs (USAG Alaska 2002b,c) and continued provision of environmental awareness training to troops and civilians.

- Continued provision of portable containment systems for use at in-field refueling points that would be capable of containing potential fuel releases from fuel tanker vehicles. This would minimize the risk of area contamination from inadvertent petrochemical release.
- Continue convoy-permitting processes with Alaska Department of Transportation and Public Facilities.
- Consideration of alternate travel routes and methods for military convoys, including line haul, airlift, and rail, if available to help avoid traffic risks and impacts.
- Splitting of convoys into smaller vehicle groups and staggering of departure times, per USAG Alaska Regulation 55-2, *Transportation Operations and Planning in Alaska*, to ease traffic congestion problems.
- Continue public notification of imminent convoy activity, including specific days of convoy activity. This allows the public to avoid highway travel concurrent with military convoys.

Conclusion: Based on review of the information and analysis contained in the EA, the respective Commanders of U.S. Army Garrisons Fort Richardson and Fort Wainwright have determined that the implementation of the Preferred Alternative would not significantly affect the quality of the environment within the meaning of NEPA Section 102(2)(C). The preparation of an EIS for this action is not required.

Points of Contact: For further information, please direct requests to Ms. Jessica Garron, Attn: IMPC-FWA-PWE (Garron), 1060 Gaffney Road #4500, Fort Wainwright, Alaska 99703-4500 or via email: jessica.garron@us.army.mil. The final EA and FNSI are available at http://www.usarak.army.mil/conservation/NEPA_home.htm.

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

This EA analyzes and documents the potential site-specific impacts associated with stationing new units within US Army installations in Alaska.

In early 2008 the Army identified the need to grow and realign its forces in support of operations in the Pacific Theater. This need precipitated the 2008 SPEIS, which examined the environmental and socio-economic effects of several potential stationing scenarios affecting unit strength at suitable Army installations in Alaska. Final Army stationing decisions were announced and explained in the ROD for Army Growth and Realignment to Support Operations in the Pacific Theater (2008 GTA Pacific ROD). As per the analysis and decision contained in the ROD, the Army will proceed with its preferred alternative, Alternative 3, to accomplish growth and realignment of U.S. Army forces in Alaska. Implementing this Alternative would include stationing actions needed to implement Army-wide force structure changes to standardize Army forces for increased efficiency and operational effectiveness.

Stationing actions needed to support specific mission requirements of the Pacific Theater also included stationing of a Maneuver Enhancement Brigade (MEB) headquarters to coordinate, plan and synchronize the operations of new and existing combat support units.

Cumulatively, the Army decided to station and train approximately 2,200 additional Soldiers in Alaska. The ROD divides and allocates this overall growth between the two Army Garrisons in Alaska that are capable of providing suitable support to Soldiers, namely USAG Fort Richardson and USAG Fort Wainwright. More specifically, the ROD directs approximately 1773 Soldiers to FRA and 425 Soldiers to FWA. These stationing actions would occur between 2008 and 2013.

Incoming Soldiers would constitute new engineer, logistics, military police and other combat support (CS) and combat service support (CSS) units. In addition, the Army would station a MEB headquarters at FRA to provide enhanced engineering and logistics support and command and control. Combined, this growth would accomplish the goals that the Army outlined in the SPEIS: to more effectively align forces to support operations in the Pacific Theater and around the world; to better address military operational needs, national and regional security requirements; and to improve Soldier and Family quality of life by reducing the frequency and duration of combat deployments.

The stationing decisions evaluated in the SPEIS document were made with the understanding that follow-on site-specific NEPA analysis would be undertaken at affected installations to support project siting and construction. This Environmental Assessment provides decision makers, regulatory agencies, and the public with information on the potential environmental and socio-economic effects of implementing actions to support Army growth and realignment in Alaska, as well as an opportunity to contribute to and shape the decision-making process. The analysis contained within this document, coupled with information from other agencies and the public gathered through its scoping and commenting processes, will enable the Army decision-maker to assess environmental and socio-economic impacts of accommodating these additional units and make an informed decision on how to best implement Army stationing decisions contained in the 2008 Grow the Army (GTA) Pacific ROD.

1.2 Locations Affected by Army Stationing Decisions

1.2.1 Fort Richardson

USAG FRA encompasses approximately 61,000 acres in south-central Alaska. This Garrison is adjacent to Anchorage, Eagle River, and Elmendorf Air Force Base. The Knik Arm of Cook Inlet borders the north side of the installation, and Chugach State Park lies to the south and southeast. The Town of Eagle River lies along the northeast border. Anchorage and Elmendorf Air Force Base form the western boundary.

The cantonment area of FRA is situated at the base of the Chugach foothills, on the alluvial floodplain between the Chugach Mountains and the Knik Arm of Cook Inlet. Located approximately seven miles from downtown Anchorage, the cantonment area is bordered on the west by Elmendorf Air Force Base, on the north by training areas, on the east by the Glenn Highway, and on the south by Ship Creek, recreational areas, and training areas. FRA's cantonment area comprises approximately 9.4% of the installation's total land area and consists of 5,760 acres, all of which are considered developed and are characterized by significant historic use and widespread disturbance.

1.2.2 Fort Wainwright

USAG FWA is an Army Garrison located in the Tanana River Valley of central Alaska, north of the Alaska Range. The Garrison is comprised of four distinct parcels: Main Post, DTA,Tanana Flats Training Area (TFTA) and Yukon Training Area (YTA). Collectively these three areas encompass approximately 917,000 acres.

Main Post consists of approximately 13,700 acres along the eastern edge of the city of Fairbanks, 120 miles south of the Arctic Circle. This area is situated on a flat alluvial plain that is bordered to the west by Fairbanks, to the south by the Tanana River, and to the north and east by private and state land. TFTA lies across the Tanana River, south of the Main Post and is over 655,000 acres. YTA lies to the east and totals 247,952 acres. Its north and east boundaries are formed by the Tanana River, while the Wood River borders the western edge. YTA is located 16 miles east-southeast of Fairbanks, and the training area is bound by the Chena River on the north and Salcha River to the south. Eielson Air Force Base is located on YTA's west border.

1.2.3 Donnelly Training Area

DTA falls under the FWA Garrison command, but is treated separately through the remainder of this document. DTA is located approximately 100 miles southeast of Fairbanks and roughly 6 miles south of the town of Delta Junction. DTA encompasses approximately 624,000 acres. For management purposes, DTA is often divided by the Delta River into 2 parcels: DTA West is 531,000 acres and DTA East is 93,000 acres. There are three additional outlying parcels: the Gerstle River Training Area, the Black Rapids Training Area, and Whistler Creek Rock Climbing Area. The entire region lies within the Tanana River Valley.

The Little Delta River borders the west boundary of DTA West, and the Delta River and portions of its floodplains form the eastern border. The southern border follows a straight diagonal line from MacArthur Mountain to the Delta River, and is within the foothills of the Alaska Range. To the north, the boundary follows a diagonal line from the Little Delta River to Fort Greely. The

Delta River and its floodplain form the west side of DTA East, and Granite Creek forms the eastern border. The northern boundary roughly parallels the Alaska Highway, and the southern boundary lies at the base of the Alaska Range's foothills.

1.3 Purpose for the Proposed Action

The purpose of the Proposed Action is to implement the decisions made in the 2008 GTA Pacific ROD for Army Growth and Force Structure Realignment to Support Operations in the Pacific Theater. Army garrisons in Alaska must support training readiness, administrative requirements, deployment needs, and Soldier and Family quality of life for the new units coming to Alaska as part of GTA Pacific decisions.

Stationing decisions handed down by Headquarters of the Department of the Army direct that the following stationing actions and realignments take place at FRA and FWA:

Table 1.3-1 Grow the Army Stationing Decisions for Fort Richardson

Modular Force Changes to Existing Army Units	
UNIT NAME	**SOLDIER AUTHORIZATION**
4/25th IBCT Modular Force Changes	16
716th Explosive Ordnance Detachment	21
95th Chemical Company	2
Aerial Support Detachment	4
486 Transportation Detachment	21
Medical Forward Surgical Team (8th Medical Detachment)	10
23rd Engineer Company	100
84th Engineer Support Company (Airborne)	125
Combat Sustainment Support Battalion (CSSB)	78
Realignment of C 84th Engineer Company	-143
TOTAL	**234**
Army Growth and Realignment to Support Theater Mission Requirements	
UNIT NAME	**SOLDIER AUTHORIZATION**
6th Engineer Battalion (BN) Headquarters (Construction Effects)	175
56th Vertical Construction Engineer Company (6th Engineer BN)	162
Horizontal Construction Engineer Company (6th Engineer BN)	161
525th Engineer Concrete Section (6th Engineer BN)	12
240th Engineer Survey Team (6th Engineer BN)	14
545th Military Police (MP) Company	170
Ordnance Company (Ammunition Handling)	47
74th Signal Company	41
558th Quartermaster Company	117
793rd MP Battalion Headquarters Company (Headquarters and Headquarters Detachment [HHD])	73
TOTAL	**972**
Stationing of a MEB to Support Combat Readiness and Contingency Operations	
UNIT NAME	**SOLDIER AUTHORIZATION**
Maneuver Enhancement Brigade	**567**
Fort Richardson Total Soldier Authorization	**1,773**

Table 1.3-2 Grow the Army Stationing Decisions for Fort Wainwright

Modular Force Changes to Existing Army Units	
UNIT NAME	**SOLDIER AUTHORIZATION**
1/25th SBCT Modular Force Changes (Drivers & Deputy Cmd.)	16
1/25th MP Platoon Augmentation	42
65th Explosive Ordnance Company	44
Deactivation of 20th Public Affairs	-8
TOTAL	**94**
Army Growth and Realignment to Support Theater Mission Requirements	
UNIT NAME	**SOLDIER AUTHORIZATION**
472nd MP Company	170
559th Horizontal Engineer Company (6th Engineer BN)	161
TOTAL	**331**
Fort Wainwright Total Soldier Authorization	**425**

1.4 Need for the Proposed Action

1.4.1 Accommodate Soldier and Family Facility Requirements

Supporting the stationing of new GTA units would require the construction of new facilities to accommodate additional Soldiers and their Families. All Soldiers require adequate facilities for housing, training, administrative operations, and overall quality of life. Currently available facilities at FWA and FRA are insufficient to absorb the increased demands of new units and their Families. More specifically, existing housing, training ranges, maneuver areas, administrative functions, and maintenance of Army equipment would not support the needs of the Proposed Action. Additional facilities, ranges, and capabilities to meet these critical needs are therefore required.

To ensure that these facilities address incoming Soldiers' needs, sites for these new facilities must be located in a manner consistent with AR 420-1, Army Facilities Management, and other Army facility planning policies. Among the pivotal concerns here are:

- To the maximum extent practicable, Army organizations should locate their headquarters facilities, operational work facilities, and soldier living areas within reasonable proximity to one another as a means of enhancing unit mission effectiveness and cohesion
- New unit headquarters buildings (i.e. Battalion Operation Facilities [BOF], Company Operation Facilities [COF]), their operational work facilities (i.e. maintenance facilities, equipment storage areas, vehicle parking areas), and Soldier off-duty living areas (barracks), unless otherwise impracticable, must be in a location with cost-effective access to the existing utilities infrastructure (i.e. electrical, natural gas, water, waste water, and storm sewer systems). Such infrastructure exists within both the FRA and FWA cantonment areas.
- The places where Solders work and live must be located within easy access to existing life-support facilities such as the medical clinic, dining facilities, physical fitness center, and shopping facilities. All of these support facilities are located within the existing cantonment areas of both FRA and FWA and can adequately support the additional Soldiers involved in this proposed action.

1.4.2 Implementation of Modular Force Structure Recommendations in Alaska

On 12 October 1999, the Senior Leadership of the Army articulated a vision for the Transformation of the Army to ensure that it remained an effective operational force in the 21st Century. The Army's decision to transform began a dynamic 30-year process through which the Army is continuously assessing, calibrating, and adjusting its force structure to increase operational efficiency and adapt to new challenges. The implementation of modular force concepts has led to force structure changes at all Army echelons of operations. Changing to a modular standardized force structure has allowed the Army to rapidly adjust its structure across the entire footprint of the organization in response to emerging threats.

The Army has identified the need to modify its existing force structure in US Army garrisons in Alaska and to increase the overall number and type of combat support units available in Alaska to support operations in the Pacific Theater. FRA and FWA would experience unit gains through stationing and transfer of Soldiers and equipment from other installations and losses through deactivations in the same fashion that every Army installation is experiencing these unit realignments as part of the Army's force management decisions. Some of these stationing and transfer decisions pre-date the decisions made in the SPEIS, and in fact contribute to the baseline conditions that were used in SPEIS's analysis. The need to support the transition of the Army to a modular force structure within US Army garrisons in Alaska has been included in the Army's need for implementing the Proposed Action.

1.4.3 Support Unit Training Strategies and Doctrinal Requirements

Supporting the training strategies and doctrinal training requirements of GTA units in Alaska is a critical element of need of the Proposed Action. Training needs are shaped by national security and national defense policy, projected mission requirements, new technology, and operational experience. Training infrastructure requirements are outlined in Training Circular (TC) 25-8, *Training Ranges* and general training strategies and requirements are outlined in Field Manual (FM) 7.0 *Training the Force*. Some basic training tasks, such as rifle marksmanship and individual weapons qualification, are common to all units. Other tasks are specific to certain types of units. Ultimately, unit commanders assess mission requirements and define the specific training needs of their units based on future mission needs.

Training units to function effectively in the current operational environment requires large maneuver training areas, a full suite of firing ranges, and increased focus on urban operations facilities. Trends towards greater urbanization in operational theaters across the globe require the Army to provide training facilities that replicate urban operating environments. Military experience from Iraq and Afghanistan has also demonstrated that intelligence gathering, Special Forces operations, and the use of joint and multi-national assets are critical to accomplishing missions. Training increasingly must facilitate effective use of these assets in urban environments.

High-quality training that prepares Soldiers for the operational environment is essential to ensuring the success of the Army units in Alaska as they deploy to support the nation's security and defense needs. Training infrastructure on USAG FRA and USAG FWA training lands must be used effectively and sustainably to ensure that Soldiers meet training standards to attain proficiency in military skills prior to their deployments abroad so that they can accomplish their missions and return home safely.

1.4.4 Maintaining a High Quality of Life for Soldiers and their Families

In 2007, the Secretary and Chief of Staff of the Army signed the Army Family Covenant which defined the Army's commitment to improving services and quality of life for the Army's Soldiers and their Families. The covenant recognizes the extraordinary personal sacrifices that both Soldiers and their Families have been making to support operations around the world and commits the Army to improving access and quality of child development and child care, expanding access to education and health care, and improving the quality of Family housing. This Army Family Covenant would be upheld within Army garrisons in Alaska, and adherence to its provisions is an essential element of need in the effort to station new units associated with the growth and realignment of Army forces in Alaska.

1.4.5 Installation Sustainability

On October 1, 2004, the Secretary of the Army and the Army Chief of Staff issued *The Army Strategy for the Environment* (Army, 2004a), which focuses on the preservation of the Army's training lands and the interrelationships of mission, environment, and community. A sustainable installation simultaneously meets the current Army mission and conserves installation resources to meet future mission requirements while safeguarding human health, improving quality of life, and enhancing the natural environment. A sustained natural environment is necessary to support military training operations and maintain military readiness.

Army garrisons in Alaska have implemented numerous programs to achieve more sustainable installations and use of training lands. To manage training lands in a sustainable manner, USAG FRA and USAG FWA maintain land and environmental management programs to support sound natural resource management and land stewardship. The ITAM program establishes a uniform land management program, elements of which include inventorying and monitoring of land condition, implementation of land rehabilitation and education of Soldiers and other land users to minimize adverse impacts. The INRMP for garrison lands in Alaska seek to optimize training opportunities and training realism while providing sustainable land management that would continue to support the Army's mission. Continuing sustainability of USAG FRA and USAG FWA operations and training lands is a key element of need for implementation of the Proposed Action.

1.5 Scope of the Analysis

This EA addresses environmental and socio-economic impacts affecting Army garrisons and training sites in Alaska. This site-specific EA has been developed in accordance with NEPA; the regulations issued by the Council on Environmental Quality (CEQ), 40 CFR Parts 1505-1508; and the Army's implementing procedures published in AR 200-2, *Environmental Effects of Army Actions*; and 32 CFR Part 651, *Environmental Analysis of Army Actions*. This EA serves as a decision-making tool for the siting of GTA unit facilities in Alaska. This EA incorporates the analysis of the 2008 SPEIS by reference.

Resource categories analyzed for the Proposed Action and alternatives include air quality, soil erosion, biological resources, vegetation, wildland fire management, invasive species, public access & recreation and human health & safety, wetlands, water resources, subsistence, facilities, and traffic. Discussion includes direct and indirect environmental impacts of the Proposed Action and alternatives, any adverse environmental effects which cannot be avoided should the Proposed Action be implemented, irreversible or irretrievable commitments of

resources, and cumulative impacts. All project sitings and activities analyzed in this EA are located within the boundaries of USAG FRA and USAG FWA lands.

1.6 Decision to be Made

This EA will provide the decision-makers, the Commanders of USAG FRA and USAG FWA, with the information necessary to evaluate the impacts associated with the Proposed Action and No Action alternatives. The decision-makers would take into account technical, economic, environmental, and social issues, and the Proposed Action's ability to meet the purpose and need and the objectives. This information may assist in the siting of projects needed to support Army stationing decisions in Alaska, as well as any decisions to eliminate or alter any portions of the Proposed Action.

Based upon this information and analysis contained within this EA, the decision-makers will decide whether or not the Proposed Action would have a significant effect on the human environment, as well as what if any mitigation measures would be appropriate.

1.7 Related Environmental Documentation

In 2004, The Army prepared the Final Environmental Impact Statement (EIS) for Transformation which describes the conversion of U.S. Army Alaska's Light Infantry Brigade to a Stryker Brigade Combat Team (SBCT). The EIS outlines future military operations by the SBCT combat team, the primary component supported by units reviewed in this EA.

In June 2006, USAG Alaska published the Final EIS for construction and operation of two fully automated and instrumented combat training facilities, a Battle Area Complex (BAX) and a Combined Arms Collective Training Facility (CACTF), located on training lands east of Jarvis Creek. That EIS addresses the environmental impacts occurring from collective training operations up to 238 days a year, and supporting up to 1,000 personnel and 165 combat vehicles at a time; and crew-served live-fire and simulated training at DTA. Units stationed at USAG Alaska may conduct some training at these facilities on DTA.

In February 2007, USAG Alaska approved the INRMP for Army Installations in Alaska (USAG Alaska, 2006). This plan describes standard policies and procedures for managing natural resources to ensure sustainability of Army lands. The accompanying EA and FNSI were signed in February 2007 and analyze the environmental impacts associated with the planned land management actions, including management designed to mitigate the effects of military training on USAG Alaska lands.

In August 2008, the Army issued a ROD (U.S. Army Environmental Command (USAEC), August 2008) for the Final Supplemental Programmatic EIS for Army Growth and Realignment Supporting Operations in the Pacific Theater (USAEC, July 2008). The SPEIS analyzed the potential environmental impacts from stationing 1,000 Soldiers or more at locations capable of supporting mission operations the Pacific Theater, to include FRA and FWA.

This EA tiers off the SPEIS and ROD. It also incorporates by reference the SPEIS, Transformation EIS, 2007-2011 INRMP, and the BAX/CACTF EIS.

1.8 Coordination with Agencies, Tribes, and the Public

During the programmatic SPEIS analysis process, the Army coordinated closely with the public, local, state, and federal agencies and Alaska Native tribes to ensure their awareness of the potential for Army growth and its associated requirements in Alaska. The Army once again worked with the public, agencies, and Alaska Native tribes during preparation of this EA to solicit feedback and provide information on actions that the Army is taking to support the stationing of units as part of growth and realignment.

1.8.1 Agency Coordination

The following list identifies the Federal, State, and local agencies and interest groups invited to participate in the review of this EA.

- Alaska Department of Environmental Conservation, *Division of Spill Prevention and Response*
- Alaska Department of Natural Resources, *Division of Mining, Land & Water*
- Alaska Department of Natural Resources*, Division of Forestry*
- Alaska Department of Natural Resources, *Division of Mining, Land & Water*
- Alaska Department of Fish and Game
- Alaska Department of Fish and Game, *Division of Habitat*
- Alaska Department of Natural Resources, *State Historical Preservation Office*
- Bureau of Land Management, *Alaska Fire Service*
- Bureau of Land Management*, Anchorage District Office*
- Bureau of Land Management, *Northern Field Office*
- U.S. Fish and Wildlife Service*, Assistant Regional Director*
- Municipality of Anchorage, Mayor Mark Begich
- Fairbanks North Star Borough, Mayor Jim Whitaker
- City of Fairbanks, Mayor Terry Strle
- City of Delta Junction, Mayor Mary Leith-Dowling
- U.S. Air Force, 354 Civil Engineering Squadron
- U.S. Army Corps of Engineers, Regulatory Branch, Anchorage
- U.S. Army Corps of Engineers, Regulatory Branch, Fairbanks
- U.S. Army Garrison Fort Greely
- Palmer Soil and Water Conservation District
- Salcha-Delta Soil and Water Conservation District

1.8.2 Government-to-Government Consultation

Federally recognized tribes maintain a unique political relationship with the Federal government, one that is based on the United States Constitution, treaties, and statutes. Native American tribes have been recognized as “domestic dependant nations” and retain a substantial degree of sovereignty over their affairs. When Federal actions have the potential to significantly affect tribal interests, consultation with tribal governments must be undertaken on a “government-to-government” basis. Tribal consultation must be considered separately from the public participation process mandated by statutes such as NEPA.

In accordance with USAG FRA and FWA responsibilities under NEPA; Executive Order (EO) 13175, Consultation and Coordination with Indian Tribal Governments; Department of Defense (DoD) American Indian and Alaska Native Policy; DoD American Indian and Alaska Native Policy Alaska Implementation Guidance; DoD Instruction 4710.02; and AR 200-4, Cultural Resources Management, government-to-government consultation regarding this EA has been

initiated with ten Alaska Native tribal governments: Dot Lake, Healy Lake, Eagle, Northway, Tanacross, Tetlin, Tyonek, Chickaloon, Knik and Eklutna.
USAG FRA and FWA have solicited input from these Native tribes to evaluate the potential effects of the Proposed Action on tribal resources, rights, and interests. A Native liaison with USAG FRA and FWA has been designated to work directly with tribal representatives.

1.8.3 Public Review Process

The public's participation is essential to a successful NEPA analysis. The Council on Environmental Quality (CEQ) and Army NEPA regulations provide opportunities for the public to participate in the EA process. The Army is required to notify the interested public when the EA is available and ensure that the public has access to the findings of the environmental analysis. USAG FRA and USAG FWA provided a public comment period for the Draft EAs, giving the public an opportunity to comment on elements of the Proposed Action prior to making a final decision.

The EA and Draft FNSI were made available for public review from 24 Sep to 10 Oct 08. This abbreviated public comment period was conducted in accordance with 32 CFR 651.14(b)(2)(iii) in order to accommodate timely construction of needed facilities. Conspicuous advertisements announcing the availability of the document were published prior to, during and at the end of the comment period. No public comments were received.

1.8.4 Cooperating Agency Status

The Army has not formally requested any agency to serve in the capacity of an official Cooperating Agency. In addition, no federal or state agency, interest group or Alaska Native tribe has requested this status.

1.9 List of Laws, Regulations, and Associated Consultations and Permits

Table 1.9-1 lists the applicable and relevant Federal laws and regulations and their associated regulatory agency consultations and permits that would be required with the implementation of the Proposed Action.

Table 1.9-1. List of Laws, Regulations, and Associated Consultations and Permits

Alaska Administrative Code 18AAC75
Alaska Department of Natural Resources (ADNR) Alaska State Anadromous Fish Act AS 41.14.870 ADNR Fishway Act AS 41.14.840
Alaska Department of Environmental Conservation (ADEC) Air Quality Operating Permit No. 236TVP01
American Antiquities Act [16 USC 431 et seq.]
American Indian Religious Freedom Act [42 USC 1996]
Archaeological and Historic Preservation Act [16 USC 469 et seq.]
Archaeological Resources Protection Act [16 USC 470aa et seq.]
BGEPA [16 USC 668 et seq.]
Clean Air Act (CAA) [42 USC 7401 et seq.]

CAA: National Ambient Air Quality Standards (NAAQS) State Implementation Plan (SIP) [42 USC 7409 et seq.]
Clean Water Act (CWA) [33 USC 1251 et seq. Sections 401 and 402]
CWA [33 USC 1313 Section 404]
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Superfund)
Endangered Species Act (ESA) of 1973 [16 USC 1531 et seq.]
Executive Order (EO) 11988: Floodplain Management
EO 11990: Protection of Wetlands
EO 12099: Federal Compliance with Pollution Control Standards [43 FR 47707 October 17, 1978]
EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations [59 FR 7629 February 16, 1994]
EO13045: Protection of Children from Environmental Health Risks and Safety Risks
EO 13112: Invasive Species [64 FR 6183 February 8, 1999]
EO 13186: Responsibilities of Federal Agencies to Protect Migratory Birds [66 FR 63349 December 6, 2001]
EO 13007: Indian Sacred Sites [61 FR 26771]
Farmland Protection Policy Act [7 USC 4201 et seq.]
Fish and Wildlife Coordination Act [16 USC 661-667e March 10, 1934]
Hazard Communication Standard [29 CFR 1910.1200]
Hazardous Materials Transportation Law [49 USC 51015127 et seq.]
Magnuson-Stevens Fishery Conservation and Management Act [16 USC 1801 et seq.]
MBTA [16 USC 703 et seq.]
National Historic Preservation Act, as amended [16 USC 470 et seq.]
Native American Graves Protection and Repatriation Act [25 USC 3001]
NEPA [42 USC 4321 et seq. 40 CFR 1500-1508] and Army Regulations 200-1; 32 CFR Part 651
Noise Control Act [42 USC 4901 et seq.]
Occupational Safety and Health Act [29 USC 651 et seq.]
Oil Pollution Prevention and Response; Non-Transportation-Related Onshore and Offshore Facilities [40 CFR 112]
Protection of Historic Properties [36 CFR 800]
Safe Drinking Water Act [42 USC 300j-9(i) December 12,1974]
Toxic Substances Control Act [42 USC 2601 et seq.]
U.S. Army, Alaska Pamphlet 200-1 Hazardous Materials and Regulated Waste Management

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This chapter describes a Proposed Action that would allow the Army to implement the growth and realignment of forces within U.S. Army Garrisons in Alaska. This chapter also describes alternative selection criteria, alternatives considered but not carried forward for further analysis, and the No Action Alternative, as required by NEPA (40 CFR 1508.25[b]).

2.2 Proposed Action

The Army's Proposed Action is to accommodate the stationing of new units associated with Army growth and realignment in Alaska by approving a variety of projects that would provide necessary support to incoming Soldiers and their families. Decisions made in the 2008 GTA Pacific ROD call for the stationing of approximately 1,773 new Soldiers at FRA and 425 at FWA. The Proposed Action addresses the needs of these incoming Soldiers by providing additional Soldier and Family housing and support facilities, upgrading ranges to meet increased training requirements, constructing administrative and maintenance facilities for Soldier offices and unit equipment, and ensuring that maneuver and live-fire training facilities can support additional use. Overall, Army in Alaska would take those actions necessary to support increased strategic deployment and mobilization requirements as required to support regional and global mission requirements. The Proposed Action includes:

- **Troop-Level Increases.** Accommodating an overall increase in Soldiers who would work, live, and train at US Army Garrisons in Alaska. Under the Proposed Action, approximately 2,200 Soldiers would be stationed at FRA and FWA.
- **Facility Removal and Construction/Renovation.** This includes removal of facilities and infrastructure that are no longer needed, relocation of facilities to support new construction, construction of new facilities and infrastructure, and renovation of existing facilities and infrastructure to support the new population and training activities.
- **Live-Fire Training and Maneuvers.** Provide for training activity for existing and new units stationed in Alaska which incorporates the need to balance any additional or different maneuver training, live-firing, and environmental management to meet the Army's integrated goals of maintaining military training readiness and sustaining lands for continued use. Live-fire training and maneuver activities under the Proposed Action would be similar to those described for the No Action Alternative. The training requirements of additional units are predicted to result in increased frequency of use of maneuver training areas and live-fire ranges. DTA is projected to support the majority of maneuver training requirements at the battalion level and above.
- **Phased Timing of Construction Projects.** The timing of construction projects would be contingent upon funding availability and priorities, and projects would likely be constructed in phases throughout the implementation period.
- **Responsiveness to Environmental and Training Conditions.** Factors beyond the Army's control, such as world stability, troop deployments, and climatic conditions do affect the implementation of training. Because environmental and training conditions are dynamic, training activity under the Proposed Action is a process by which the Army would monitor and respond to changing conditions to sustain the land for training and provide maximum troop readiness.

Figure 2.2-1. USAG Fort Richardson Overview

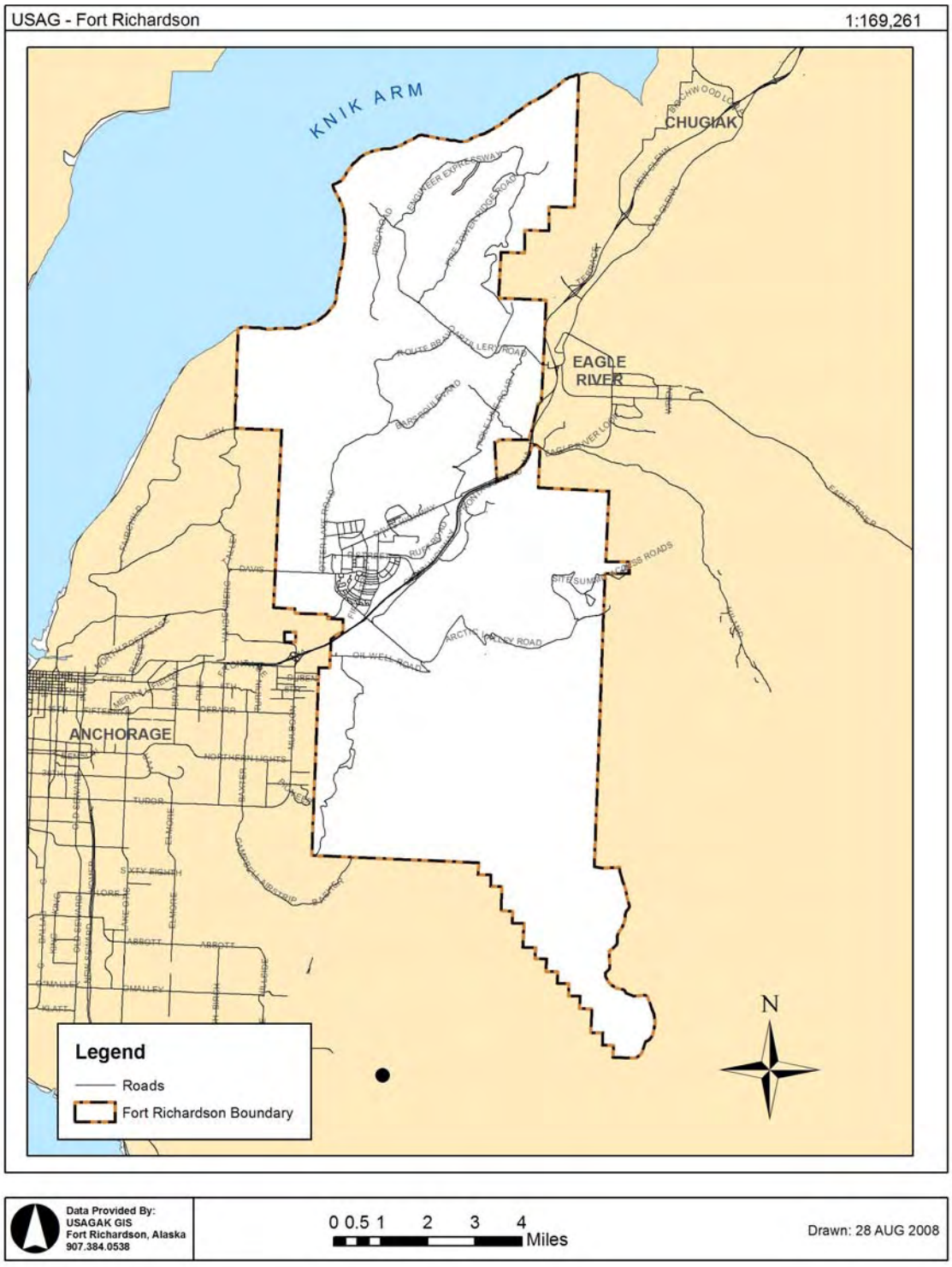
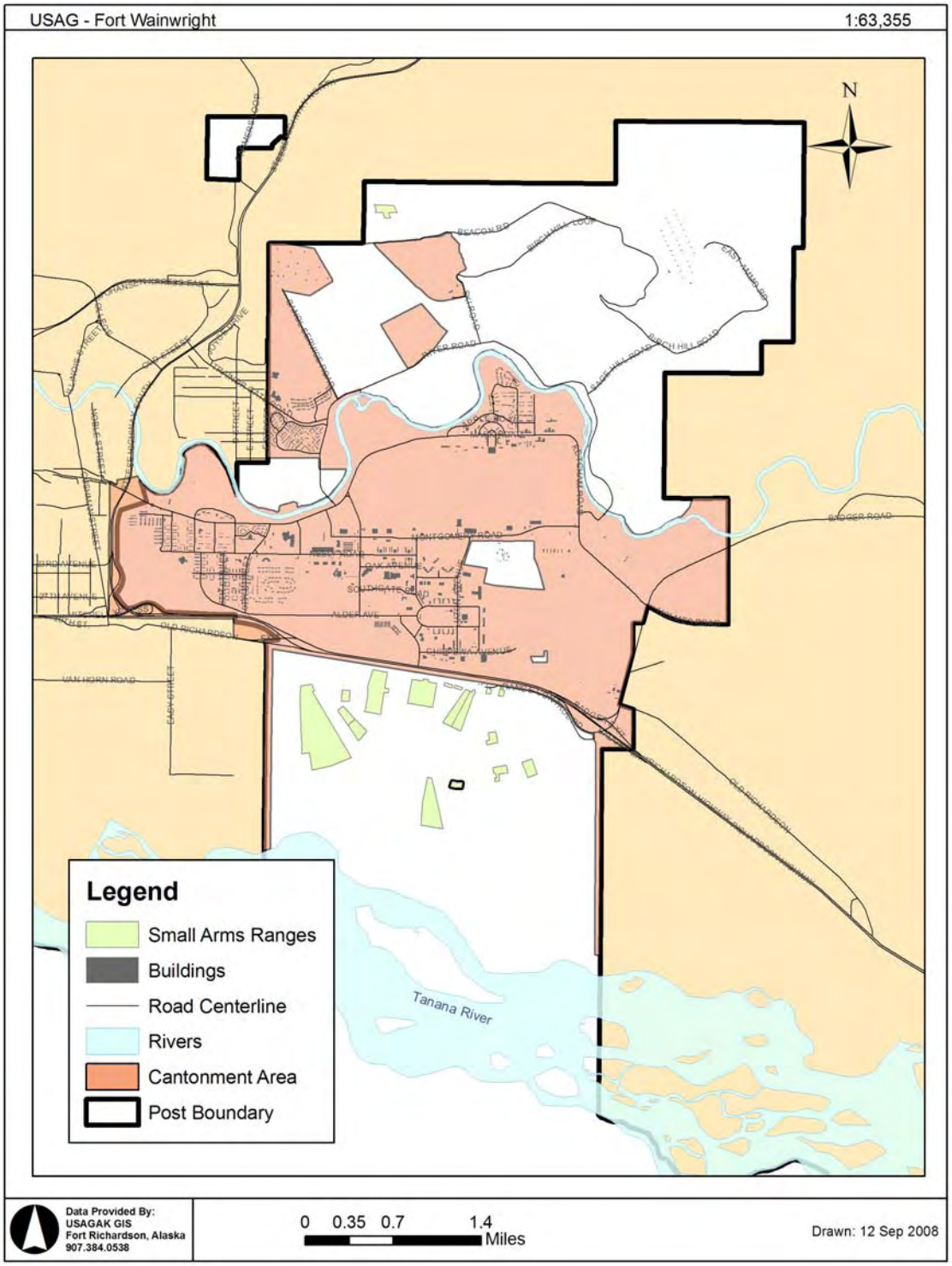


Figure 2.2-2. USAG Fort Wainwright Installation Overview



2.2.1 Changes in Force Structure and Population at FRA and FWA

This section presents the changes in force structure and population stemming from the 2008 GTA Pacific ROD.

Table 2.2.1-1. Projected Population Changes for USARAK Garrisons

	December 2007			GTA Action		After GTA Action		
Installation	Military	Dep.	Total	Military	Dep.*	Military	Dep.*	Total
FWA	6,341	7,400	13,741	425	496	6,766	7,896	14,662
FRA	5,677	7,722	13,399	1,773	2,428	7,462	10,150	17,612
Total	12,018	15,122	27,140	2,210	2,924	14,228	18,046	32,274

* estimate based on typical military ratios

2.2.2 Limited Alternatives

Decisions pertaining to the types and number of new units that would be stationed in Alaska have already been made by the GTA Pacific ROD. The stationing of additional units typically involves the construction of new facilities or construction improvements to existing facilities, as well as increased training usage of training facilities and maneuver sites. Because the Army has standard facilities and training requirements that mandate specific facilities with specific designs for specific units, there is reduced flexibility in terms of alternate means of accommodating the growth prescribed in the GTA Pacific ROD.

This document will therefore focus on identifying and analyzing the best manner of providing the facilities and services required under pre-existing stationing decisions, and it will do so based on specific on-site environmental conditions. Analysis of alternatives is largely contained within the Proposed Action's process for selecting potential sites for new construction and upgrades, as well as within discussion of appropriate mitigation measures.

2.2.3 Unit, Activity, and Equipment Descriptions

This section presents a brief description of the types of units, their equipment and training activities that would take place as part of the Proposed Action.

2.2.3.1 Combat Support and Combat Service Support Units

The units associated with growth in Alaska include CSS units that provide sustainment and logistical support and CS units that work directly with combat maneuver units to provide additional skill sets and capabilities to accomplish combat and peace support operations. CSS units are generally responsible for the transport of fuel, munitions, parts, food, medical supplies, and battlefield casualties. In addition, these units maintain vehicles, recover destroyed or damaged vehicles, and provide medical care to injured Soldiers. CS unit missions include providing engineering support, military police functions, chemical response capability, explosive ordnance detection and disposal, and other support missions. A brief description of CSS and CS units that would be stationed in Alaska and their activities is provided below.

Transportation Units

Mission. The mission of the Transportation unit is to transport, distribute and issue general military supplies and equipment, to include ammunition; fortification and construction material; water, subsistence, and water purification equipment; petroleum products; repair parts and end items; and medical supplies.

Primary Equipment. High Mobility Multi-Wheeled Vehicles (HMMWV) and other light trucks, cargo trucks with 5-ton and larger capacity, fuel trucks (5,000 gallon), and Heavy Equipment Transport (HETs) trucks for transporting armored combat vehicles.

Training. Live-fire training consists of individual weapons and crew-served weapons practice and qualification. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually. Soldiers would also conduct convoy live fire training and urban operations on an as needed basis.

Maneuver training consists of individual training and collective training at the platoon and company levels. The primary training events are loading, transporting and unloading cargo. Unit movements and logistical sites would be on roads, trails and maneuver areas. Force protection training (ex. convoy defense, position perimeter defense) is integrated into all training missions. Units would conduct multi-day small unit (platoon and company) training exercises as often as 5 times per year at each echelon of training, and would support combat maneuver elements and battalion and brigade training. Training impacts would also vary according to the size and weight of unit equipment and the types of activities the unit must engage in as part of its doctrinal operations.

Quartermaster Units

Mission. The mission of the Quartermaster unit is to receive, store, and issue general military supplies and equipment, to include fortification and construction material, water, subsistence, repair parts, and medical supplies.

Primary Equipment. HMMWVs and cargo trucks with 5-ton capacity.

Training. Live-fire training consists of individual weapons and crew-served weapons practice and qualification. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually.

Maneuver training consists of individual training and collective training at the platoon and company levels. Quartermaster units would deploy on multi-day training events up to 5 times per year at platoon and company echelons. These units would support combat maneuver unit training events when at home station. The primary training events are unloading, storing, and loading cargo. Training impacts would also vary according to the size and weight of the truck and cargo.

Medical Units

Mission. The mission of the Medical unit is to provide health care support at Army installations and during training and operational deployments.

Primary Equipment. HMMWVs, some configured as medical evacuation vehicles and cargo trucks with 5-ton capacity.

Training. Live-fire training consists of individual weapons and crew-served weapons practice and qualification. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually.

Maneuver training consists of individual training and collective training at the platoon and company levels. The primary training events are moving to or relocating medical operations, establishing unit medical operations, performing Combat Health Support, and defending the unit location. Unit movements and logistical sites would be on roads, trails and maneuver areas. Force protection training (ex. convoy defense, position perimeter defense) is integrated into all training missions. Units would support multi-day training exercises and provide attachment support for integrated training exercises on an as needed basis. Typically medical squads, platoons, or companies would deploy on multi-day training events up to 5 times per year at each unit echelon. These units would support combat maneuver elements and battalion and brigade training when at home station. Small units would train at the squad and platoon level to retain their training proficiency.

Engineer Units

Mission. The mission of engineer units is highly variable and diverse. In combat, engineer units may support the movement of combat maneuver units through bridging, minefield clearance, demolitions, and other functions. Construction engineers plan, prepare and provide project survey and design plans, conduct construction and repair of roads and buildings and provide a variety of support to military and civil construction efforts.

Primary Equipment. HMMWVs and other light trucks, cargo trucks with 5- ton or greater cargo capacity, construction equipment such as bucket loaders, bulldozers, road graders, cranes and concrete mixers. Combat engineers utilize a variety of armored personnel carriers, small excavators, bridge-laying vehicles, and tracked earth-movers. Route clearance units utilize v-hulled armor-plated vehicles as part of the units authorized equipment.

Training. Live-fire training consists of individual weapons and crew-served weapons practice and qualification. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually. In addition, combat engineers must maintain proficiency with use of demolitions charges.

Maneuver training consists of individual equipment training and collective training at the platoon and company levels. Maneuver training events vary with the mission of the engineer unit. Engineers in combat support roles maneuver on trails and off-road with their vehicles supporting the maneuver requirements of combat units. Construction engineers move to and from constructions sites, occupying construction sites and conducting the specific horizontal (roads and trails), vertical (buildings and structures), and concrete projects. Construction engineer

units also move from position to position and set up their construction operations in each one. Unit movements and positions would be on roads, trails and maneuver areas. Force protection training (ex. convoy defense, position perimeter defense) is integrated into all training missions. Units would conduct small unit (platoon and company) multi-day training maneuvers as often as 5 times per year at each echelon of training, and these units would support combat maneuver elements and battalion and brigade training. Training impacts would also vary according to the size and weight of unit equipment and the types of activities the unit must engage in as part of its doctrinal operations.

Military Police (MP) Units

Mission. The mission of the MP unit is to provide force protection, law enforcement and prisoner detention in combat operations across the battlefield operating space.

Primary Equipment. HMMWVs, Armored Security Vehicles (ASVs), and cargo trucks with 5-ton capacity.

Training. Live-fire training consists of individual weapons and crew-served weapons practice and qualification. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually. Select MP units are also required to engage in collective training on multi-purpose training ranges to practice engaging targets and coordinating fires from mounted weapons platforms while engaged in maneuver activities.

Maneuver training consists of individual training and collective training at the platoon and company levels. The primary training events are mounted and dismounted security operations, patrolling, movement control in forward operating areas, and prisoner detention, protection, and transport. Unit movements and positions would be on roads, trails and maneuver areas. Force protection training (ex. convoy defense, position perimeter defense) is integrated into all training missions. Units would conduct multi-day platoon and company level maneuvers as often as 5 times annually at each training echelon, and participate in collective unit maneuver rotations in support of combat maneuver units. A majority of maneuver training would occur on trails, roads, and other built up areas.

EOD Units

Mission. The mission of the Explosive Ordnance Disposal (EOD) unit is to identify, disarm, render safe, destroy and dispose of explosive devices and ordnance in combat and Garrison operations.

Primary Equipment. HMMWVs (sometimes armored) and cargo trucks with 5-ton capacity.

Training. Live-fire training consists of individual weapons and crew-served weapons. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually. EOD training also consists of identifying and rendering safe mines, explosive devices, and ordnance. These include inert and live explosive devices. EOD units utilize demolitions ranges and impact areas to conduct demolitions training.

EOD units conduct small unit maneuvers typically at the crew and platoon level. Training events include the movement to sites with suspected ordnance and the detection and

disarmament of suspected devices. Unit movements would be primarily on roads, trails and built up areas. Force protection training (ex. convoy defense, position perimeter defense) is integrated into all training missions. EOD units conduct multi-day small unit maneuver operations up to 5 times per year at platoon and company levels, and would support combat maneuver unit training events in addition to squad proficiency training.

Chemical Corps Units

Mission. The mission of chemical units is to protect U.S. forces and their allies from chemical, nuclear, or biological attack. Chemical Corps units provide equipment and training on protection from attack by non-conventional weapons through the use of detection and decontamination equipment.

Primary Equipment. HMMWVs and other light trucks, cargo trucks with 5-ton capacity, trucks for decontamination, tracked vehicles.

Training. Training consists of individual weapons and crew-served weapons. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually. Chemical training also consists of identifying and neutralizing chemical, nuclear and biological threats and decontaminating units hit with chemical agents. Chemical units also assist in delivery and planning for use of obscurants to facilitate combat operations.

Chemical units conduct small unit maneuvers typically at the crew and platoon level. Training events include the movement to sites of suspected chemical contamination and the establishment of unit decontamination sites. Unit movements would be primarily on roads, trails and built-up areas. Force protection training (ex. convoy defense, position perimeter defense) is integrated into all training missions.

2.2.3.2 Maneuver Enhancement Brigade (MEB)

Mission. The mission of the MEB is to enable and enhance the freedom of maneuver of a supported Army, joint, or multinational headquarters. The MEB augments maneuver capabilities to ensure the freedom of movement and security of Army combat maneuver forces and logistical operations. The MEB is a command and control Headquarters that can be tailored to mission requirements to provide specific maneuver, protection and logistics support roles. For the purposes of environmental analysis, the activities of the MEB are the same activities that would be engaged in by engineer, MP, signal, headquarters and other combat support units.

Primary Equipment. HMMWVs and cargo trucks with 5-ton or greater cargo capacity; Armored personnel carriers, logistics trucks, armored security vehicles, and up-armored HMMWVs.

Training. Live-fire training consists of individual weapons and crew-served weapons qualification. Individual and crew served weapons training occurs on fixed ranges with firing points and targets contained within a marked and designated area. Soldiers and crews train and qualify on these weapons twice annually.

Primarily a headquarters unit, MEB maneuver training consists of maneuvering on trails and in maneuver areas, establishing Tactical Operations Centers (TOCs) at select locations and establishing communications infrastructure to monitor events and control battlefield operations.

The MEB would typically support between 4-6 maneuver rotations annually. Each of these rotations could involve 2-3 week deployments in support of joint training exercises, brigade training events, and battle command simulation exercises for command headquarters units. These simulation exercises test commanders and the units' proficiency in providing command and control functions to subordinate MEB units using computer simulated scenarios. Exercises take place in a replicated tactical scenario and may or may not involve the training maneuvers of vehicles in a tactical setting.

2.2.4 Infrastructure Construction and Training Requirements for Units Stationed at Fort Richardson

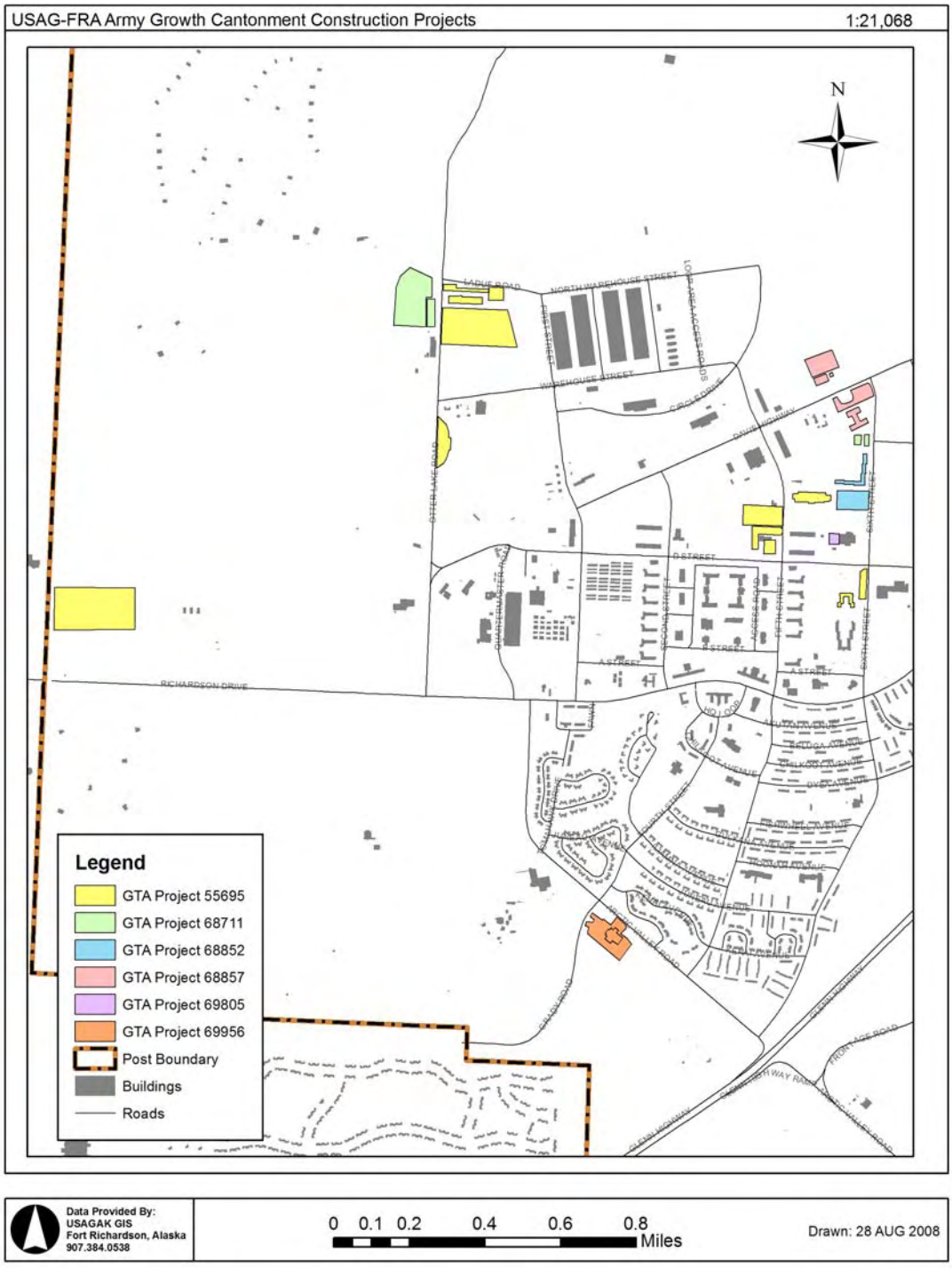
Cantonment Construction: In order to support the stationing of the additional 1773 Soldiers and Families, additional garrison infrastructure is required. These facilities include an MEB Complex (Project 55695), a Battalion Operations Complex (Project 68711), a COF (Project 68857), a Standard Design Barracks (Project 68852), a Child Development Center (Project 69956), and a Military Treatment Facility (Project 69805). All new facilities would be sited within the existing cantonment footprint on FRA, and some would require demolishing and replacing existing facilities. Each garrison construction project is described below and shown in figure 2.2.4-1.

MEB Complex (Project 55695). This project supports the stationing of the new MEB by providing administrative, billeting, and logistic and maintenance facilities. The project includes one combined Brigade/Battalion Headquarters Building with classrooms; one COF; five Person Readiness Modules of different sizes; and a 200 Soldier Barracks with parking. Supporting construction projects include a Tactical Equipment Maintenance Facility (TEMF); a Unit (equipment) Storage Facility and (tactical vehicle) parking; Oil Storage Building; and a diesel fuel storage and dispensing facility. An existing Recreational Vehicle (RV) storage lot would be relocated to accommodate the construction of the TEMF. Table 2.2.4-1 below details the siting locations for each of the facilities.

Table 2.2.4-1. MEB Complex Construction Locations

Project Structure	Location	Notes
Brigade HQ Building	North West Corner of D St. and Fifth St.	Combined with BN HQ
Battalion HQ Building w/classrooms	North West Corner of D St. and Fifth St.	Combined with Brigade BDE) HQ
MEB COF	North of the Troop Medical Clinic on 5th St.	Potential conflict with siting of MP Barracks
Vehicle Maintenance Shop (TEMF)	North end of existing RV storage lot on the corner of Loop Rd. and Ladur Rd.	
Enlisted Barracks	Southwest Corner of D St. and 6th St.	
Oil Storage Building	North end of existing RV storage lot on the corner of Loop Rd. and Ladur Rd.	Located with TEMF
Organizational Storage Building	North end of existing RV storage lot on the corner of Loop Rd. and Ladur Rd.	Located with TEMF
Relocated RV Storage Lot	Unnamed access road running West of and parallel to Power Line Rd. north of Davis Highway.	

Figure 2.2.4-1. USAG Fort Richardson Cantonment Construction Projects



Battalion Complex (Project 68711). This project supports the stationing of a new Military Police Combat Support Battalion by providing administrative, logistics and maintenance facilities. The project includes one Military Police Combat Support Battalion Headquarters with classrooms; one triplex COF; deployment equipment storage and a medium size vehicle maintenance shop with tactical vehicle parking. These facilities would be located in two separate locations. The first parcel is located on the southwest corner of the intersection of Ladue Road and Loop Road, while the second parcel is located on the southwest corner of the intersection of Davis Highway and Sixth Street.

Company Headquarters (Project 68857). This project supports the stationing of a new Engineer Horizontal Construction Company by providing administrative, logistics and maintenance facilities. The project includes one Engineer Horizontal Construction Company COF, deployment equipment storage space and a small vehicle maintenance shop with tactical vehicle parking. These faculties would be constructed at two locations: one parcel located on the Southwest corner of the intersection of Davis Highway and Sixth St., and a second parcel due north of that location on the opposite side of Davis Highway.

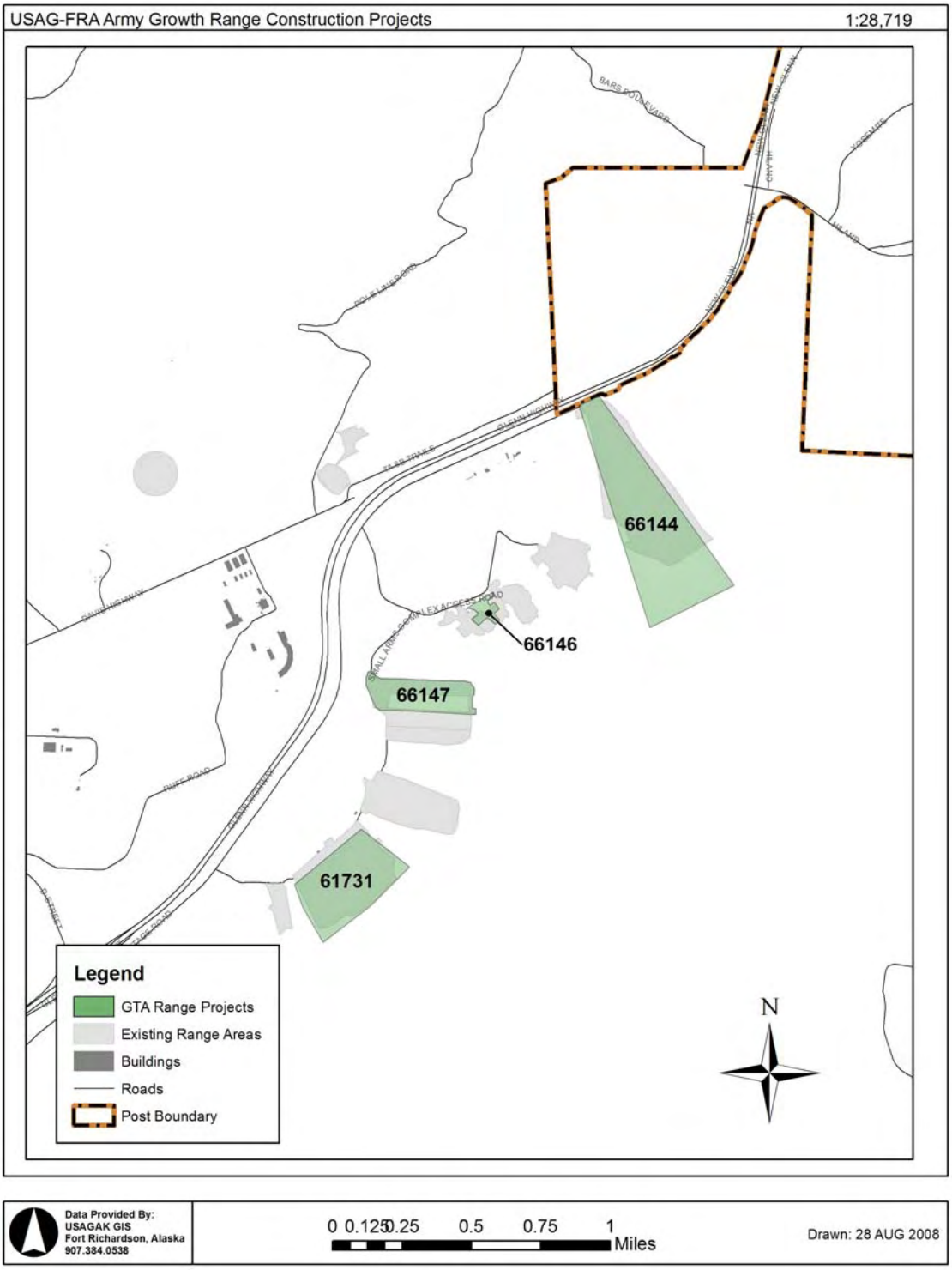
Soldier Barracks (Project 68852). This project is required to support the stationing of 1773 new Soldiers by providing barracks housing for single and/or unaccompanied Soldiers within the garrison boundary. This project would provide a standard design barracks space for a maximum of 263 unaccompanied Enlisted Soldiers. It also includes a personal vehicle parking lot. This facility would be located along Sixth St. between Davis Highway and D. St, directly north of the Troop Medical Clinic.

Military Treatment Facility (Project 69805). This project is required to provide medical support to the increased number of new Soldiers and to accommodate new medical equipment and treatment procedures. This project consists of an approximately 3,000 square foot expansion of the existing Troop Medical Clinic, located on the northwest corner of the intersection of D St. and Sixth St., and also includes an expanded parking lot.

Child Development Center (Project 69956). This project is required to support the care and early development of additional children of Soldiers and their Families. This project consists of an approximately 23,000 square foot structure, located on the southern corner of the intersection of Arctic Valley Road and Grady Road. This facility would also include more than 51,000 square feet of outdoor activity area.

Range Construction: To support the stationing of 1773 new Soldiers, FRA would need to upgrade several training range facilities to meet doctrinal training and standard range design requirements. No new ranges would be required; however, the installation's Multipurpose Machine Gun Range, Combat Pistol Range, Modified Record Fire Range, and Known Distance Range would be expanded through the addition of more firing lanes to support the increased number of Soldiers. Each of these ranges would be expanded at the location of the existing ranges within the small arms range complex, which is located to the east of the FRA cantonment area. Figure 2.2.4-2 shows the location of each project.

Figure 2.2.4-2. USAG Fort Richardson Range Construction Projects



Multipurpose Machine Gun Range (MPMG) (Project 66144). The MPMG is used to train and test Soldiers on the skills necessary to detect, identify, engage, and defeat stationary and moving targets in a tactical array. This MPMG is intended to support the training and qualification requirements of the M249, M240, M2, Machineguns and MK19 Grenade Launcher. Currently, the FRA 6 lane MPMG does not meet TC 25-8, *Training Ranges,* range design standards because it is too short and does not contain the proper target arrays.

Extending the range to the correct length and providing new targetry would ensure the Soldiers can train and qualify to standard. Lanes 2, 3, 4 and on this range would be extended from 900 m to 1,300 m, and would include a 200 m buffer for a total length of 1,500 m. These new firing lanes would then support sniper field fire training and the qualification of additional machine gun crews.

This range would not be expanded from its current 6 lanes to the 10 lane standard range design. Expanding the range to 10 lanes would necessarily increase the width of the firing fans, which would negatively impact the usage of firing lanes from adjacent ranges that are critical for training Soldiers at FRA.

The following facilities would also be constructed in support of this range project: a range operations and storage building, a separate toilet/shower facility, grandstand and bleachers, and an ammunition hut, which would serve as the field ammunition supply point (ASP). The range upgrade would also require power service, paving for walks and curbs, and new targetry.

This range is the northernmost firing range within the small arms range complex. Figure 2.2.4-2 shows the project location. This project would require tree clearance to accommodate the new range footprint as well as new targetry. The expanded range would also extend across a small stream, which runs from southeast to northwest diagonally across the range at approximately 1100m. A stream crossing would be added to facilitate range and targetry construction and maintenance, and fire break trails would be added alongside the range.

Modified Record Fire Range (MRF) (Project 61731). This complex supports the Soldier's training and qualification requirements with the M4, M14, and M16 rifles, training Soldiers to quickly identify and engage stationary infantry targets. The current MRF is old and does not support current training requirements, requires excessive maintenance and "down-time", and would not support the increased number of Soldiers who must qualify with their primary individual weapon.

This range is located at the southern end of the small arms range complex (see Figure 2.2.4-2 and currently has 16 firing lanes. To implement the proposed action and support the increased training demand, this range would be expanded to the northeast by an additional 8 lanes for a total of 24 lanes. Tree clearance will be required to accommodate the new range footprint.

The following facilities would also be constructed in support of this range project: a range control tower, range operations and storage facility, toilet and shower facility, bleachers and grandstand, and an ammunition hut. The range will be re-wired for digital capability.

Automated Combat Pistol Qualification Course (CPQC) (Project 66146). This complex supports the Soldier's training and qualification requirements with the 9mm, .38 caliber, and the .45 caliber pistols. This range also supports the requirement for the Military Police Qualification Course with the shotgun and the Close Quarters Marksmanship training and qualification.

Currently, FRA has a non-standard 7 lane course that does not meet TC 25-8 design standards. This project involves the addition of 8 more lanes to the North East, bringing the total to 15 lanes, to support training the increased number of Soldiers and to ensure they train to current standards. The increased size and the capacity of this range will accommodate the growth of military police units. The range is located in the center of the SAC (see Figure 2.2.4-2).

The following facilities would also be constructed in support of this range project: a range control tower, range operations and storage facility, toilet and shower facility, and bleachers and grandstand.

The lane expansion for this range project would encroach on McGee Range to the north. As a result, the location of the latter range's firing lanes would be slightly adjusted. These minor modifications have no potential to significantly impact the local environment and therefore do not warrant analysis in this EA.

Known Distance Marksmanship Range (KD Range) (Project 66147). This range is used to train Soldiers to identify and engage stationary targets at a known distance. This range is required to support multiple qualification and training scenarios for Soldiers stationed at FRA that are in transition.

The current facility has only half the capacity (25 firing lanes) required in TC 25-8 and cannot support the increased number of Soldiers. Twenty-five additional lanes would be added to this 25 lane facility to expand the range capacity to a total of 50 firing lanes. There are no other facilities that would be constructed in support of this range project.

This range is located directly north of the MRF Range in the Southern portion of the small arms range complex. (see Figure 2.2.4-2) The range would be extended to the south into an area previously used as a range that features some re-growth of vegetation. The present vegetation will be cleared to accommodate this range expansion project.

Live-Fire Training: Training activities of these units would primarily involve weapons qualifications with individual (pistols, rifle and light machine gun) weapons and crew served weapons qualification with heavy machine guns. Firing activities would be conducted on existing qualification ranges on FRA. No new types of weapons will be introduced to FRA as a result of this action. There are no new types of impacts that would be anticipated from these activities, though there would be a slight increase in the total volume of live-fire activities at FRA attributable to the stationing of these units. Soils of new firing lanes constructed on existing ranges as part of this scenario would become exposed to lead munitions from live-fire activities.

Maneuver Training: Additional units stationed at FRA could result in an increase in the amount and scale of maneuver training that takes place in Alaska. The total increase in Maneuver Impact Miles (MIMs) that result from this stationing action represents a 29 percent increase in the total MIMs.

During the "combined arms" training at FRA the CS and CSS units will coordinate with the combat maneuver units to conduct combat and other operations. These CS/CSS units will conduct routine small unit maneuvers and will deploy in support of the Brigade Combat Teams (BCT) to provide logistical and other support. These large unit maneuvers can involve multiple weeks of field deployment to local training areas as the installation and the use of other maneuver training resources.

Off-trail maneuver by these units would be limited, with major operations consisting of resupply, transport of equipment and command and control functions. A majority of collective training maneuver operations would take place at DTA and other USARAK maneuver areas in Alaska. Additional small unit maneuver support missions at the platoon and squad level would be supported at FRA's existing maneuver sites.

2.2.5 Infrastructure Construction and Training Requirements for Units Stationed at Fort Wainwright

Cantonment Construction: In order to support the stationing of 425 Soldiers and families, additional garrison infrastructure is required. These facilities include a Unit Operations and Admin Facility for an EOD company and an MP platoon; permanent facilities for an Engineer Company and an MP Company to include COFs, maintenance facilities, and barracks; and an enlisted Soldier Barracks. All projects are expected to be sited within the existing cantonment footprint on FWA. The proposed siting locations for the GTA garrison construction projects have yet to pass through the official siting process in accordance with AR 420-10, thus these locations have the potential to be relocated once the official siting process has been completed. These facilities and their potential siting locations are described below and shown in figure 2.2.5-1.

EOD and MP Unit Operations and Admin Facility (Project 68853). This project supports the stationing of an EOD Company and an MP platoon. The project includes the construction of joint facilities to include a COF, an administrative facility, a deployment equipment storage facility, and an enclosed hardstand. These facilities will be located at two different parcels, one located on the northwest corner of the intersection of Meridian Rd. and Montgomery Rd. and the second located on the west side of Southgate Rd. near the intersection of Southgate Rd. and Santiago Ave.

Company Headquarters (Project 68854). This project supports the stationing of a Horizontal Engineer Company and a Military Police (MP) Company. The projects include one Engineer COF, one MP COF and one enlisted barracks. Each COF includes administrative areas, organizational storage, and tactical vehicle parking. The Engineer Company COF includes a vehicle maintenance facility. These facilities will be located in multiple locations as detailed in table 2.2.5-1 below.

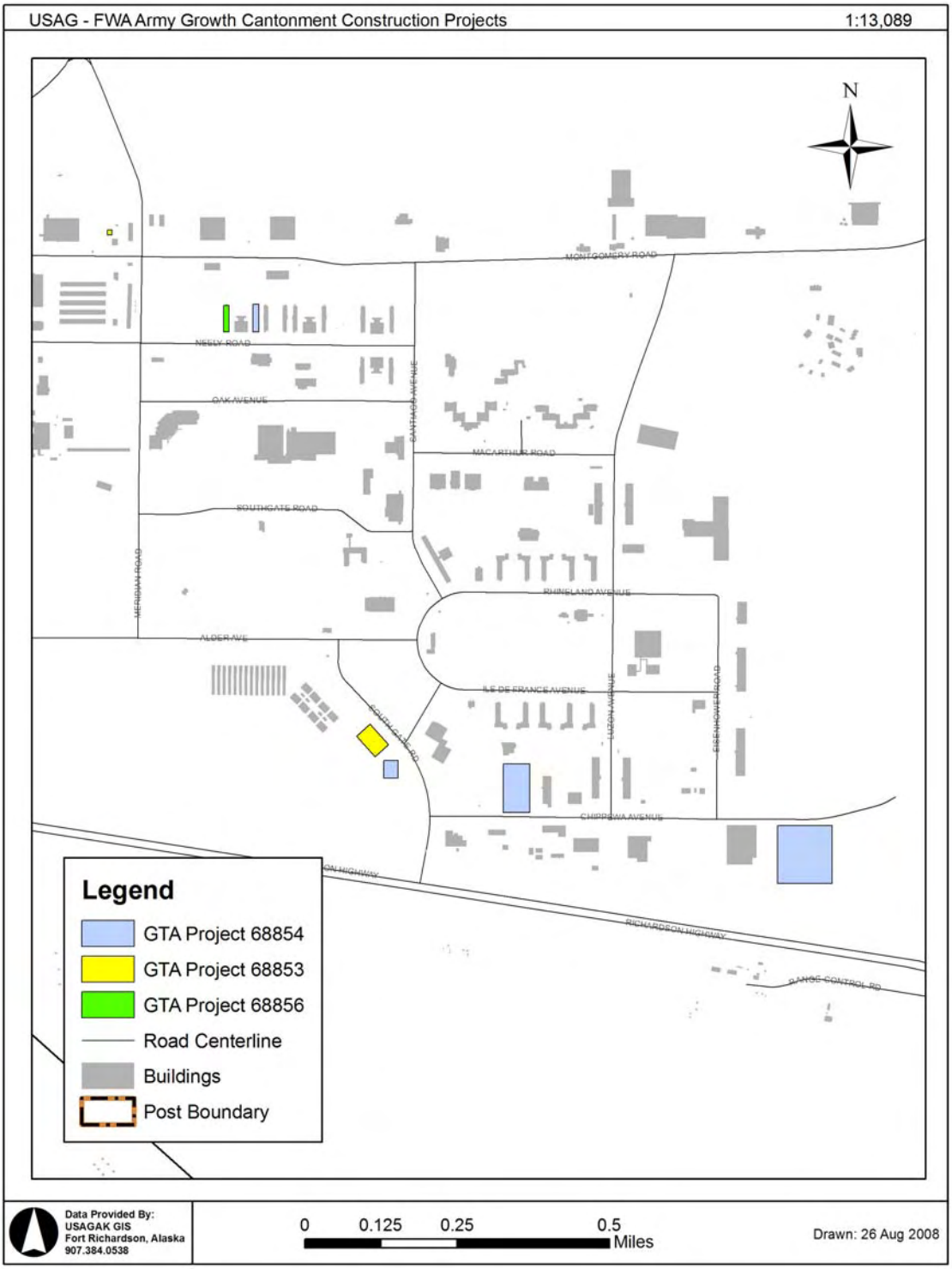
Table 2.2.5-1. Company Headquarters Construction Locations

Project Structure	Location	Notes
Unaccompanied Personnel Housing Barracks	Neeley Rd between Meridian Road and Santiago Avenue.	To be built in current location of Building 3721
MP Company Operations Facility	West side of Southgate Rd. near the intersection of Southgate Rd. and Santiago Ave.	Located just South of site of project 68853.
Organizational Parking and Storage	Chippewa Ave. just West of existing building 3475	
Vehicle Maintenance Facility and Enclosed Hardstand	Chippewa Ave. just East of existing building 3490	

Soldier Barracks (Project 68856). This project supports the stationing of 425 new Soldiers by providing barracks housing for single and/or unaccompanied Soldiers within the garrison

boundary. This project would provide a standard design barracks space for a maximum of 93 unaccompanied Enlisted Soldiers. It also includes a personal vehicle parking lot. This facility would be located on the site of an existing structure, building 3723, which would be demolished as part of this project. Building 3723 is the westernmost of eight identical “hammerhead” style barracks that extend along Neely Road between Meridian Rd. and Santiago Ave.

Figure 2.2.5-1. USAG Fort Wainwright Cantonment Construction Projects



Range Construction: To accommodate the stationing of 425 new Soldiers, FWA will need to upgrade several training range facilities to meet doctrinal training and standard range design requirements. No new ranges would be required; however, the installation's MPMG Range, MRF Range, Automated Combat Pistol Range, and UAC would be expanded through the addition of more firing lanes and stations to support the increased number of Soldiers. (See figure 2.2.5-2) Each of these ranges would be expanded or relocated within the existing small arms range complex, located to the south of the FWA cantonment area on the southern side of the Richardson Highway.

Multipurpose Machine Gun Range (MPMG) (Project 66143): The MPMG is used to train and test Soldiers on the skills necessary to detect, identify, engage, and defeat stationary and moving targets in a tactical array. This MPMG is intended to support the training and qualification requirements of the M249, M240, M2, Machineguns and MK19 Grenade Launcher. This range will meet the requirements of the increased number of soldiers.

Extending the range to the correct length and providing new targetry will ensure the Soldiers can train and qualify to standard. These extended firing lanes will also provide support for sniper field fire training and the qualification of additional machine gun crews.
Due to geographic constraints, this range will not be expanded from its current 6 lanes to the 10 lane standard range design.

The following facilities would also be constructed in support of this range project: a range support facility, a range operations and storage building, a general instruction building, and grandstand and bleachers. The range upgrade will also require power service, paving for walks and curbs, and new targetry. This range is the easternmost range within the small arms range complex as shown in figure 2.2.5-2.

Modified Record Fire Range (MRF) (Project 61681): This complex supports the Soldier's training and qualification requirements of the M4, M14, and M16 rifles. This range teaches Soldiers to quickly aim and engage stationary infantry targets. The current MRF does not have the capacity to train the increased number of Soldiers who must qualify with their primary individual weapon.

This range currently has 16 firing lanes. To implement the proposed action and support the increased training demand this range will be expanded by an additional 8 lanes to the West for a total of 24 lanes. In support of this range the observation tower and target storage area will be renovated and rebuilt. This range is located in the center of the small arms range complex due east of the KD Range. See figure 2.2.5-2.

Automated Combat Pistol Qualification Course (CPQC) (Project 62302): This complex supports the Soldier's training and qualification requirements with the 9mm, the .38 caliber, and the .45 caliber pistols. This range also supports the requirement for the Military Police Qualification Course with the shotgun as well as Close Quarters Marksmanship training and qualification.

Currently, FWA has a non-standard 7 lane course that does not meet TC 25-8 standards. This project involves the addition of 8 additional lanes, bringing the total to 15 lanes, in order to support training the increased number of Soldiers and to ensure they train to current standards.

The current location of this range will not facilitate lane expansion. This range would be relocated within the small arms range complex to a currently empty parcel directly east of the MPMG range (see figure 2.2.5-2). The new location is considered previously disturbed land but

is anticipated to require minor wetlands mitigation. Project designers will attempt to avoid impacts to wetlands through proper design. In the event that section 404 permits are necessary, all mitigation measures will be followed.

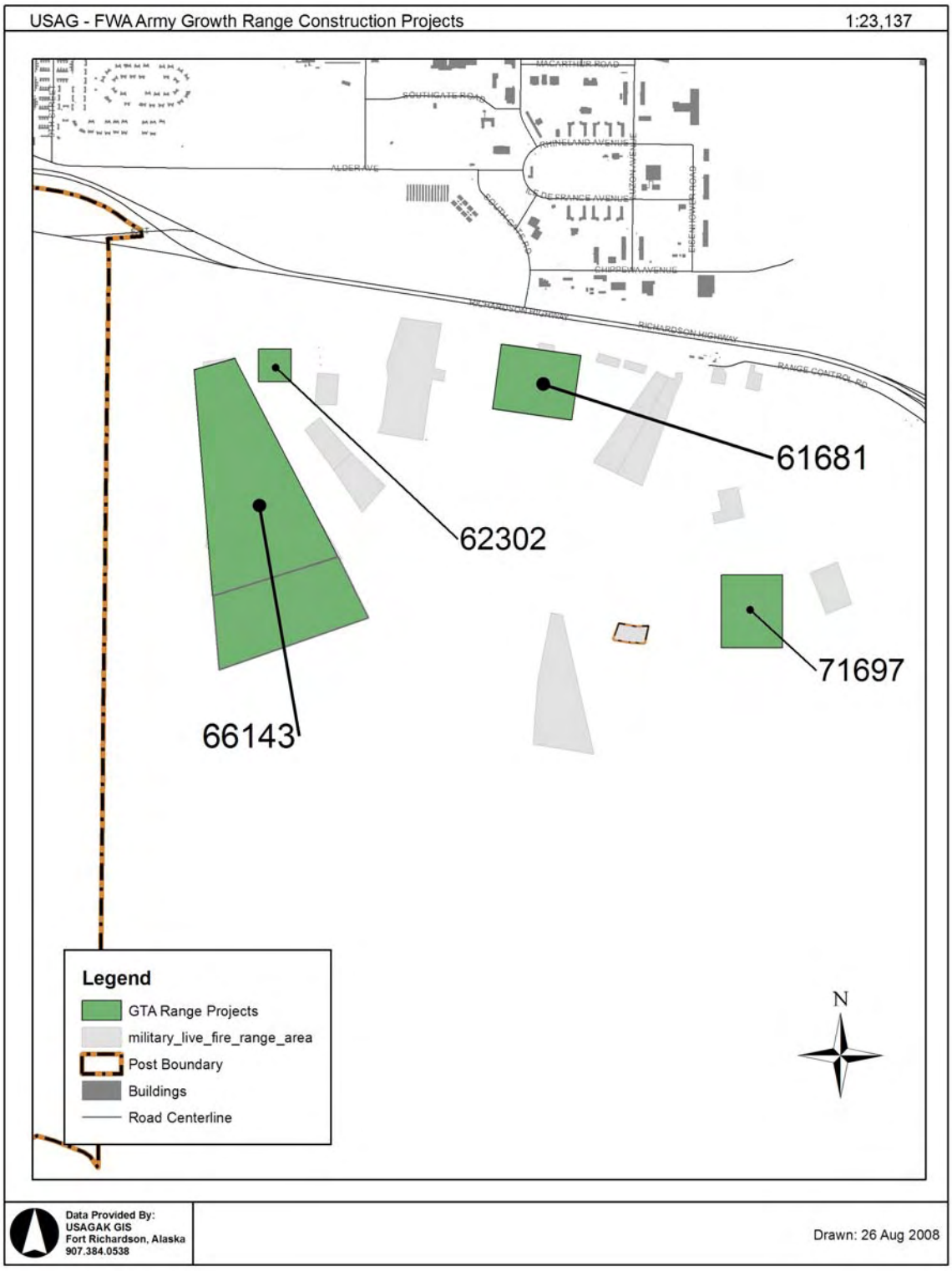
The following facilities would also be constructed in support of this range project: a range support facility, a range operations and storage facility, a toilet and shower facility, a general instruction facility, an ammunition breakdown facility, and building information systems as well as the service roads to access these facilities.

Urban Assault Course (UAC) (Project 71697): This facility supports training of individual Soldiers, squads, and platoons on tasks necessary to operate within a built-up/urban area. Primary features of this course include an individual and team trainer station, squad and platoon trainer station, grenadier gunnery trainer station, an underground trainer station, and an offense/defense house.

Since FWA currently has three of the above five stations, this project would entail construction of the remaining two stations, thereby allowing units to fully train to standard. The existing stations are located in the southeast portion of the small arms range complex, immediately South of the shoot house facility (see figure 2.2.5-2). The remaining two stations would be constructed in this immediate area. Expansion of the UAC is anticipated to require minor wetlands mitigation. Project designers will attempt to avoid impacts to wetlands and nearby waterways through proper design. In the unlikely event that section 404 permits are necessary, all mitigation measures will be followed.

The following facilities would also be constructed in support of this range project: an ammunition breakdown facility and service roads.

Figure 2.2.5-2. USAG Fort Wainwright Range Construction Projects



Live-Fire Training: Training activities of these units would primarily involve weapons qualifications with individual (pistols, rifle and light machine gun) weapons and crew served weapons qualification with heavy machine guns. Firing activities would be conducted on existing qualification ranges and on those ranges expanded to accommodate increased live-fire training activities at FWA. No new types of weapons will be introduced to FWA ranges as a result of this action. There are no new impacts that would be anticipated from these activities, though there would be a slight increase in the total volume of live-fire activities at FWA attributable to the stationing of these units. Soils of new firing lanes constructed on existing ranges as part of this scenario would become exposed to lead munitions from live-fire activities.

Maneuver Training: Additional units stationed at FWA would result in an increase in the amount and scale of maneuver training that takes place in Alaska. The total increase in MIMs that result from this stationing action represents a 5% increase in the total MIMs executed across the FWA training areas.

During the "combined arms" training at FWA the CS and CSS units will work with the combat maneuver units to conduct combat and other operations. These CS/CSS units will conduct routine small unit maneuvers and will deploy in support of the BCTs to provide logistical and other support. These large unit maneuvers can involve multiple weeks of field deployment to local training areas as the installation and the use of other maneuver training resources.

Off-trail maneuver by these units would be limited, with major operations consisting of re-supply, transport of equipment and command and control functions. A majority of collective training maneuver operations would take place at DTA and other USAG Alaska maneuver areas. Additional small unit maneuver support missions at the platoon and squad level would be supported at FWA's existing maneuver sites.

2.3 Description of Alternatives

2.3.1 Screening Criteria Used to Identify the Range of Potential Construction Locations

Reasonable alternatives must:

1) Include sites that have the space capable to construct the facilities within reasonable cost parameters
2) Have the appropriate topography for construction or training
3) Provide for unit cohesiveness and effective administrative control by keeping units and their facilities together as much as possible
4) Take into account USAG FRA and USAG FWA sustainability goals

The Army must also consider limitations inherent within the Military Construction (MILCON) process regarding the timing and funding of construction. Installation construction is executed by the U.S. Army Corps of Engineers (USACE) as directed by the Army Chief of Staff for Installation Management (ACSIM). USACE follows a standard construction process for both range construction and garrison construction projects. Funding appropriation for a project typically must begin more than five years before the start of a given construction project. Submitting project requests, subsequent Congressional appropriation, budget validations,

projects design and construction typically requires multiple years, though the process can be expedited to a certain extent. During this process, funding for given construction projects may be redirected to meet other needs of the Army.

2.3.2 Alternatives Considered but not Carried Forward for Analysis

NEPA requires that all reasonable alternatives for federal actions be considered. The Army considered several alternatives for implementing the Proposed Action. Several alternatives were considered and eliminated because these alternatives failed to satisfy the purpose and need or meet the objectives for the proposed actions, or were otherwise infeasible. Alternatives considered but not carried forward for analysis include:

2.3.2.1 Train Troops at Other Locations Outside of Alaska

The Army has many other training facilities throughout the world; however, using training sites outside of Alaska as the primary locations for new unit training was determined not to be efficient, practical, or reasonable. Deployment of units to external training areas to meet training requirements would be prohibitively expensive and Soldiers would lose significant amounts of limited training time in transit to and from other training sites. FWA and FRA training areas will meet the live-fire and small-unit maneuver requirements for units up to the company level (and primarily for the platoon-level training). Overall, this alternative does not meet the purpose and need outlined above and is therefore not carried forward for further analysis.

2.3.2.2 Construct New Facilities for New Units at Sites Outside of Existing Cantonment Areas

This alternative fails to satisfy the purpose and need of the proposed action. Siting criteria identified in paragraph 1.4.1 establishes the requirement to construct headquarters, administrative, logistical, and living facilities within the existing cantonment areas of FRA and FWA unless not practicable. Since both cantonment areas contain sufficient open space and the necessary utility infrastructure to support new construction, this alternative is eliminated from further consideration in this EA.

2.3.2.3 Conduct Reduced Levels of Training or Construction

As discussed in Section 2.2.2, the Army has designated standard facilities and training requirements that are necessary elements of implementing the Proposed Action. The level of construction and training is therefore an essential element of need for the Proposed Action and is not a variable considered as part of alternatives evaluated in this document. Reduced levels of training and/or construction do not meet the purpose and need outlined above and will therefore not receive further analysis in this EA.

2.3.3 Alternative 1: Preferred Alternative

Alternative 1 entails supporting the stationing decisions of the GTA Pacific ROD that add approximately 1,773 Soldiers to FRA and approximately 425 Soldiers to FWA. The addition of these units would necessitate facilities construction, range expansion at each installation's small arms range complex, additional live-fire training activities at FRA and FWA, and increased in maneuver training. Under Alternative 1, units associated with growth would conduct squad and platoon level training at their home stations (FRA or FWA), and would conduct Company-and-above level training at DTA, TFTA, or YTA. Although these units would conduct some training

at DTA, the majority of their training would occur at their home stations. A description of the units, their training requirements, and facilities infrastructure construction requirements is found in section 2.1 of this EA.

Locations of required projects analyzed within Preferred Alternative represent the culmination of extensive siting analyses based on specific on-the-ground environmental conditions. The Preferred Alternative would also include discussion of potential mitigation measures unique to each project and its proposed location.

2.3.4 Alternative 2: No Action Alternative

Under the No Action Alternative, USAG FRA and USAG FWA would not take action to accommodate the growth prescribed by the GTA Pacific ROD. No additional construction would take place in the cantonment area of either installation. There would be no expansion of ranges in the small arms firing complex of either installation.

The No Action Alternative serves as a baseline condition for analysis and includes those stationing decisions that have already been made by Headquarters, Department of the Army to include stationing actions recommended by the Base Realignment and Closure (BRAC) Commission (BRAC 2005), as well as Army Global Defense Posture Realignment actions that took place prior to 2008.

The No Action Alternative is not a viable means for meeting the current and future strategic security and defense requirements of the pacific Theater. It does not meet the Purpose and Need for the Proposed Action and therefore is not a feasible alternative.

2.4 Summary of Environmental Consequences

Table 2.4-1 below presents the basic, qualitative definitions of the various degrees of environmental impact that have informed this analysis. Together with tables 2.4-1 through 2.4-3, which describe the Significant Effects Thresholds on a resource-by-resource basis, these tables fully describe the link between an action and its environmental effect for the purposes of this document.

Chapter 3 contains a more detailed discussion of the environmental consequences of the Proposed Action and alternatives. The qualitative terms used in the matrix are explained below.

Table 2.4-1. Qualitative Definitions of Environmental Consequences Terms

Beneficial	Only beneficial impacts are anticipated
Insignificant	
No Impact	No measurable impacts are anticipated
Minor	Adverse impacts are anticipated that would be measurable and may have a slight effect on the resource
Moderate	Adverse impacts are anticipated that would be noticeable and would have a measurable effect on the resource
Significant	
Severe	Adverse impacts are anticipated that would be obvious and would have serious consequences on the resource

Tables 2.4-2, 2.4-3, and 2.4-4 contain a summary matrix of the two alternatives and their aggregate direct and indirect environmental impact ratings for each Valued Environmental Component (VEC) that was analyzed, with intended mitigation actions factored into the assessment of the impact. The aggregate impact ratings presented below were determined by reviewing the VEC impact ratings for each activity area (see methodology discussion in Section 3.2) and applying a simple worst-case scenario methodology, where the highest impact rating was taken to represent the VEC as a whole. It was determined that a more complex averaging or weighting scheme would not provide additional key information for the decision maker to consider.

Chapter 3 contains a complete discussion of the environmental consequences of the Proposed Action and alternatives.

Table 2.4-2. Summary of Direct/Indirect Environmental Consequences of Evaluated VECs - FRA

Resource Categories	Alternative 1: Preferred	Alternative 2: No Action
Air Quality	Minor	No Impact
Cultural Resources	Minor	No Impact
Soil Resources	Minor to Moderate	No Impact
Biological Resources	Minor to Moderate	No Impact
Vegetation	Minor to Moderate	No Impact
Invasive Species	Minor	No Impact
Wetlands	Moderate	No Impact
Wildland Fire Management	Minor to Moderate	No Impact
Public Access & Recreation, Human Health and Safety	Moderate	No Impact
Subsistence	Minor	No Impact
Socioeconomics	Minor to Moderate	No Impact
Water Resources	Moderate	No Impact
Facilities	Minor to Moderate	No Impact
Traffic & Transportation	Moderate	No Impact
Land Use	No Impact	No Impact
Hazardous Materials (Haz Mat) / Hazardous Waste (Haz Waste)	Minor	No Impact
Noise	Minor	No Impact
Airspace	Minor	No Impact
Energy	Minor	No Impact
EJ and POC	Minor	No Impact

Table 2.4-3. Summary of Direct/Indirect Environmental Consequences of Evaluated VECs - FWA

Resource Categories	Alternative 1: Preferred	Alternative 2: No Action
Air Quality	Minor	No Impact
Cultural Resources	Minor to Moderate	No Impact
Soil Resources	Minor to Moderate	No Impact

Biological Resources	Minor to Moderate	No Impact
Vegetation	Minor to Moderate	No Impact
Invasive Species	Minor	No Impact
Wetlands	Moderate	No Impact
Wildland Fire Management	Minor to Moderate	No Impact
Public Access & Recreation, Human Health and Safety	Moderate	No Impact
Subsistence	Moderate	No Impact
Socioeconomics	Minor	No Impact
Water Resources	No Impact	No Impact
Facilities	Minor	No Impact
Traffic & Transportation	Minor	No Impact
Land Use	No Impact	No Impact
Haz Mat / Haz Waste	Minor	No Impact
Noise	Minor	No Impact
Airspace	Minor	No Impact
Energy	Minor	No Impact
EJ and POC	No Impact	No Impact

Table 2.4-4. Summary of Direct/Indirect Environmental Consequences of Evaluated VECs – DTA

Resource Categories	**Alternative 1: Preferred**	**Alternative 2: No Action**
Air Quality	No Impact	No Impact
Cultural Resources	Moderate	No Impact
Soil Resources	Minor to Moderate	No Impact
Biological Resource	Minor	No Impact
Vegetation	Minor	No Impact
Invasive Species	Minor to Moderate	No Impact
Wetlands	Minor to Moderate	No Impact
Wildland Fire Management	Minor to Moderate	No Impact
Public Access & Recreation, Human Health and Safety	Minor	No Impact
Subsistence	No Impact	No Impact
Socioeconomics	No Impact	No Impact
Water Resources	Minor to Moderate	No Impact
Facilities	No Impact	No Impact
Traffic & Transportation	Minor to Moderate	No Impact
Land Use	No Impact	No Impact
Haz Mat / Haz Waste	No Impact	No Impact
Noise	Minor	No Impact
Airspace	Minor	No Impact
Energy	No Impact	No Impact
EJ and POC	No Impact	No Impact

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

The following section describes the affected environment and analyzes the environmental and socioeconomic impacts (environmental consequences) of the proposed action. This chapter is organized first by VEC, then by installation, and lastly by activity group (see discussion below). The baseline for the proposed action is each installation's condition in Fiscal Year 2008 (FY08) prior to the implementation of growth and realignment to support operations in the Pacific Theater. Thus, the baseline condition includes Congressionally-mandated BRAC 2005 and modularity decisions.

3.2 Impact Assessment Methodology

This EA presents a site-specific analysis of the proposed action and will provide the decision-maker, regulatory agencies, and the public with information on the potential environmental and socioeconomic effects resulting from the implementation of Army growth and realignment at USAG FRA and USAG FWA. This information will allow the decision-maker to review the proposed alternatives and potential environmental and socioeconomic impacts for implementing Army growth required to support operations in the Pacific Theater, enabling him to make an informed final decision.

This EA adopts analytic methods similar to those used in the SPEIS for Army Growth and Force Structure Realignment (August 2008). The SPEIS for Army Growth identified four types of activities referred to as "activity groups" that were likely to result in impacts to the environment, the Garrisons as a whole, and to the communities surrounding the Army installations. The four activity groups are 1) Garrison construction, 2) Training infrastructure construction, 3) Live-fire training, and 4) Maneuver training. These activity groups served as the evaluation elements for use as a planning and decision making tool and were applied for environmental impact analysis process for the six unit stationing scenarios. That methodology has been adapted for use by this EA.

Activity groups were coupled with the requirements of each of the proposed action and applied to VECs for each of the three Army installations and training areas and their designated training areas1. As part of this analysis, the Army has reviewed recently completed NEPA documentation and Garrison plans and worked with installation staff at each location to determine the requirements for supporting the proposed action. The Army has worked with environmental professionals at its installations to conduct impact assessments based on the information provided by facilities planners and Army training staff. VEC ratings, rated from "No Impact" to "Severe", are based on currently available information as assessed and processed by installation master planners and environmental staff. A description of determining the basic significance of effects on a VEC-by-VEC basis is found in table 3.2-1 below.

1 Not all installations and/or training areas may be impacted by each activity group, therefore only those installations or training areas where actions are or are likely to occur have been evaluated for potential environmental impacts.

Significance of Effects

CEQ regulation 40 CFR 1508.27 specifies that in determining the significance of effects, one must consider both "context" and "intensity."

Context refers to the significance of an effect to society as a whole (human and national), to an affected region, to affected interests, or to just the locality.

Intensity refers to the magnitude or severity of the effect, whether it is beneficial or adverse.

The ***significance*** of potential direct, indirect, and cumulative effects is determined by evaluating the action, alternatives, and proposed mitigation measures as it relates to each individual VEC. The evaluation of significance is typically based on the assumption that the full effect of the proposed condition would occur all at once. More likely, the effects would be less than the maximum predicted and would occur incrementally rather than all at once. Actual effects might be less severe than those predicted.

These determinations of significance often reference legal requirement and/or regulatory thresholds. Actions that are likely to result in violation of regulatory standards are usually considered to have significant effects.

Table 3.2-1 below outlines the criteria for significance employed in this EA.

Table 3.2-1. Significant Effect Thresholds

Resource/Issue of Concern	Region of Influence	Factors
Air Quality	Northern Alaska, South Central Alaska, and Cook Inlet Intrastate Air Quality Control Regions	The degree to which the action affects attainment and maintenance of State and/or Federal air quality standards. Activities that do not exceed regulatory thresholds but result in a measurable change would be considered minor to moderate impacts.
Airspace Resources	Airspace above installation and surrounding area; also flight corridors affected by Army aircraft or training	The degree to which the action affects or will require modification of existing airspace designations. Activities that would not require modification of existing designations and would not cause over-utilization of airspace would be considered minor impacts.

Table 3.2-1. Significant Effect Thresholds

Resource/Issue of Concern	Region of Influence	Factors
Biological Resources (Vegetation, Wildlife and Fisheries)	Installation and surrounding area	The degree to which the action affects fragmentation, loss, or degradation of high quality natural areas or sensitive sites; local extirpation of rare or sensitive plant species; or the introduction or extreme increased prevalence of undesirable non-native species. The degree to which the action causes population-level impacts (e.g., potential to reduce local populations below self-sustaining levels, or long-term loss or impairment of substantial portions of local habitat [species-specific]). The degree to which the action has impacts on species or habitat protected under the Endangered Species Act, MBTA, BGEPA, Magnuson-Stevens Act, or other Federal, State, or local natural resource protection law. Activities that do not violate regulatory conditions and do not substantially alter the local biological conditions or result in regional impacts would be considered a minor to moderate impact.
Cultural and Historic Resources (including Aesthetics)	Installation	The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. Activities that do not violate regulatory conditions but would alter a known or unknown cultural or historic resource would be considered a minor to moderate impact.
Cumulative Impacts	Varies by resource area	Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.
Energy	Installation and surrounding area (Borough level)	The degree to which the action affects demand on existing utilities and whether any increases in demand will exceed existing supply. Activities that increase demand but would not exceed local energy supplies within the reasonably foreseeable future would be considered minor to moderate impact.
Facilities	Installation and surrounding area (Borough level)	The degree to which the action will necessitate increased construction and maintenance of infrastructure as well as provision of services, both on the installation and in the surrounding communities. Activities that would not alter community land use patterns and would not require on-post classification changes that exceed plus or minus five percent of installation land would be considered minor to moderate impact.
Fire Management	Installation	The degree to which the action may adversely affect the wildfire conditions or the ability to prevent or suppress wildfire. Actions that are consistent with the goals and objectives of USAG Alaska's Integrated Wildland Fire Management Plan and that do not pose risks exceeding response capability would be considered minor to moderate impact.
Geology and Soils	Installation	The degree to which the action causes erosion resulting in soil loss, compaction that precludes establishment of native vegetation, or sediment delivery. Activities that would not result in uncontrolled erosion and adhere to Federal, State, and local BMPs would be considered minor impacts.

Table 3.2-1. Significant Effect Thresholds

Resource/Issue of Concern	Region of Influence	Factors
Hazardous Materials and Hazardous Waste	Installation and training lands	The degree to which the Proposed Action increases risks to human health and safety resulting from encountering hazardous waste or handling, storage, and disposal of hazardous materials; or whether the action creates conditions leading to a Notice of Violation of laws pertaining to the generation, use, or disposal of hazardous and/or toxic materials or wastes. Activities that would adhere to Federal, State, and local hazardous material handling requirements and would not result in the uncontrolled generation of hazardous waste would be considered a minor to moderate impact.
Human Health and Safety	Installation and surrounding area	The degree to which the action may increase risks to human health and safety, including physical injuries, psychological effects, and the potential of exposure to hazardous substances and unsafe structures. Activities that do not exceed established Federal, State, and local health and safety laws and regulations would be considered minor to moderate impact.
Noise	Installation and surrounding area	The degree to which the noise associated with an action affects public health or safety. Activities that would not result in a notable change over the existing noise level or exceed a 65 A-weighted decibel day night average would be considered a minor to moderate impact.
Public Access and Recreation	Installation and surrounding area	The degree to which the action may adversely affect existing access or recreational opportunities. Actions that would not permanently eliminate a category of recreational opportunity from the vicinity would be considered minor to moderate impact.
Socioeconomics, Environmental Justice, and Protection of Children	Installation and surrounding area	The degree to which the action affects levels of employment, use of existing infrastructure, or family income; disproportionate impacts to minorities or low-income individuals; or causes health and safety risks for children. Activities that do not notably alter levels of employment, or disproportionately impact minorities or low-income individuals, or result in health and safety risks for children would be considered a minor impact.
Subsistence	Installation and surrounding area	The degree to which the action may adversely affect Alaska Native Tribe populations' hunting, fishing, trapping, and gathering rights. Analysis of this component will comport with Section 810 of the Alaska National Interest Land Act. Activities that do not substantially reduce regional subsistence opportunities will be considered minor to moderate impact.
Transportation	Installation and surrounding area	Whether the action increases the level of service on roadways and increases the level or intensity of rail use. Activities that would not alter existing levels of service or notably degrade the level of service would be considered a minor to moderate impact.
Water Resources (Surface Water, Groundwater, and Floodplains)	Watersheds	The degree to which the action increases sedimentation in waterways, degrades surface water or groundwater quality, or alters the floodplain. Activities would be considered a minor to moderate impact if they would not result in uncontrolled erosion/sedimentation and adhere to Federal, State, and local BMPs; result in notable floodplain alteration or changing flood elevations or flows; or cause violation of the Clean Water Act.

Table 3.2-1. Significant Effect Thresholds

Resource/Issue of Concern	Region of Influence	Factors
Wetlands	Jurisdictional wetlands within Installation	The degree to which the action affects the functions and values of wetlands or whether the action violates Federal or State discharge permits. Activities that do not result in substantial wetland losses of regionally unique or rare wetlands and where suitable mitigation measures for wetland losses is available would be considered a minor to moderate impact.

3.3 Analysis of Impacts to Valued Environmental Components From the Proposed Action and Alternatives

3.3.1 Air Quality

3.3.1.1 Fort Richardson

Affected Environment

With approximately 6,640 miles of coastline, a significant portion of Alaska is influenced by ocean waters and the seasonal distribution of sea ice. Locations that are under the predominant influence of the sea are characterized by relatively small seasonal temperature variability with high humidity. For the Cook Inlet region, summer temperature averages range from 52.8°F to 56.7°F, with some variability; fall temperatures average 46.4°F to 16.2°F; winter temperatures range from 16.2°F to 24.6°F; and spring ranges from 24.6°F to 45°F. The average annual temperature at Cook Inlet is 34.7°F. The annual precipitation for this region is approximately 24.81 inches (Alaska Climate Research Center Web site, June 2008). FRA is located near the cities of Anchorage and Eagle River and is adjacent to Elmendorf Air Force Base. Eagle River is situated on the installation's northeast border, whereas Anchorage and Elmendorf AFB form the western boundary. To the north lies the Knik Arm of the Cook Inlet. The geographic features that most influence climate at FRA are latitude and terrain, and the installation's relative position to water bodies and landmasses. The St. Elias and Chugach Mountains act as a barrier to the maritime climatic influence (Pacific Ocean) from the south; and a transitional zone to the north. The Alaska Range in the north shelters the installation from arctic air masses from the state's interior region. While air monitoring stations are present in both Eagle River and Anchorage, no monitoring stations are located on FRA. Temperature inversions, especially in winter time, are an important contributing factor that can exacerbate the effects of pollution sources and lead to the degradation of air quality by trapping Carbon Monoxide (CO) close to the ground. Anchorage has not recorded a violation of the National Ambient Air Quality Standards (NAAQS) since 1996. Table 3.3.1-1 lists the NAAQS.

The City of Anchorage is currently classified as a maintenance area for CO and the Eagle River area is currently classified as a non-attainment area for PM 10. (Eagle River has not had a NAAQS violation for PM 10 since 1987 and is currently working to be reclassified as an maintenance area) While FRA does not lie within either of these areas, both criteria pollutants are generated in minor quantities from activities on FRA, which potentially contributes to the primary issues of regional concern in which FRA resides. The primary source of CO emissions from Anchorage is motor vehicles (approximately 83.6 percent), and exceedances historically occurred on weekdays when vehicle traffic is heaviest. As stated above, Anchorage has not

recorded a NAAQS violation since 1996. The next largest contributor is aircraft at approximately 8.6 percent. Cold engine starts are believed to be the primary cause of increased CO levels during the winter months (Municipality of Anchorage 1999).

In 2004, Anchorage was reclassified as a maintenance area for CO after being considered a serious non-attainment area for more than 25 years. As a result of a variety of efforts, CO concentrations in Anchorage have dropped by approximately 60 percent since the peak levels experienced in the early to mid-1980's. Anchorage is now considered an attainment area for CO, and has set a plan in place to remain in compliance until 2023. Studies have shown that there is very little likelihood that Anchorage will exceed the NAAQS for CO in the foreseeable future. (Anchorage DHHS, Feb 2008)

PM 10 issues associated with the town of Eagle River are due largely (more than 90 percent) to fugitive dust generated from travel on unpaved roads. The approximate ten percent remaining is largely attributable to automobile exhaust, wood stove burning, and industrial sources. While these sources have contributed to high PM 10 in the past, the state has implemented a number of measures to minimize impacts, which have resulted in no Particulate Matter (PM) 10 exceedances since 1987. As an example, all prescribed burning activities conducted on FRA are done in compliance with its prescribed burn plan and are coordinated with the Bureau of Land Management (BLM).

Table 3.3.1.1-1. National Ambient Air Quality Standards

	Primary Standards		**Secondary Standards**	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide (CO)	9 ppm (10 mg/m3)	8-hour (1)	None	
	35 ppm (40 mg/m3)	1-hour (1)		
Lead (Pb)	1.5 ug/m3	Quarterly Average	Same as Primary	
Nitrogen Dioxide (NO_2)	0.053 ppm (100 ug/m3)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM 10)	150 ug/m3	24-hour (2)	Same as Primary	
Particulate Matter (PM 2.5)	15.0 ug/m3	Annual (3) (Arithmetic Mean)	Same as Primary	
	35 ug/m3	24-hour (4)	Same as Primary	
Ozone (O_3)	0.075 ppm (2008 std)	8-hour (5)	Same as Primary	
	0.08 ppm (1997 std)	8-hour (6)	Same as Primary	
	0.12 ppm	1-hour (7) (Applies only in limited areas	Same as Primary	
Sulfur Dioxide (SO_2)	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 $\mu g/m^3$)	3-hour
	0.14 ppm	24-hour (1)		

(1) Not to be exceeded more than once per year.
(2) Not to be exceeded more than once per year on average over 3 years.
(3) To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m3.
(4) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m3 (effective December 17, 2006).
(5) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)
(6a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(6b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
(7a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.
(7b) As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone non-attainment Early Action Compact (EAC) Areas.

FRA resides in an attainment area for all criteria air pollutants. Effective 15 Aug 2008, the ADEC rescinded FRA's Title V Air Permit. As a result, FRA is no longer classified as a major source of criteria pollutants. Emissions from FRA stationary sources are now regulated under 14 minor source permits by Standard Industrial Classification Code (SIC). FRA relinquished ownership of the minor source permit associated with utilities (SIC 49) to Doyon Utilities, the Utilities Privatization (UP) contractor, on 15 August 2008.

FRA also must comply with National Emissions Standards for Hazardous Air Pollution (NESHAP) for several hazardous air pollutants and source categories. Additionally, FRA must comply with 40 CFR 60.116b for fuel tanks, which specifies monitoring and recordkeeping requirements for all regulated storage tanks. This standard requires maintaining records for the life of the tank, including a copy of the tank design, the capacity and the throughput.

Air emissions sources on FRA include emissions from stationary sources such as backup generators, and heating systems (boilers), emissions from mobile sources such as Privately Owned Vehicles (POV) and tactical vehicles, air emissions from weapons firing and other live-fire training related actions, fugitive dust emissions from tactical convoys and maneuver training, dust from demolition and remodeling of existing facilities, and temporary construction vehicle emissions and fugitive dust from construction activities.

In conjunction with UP, all utilities were transferred to Doyon Utilities (DU), LLC, the private utility company that recently took ownership of all utility infrastructure effective August 15, 2008. In a letter dated 11 June 2008, DU states that all required air permits have been separated from Army permits and re-issued in the utilities name. DU identified several upgrades that will increase operating efficiency associated with electrical generation, and is anticipated to result in substantial reductions in emissions, thereby improving air quality. For example, the utility will install more than 7,000 secondary meters enabling early identification of usage trend and potential shortfalls; they will construct two new substations (one at FRA and one at FWA) and rebuild failing electrical feeders with newer technology to improve system efficiency. Further, all electric facilities at FRA will be completely rebuilt with upgraded technology and equipment ensuring cleaner, more efficient use of utility infrastructure.

Environmental Consequences

USAG Alaska will continue to comply with NESHAP for Asbestos and Lead during renovation or demolition activities when friable Asbestos materials are present, submit required construction permit applications to the ADEC, and monitor and collect air quality data. In addition, the Army will continue best management practices associated with dust control including the utilization of water trucks as a dust suppression method on range roads and other roads that have the demonstrated potential to generate fugitive dust emissions as a result of tactical and civilian vehicle traffic during times of the year that it is necessary.

Garrison Construction: (Minor)
Impacts from garrison construction as a result of implementing the preferred alternative would include emissions from construction vehicles and other ground equipment engines, as well as fugitive dust and opacity issues from new construction, and the remodeling and/or demolition of existing buildings. As construction of new COF, Headquarters buildings, motor pool, and other facilities would occur as infill among the existing cantonment area, additional dust control measures would be necessary due to the proximity of potentially affected populations. All necessary permits, such as a Title I minor source construction permit, would be secured prior to the start of construction. All Underground Storage Tanks (UST) constructed, as part of the preferred alternative, would be done so in accordance with all applicable New Source Performance Standards as well as established Army design standards and industry best practices.

There would be a minor, localized increase in mobile source emissions from construction vehicles. Impacts to air quality however, would be temporary, lasting the duration of the facilities construction. Vehicle emissions and fugitive dust generated by heavy construction equipment and materials transport could potentially have short-term impacts that are anticipated to be less than significant. Air quality impacts resulting from building construction and building operation would be temporally distinct and would not generally overlap to create compounding emissions. The additional fleet vehicles and Soldier POVs would have more long-term effects but given the relatively small number of additional Soldiers and their Families, which represents a fraction of one percent of the Anchorage Metropolitan Area, they are not anticipated to significantly impact local air quality. FRA is located in an attainment area; therefore, a general conformity determination is not required. While FRA itself is in attainment for all criteria air pollutants, an increase of mobile source emissions on the installation, and as a result of increased commuter traffic, could potentially cause minor air quality impacts to nearby Anchorage. Overall, Anchorage air quality has improved greatly in the last two decades and the minor increase in emissions resulting from this proposed action is not anticipated to significantly impact air quality in the Anchorage area.

FRA utilizes decentralized heating and cooling systems for its building infrastructure and has more than 520 separate small boilers and water heaters in its existing buildings. The construction of new buildings would result in the installation of additional small boilers and water heaters as well. All boilers and water heaters on FRA are fired by Natural Gas, which burns very clean and generates minimal regulated emissions. The addition of 1,773 Soldiers and the various new structures to house and support them, would likely result in a minor increase in emissions generated by these small, efficient boiler systems. As a result, FRA could potentially be required to apply for a Minor Source Title I permit for small heaters and boilers. As discussed above, the installation resides in an attainment area for all criteria pollutants and therefore a conformity determination is not required.

USAG FRA will continue to comply with NESHAP for Asbestos and Lead during renovation or demolition activities when friable Asbestos materials are present, submit required construction permit applications to the ADEC, and monitor and collect air quality data. In addition, the Army will continue best management practices associated with dust control including the utilization of water trucks as a dust suppression method on range roads and other roads that have the demonstrated potential to generate fugitive dust emissions as a result of tactical and civilian vehicle traffic during times of the year that it is necessary.

Training Infrastructure Construction: (Minor) Short-term effects would likely occur. Construction vehicles would cause soil disturbance that could potentially generate fugitive dust emissions leading to additional but temporary minor air quality impacts. Fugitive emissions and dust generated from expansion of ranges would affect the areas adjacent to the affected ranges, such as Glenn Highway, but largely would be contained within the range complex. Best management practices would be used to mitigate fugitive dust emissions to the extent practicable during construction.

Live-fire Training: (Minor) Localized emissions from the firing of small arms would increase as a result of implementing the preferred alternative. The weapons associated with new unit stationing are the same weapons systems as are currently being fired on the installation by its tenant units. The frequency of live-fire activities on facilities designated for live-fire use would increase by less than 30 percent.

The emissions released into the environment from live-fire training would result from the use of hand-held weapons such as handguns and rifles; crew served weapons such as machine guns; and (in the case of some CS units) explosive munitions. Air emissions from weapons firing are released at the firing point. Rifles and Machine Guns have very low emissions rates; and these emissions are generally dispersed quickly (depending on wind speed and direction) (Driver et al, 1993). The impacts associated with these emissions are anticipated to be minor. Calculations of these emissions can be found at the U.S. Environmental Protection Agency's (EPA) Technology Transfer network Clearinghouse for Inventories & Emissions Factors, AP42, Fifth Edition, Volume I (www.epa.gov/ttn/chief/ap42/ch15/index.html, n.d.).

Live-fire activities primarily the use of tracer rounds, explosive rounds, and demolition charges, could potentially increase the risk of wildfires, which may create short-term adverse impacts to air quality. Fires can add Carbon Monoxide (CO), Particulate Matter (PM 10 and PM 2.5), and Polycyclic Aromatic Hydrocarbons (PAH), among other combustion byproducts. In addition, the smog created from fires can travel great distances and potentially impact on-post housing and off-post communities. All live-fire activities would continue to be conducted in accordance with established Army policies and training protocols as well as USAG Alaska regulation 350-2. Range control will continue to manage all range areas in accordance with Army policy, the ITAM program, and the Wildfire Management Plan within Annex C of the 2006 INRMP.

Maneuver Training: (Minor) Smaller unit maneuvers would continue to be supported at FRA, while Company-level and above would be supported at DTA and other Alaska training sites. Vehicles associated with CSS or CSS training occurring on roads, trails, or hardened surfaces would increase the occurrence of fugitive dust emissions; however these effects are anticipated to be localized to the range area. Vehicle emissions would also add to the pollutants currently being released in maneuver areas including PM, CO, and O_3. It is important to note that under state of Alaska regulations, military training operations are exempt from Title V permitting. While they are not exempt from a general conformity analysis, as indicated above FRA resides in an attainment area for all NAAQS and is therefore a conformity determination is not required.

Mitigations
The following mitigation measures have been implemented, are currently being implemented, or would be implemented on both FRA and FWA lands in order to control air emissions and mitigate impacts associated with the preferred alternative:

- Existing range and training area management programs (ITAM program) will continue to be implemented and improved as necessary to maintain the full functionality and environmental sustainability of Army lands.

- In accordance with federal, Department of Defence (DoD), and Army policy, all new construction will conform to at least Leadership in Energy and Environmental Design (LEED) Silver design standards, which will result in increased efficiency and decreased energy and resource usage, resulting in less emissions associated with their use.

3.3.1.2 Fort Wainwright

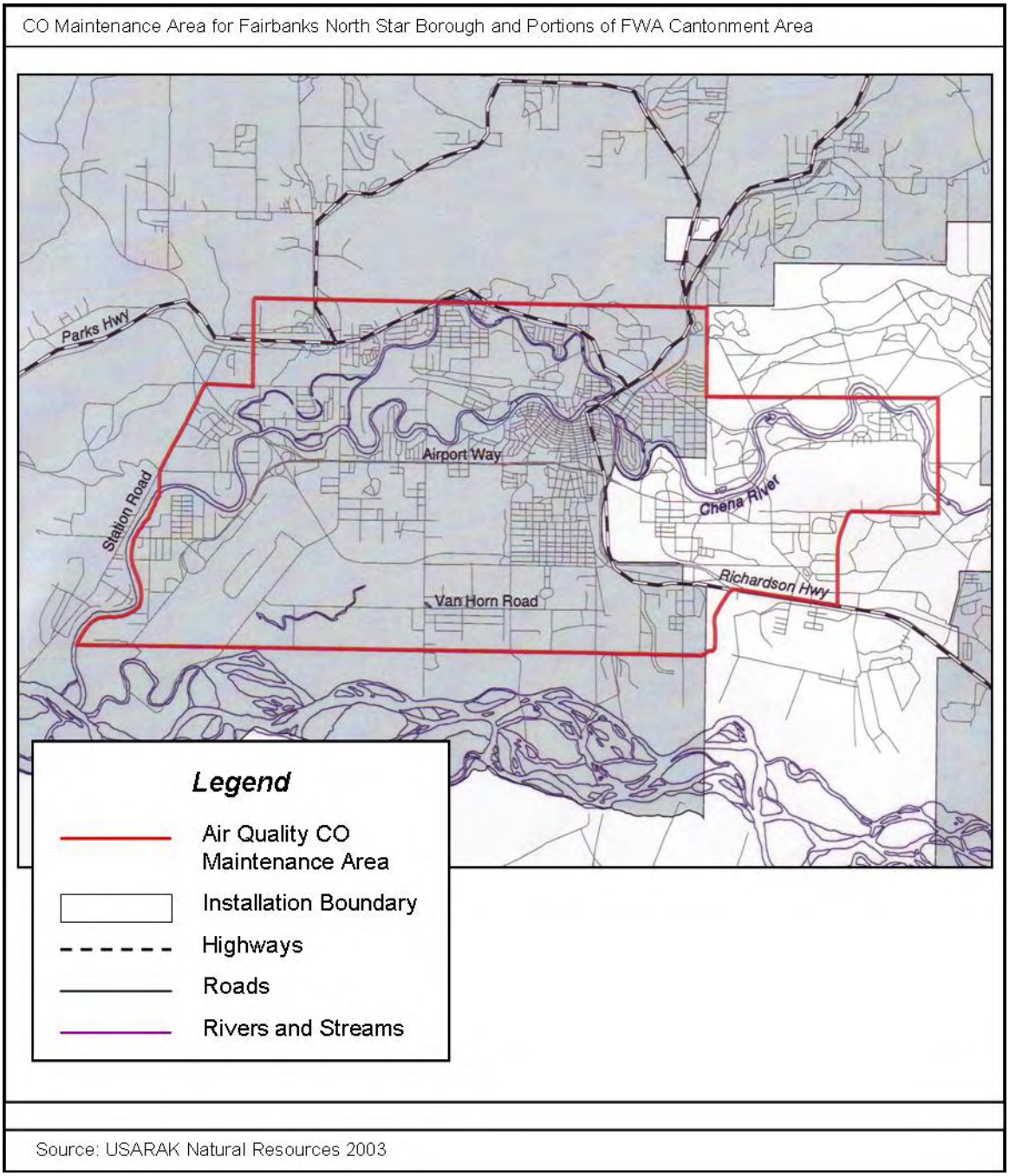
Affected Environment

"The climate in Fairbanks is conditioned mainly by the response of the land mass to large changes in solar heat received by the area during the year. The sun is above the horizon from 18 to 21 hours during June and July. During this period, daily average maximum temperatures reach the lower 70s. Temperatures of 80 degrees or higher occur on about 10 days each summer. In contrast, from November to early March, when the period of daylight ranges from 10 to less than 4 hours per day, the lowest temperature readings normally fall below zero quite regularly. Low temperatures of -40 degrees or colder occur each winter. The range of temperatures in summer is comparatively low, from the lower 30s to the mid 90s. In winter, this range is larger, from about 65 below to 45 degrees above. This large winter range of temperature reflects the great difference between frigid weather associated with dry northerly airflow from the Arctic to mild temperatures associated with southerly airflow from the Gulf of Alaska, accompanied by Chinook winds off the Alaska Range, 80 miles to the south of Fairbanks. In some months, temperatures in the uplands will average more than 10 degrees warmer than in Fairbanks. During summer, the uplands are a few degrees cooler than the city. Precipitation in the uplands around Fairbanks is heavier than it is in the city". (National Climate Data Center, http://climate.gi.alaska.edu/Stations/Interior/Fairbanks.html)

During winter, with temperatures of -20 degrees or colder, ice fog frequently forms in the city. Cold snaps accompanied by ice fog generally last about a week, but can last three weeks in unusual situations. The fog is almost always less than 300 feet deep, meaning the surrounding uplands are usually in the clear, with warmer temperatures. Visibility in the ice fog is sometimes quite low, and this can hinder aircraft operations for as much as a day in severe cases.

While historically some problems associated with ice fog were generated at FWA, a military construction project to replace the power plant's cooling ponds with air-cooled condensers was completed in 2007. Implementation of the new turbine cooling system has eliminated the need for the cooling ponds, thus they now freeze in the winter and are not a major source of ice fog.

Figure 3.3.1.2-1. Fairbanks North Star Borough (FNSB) CO Maintenance Area



FWA is located within the Fairbanks North Star Borough (FNSB), which is currently in attainment for all criteria pollutants. A portion of the FNSB, which includes the FWA cantonment area, was formerly designated as non-attainment area for CO; currently this area is classified as a maintenance area. (See figure 3.3.1.2-1 above)

FWA is also classified as a Prevention of Significant Deterioration (PSD) Major Facility because it has the potential to emit greater than 250 tons of at least one regulated pollutant. FWA possesses 12-months of PSD-quality monitoring data, collected in 2003 from two monitoring stations situated within the cantonment area. There were no recorded violations of NAAQS during the 12-month monitoring period. Additional monitoring occurs on a regular basis.

A portion of the FNSB, which includes the FWA cantonment area and adjacent training areas, has been initially designated as non-attainment with respect to the recently revised 24-hour PM 2.5 standard. The EPA's formal designation of the new non-attainment area boundary is anticipated December 2008

Until recently FWA maintained a single Title V permit. The recent UP initiative resulted in a transfer of all utility infrastructures, including the power plant, to DU. The transfer was completed on Aug 15, 2008. ADEC is in the process of issuing DU and FWA separate Title V permits based on ownership and control of the emission units covered by the existing permit.

As part of the UP initiative, DU is currently conducting a number of assessment studies in preparation for making a host of systemic repairs and equipment upgrades over the next several years. The below quote illustrates the nature of the upgrades to be made:

> During the first five years of operation, all electric facilities at all three posts will be completely rebuilt. Feeders will have 50% extra capacity, three new substations (one at each post) are being constructed in the first 18 months with completion at Ft. Wainwright scheduled for June 1, 2009. These stations will have 50% excess capacity (or more) and can be expanded by simply adding an additional transformer. (All electrical circuits and supply systems are being constructed with 50% extra capacity and loop feed capabilities to accommodate future growth).
>
> At no time during the course of a year does the Ft. Wainwright Central Heating and Power Plant (CHPP) utilize more than 50% of its capacity to produce steam for heat. Doyon Utilities will be installing approximately 13 to 18 mW of additional turbine capacity to utilize excess steam. This will make Ft. Wainwright totally energy self sufficient within the next two to three years and allow energy wheeling to Ft. Greely or other posts. Doyon Utilities will be ceasing installation of utilidors in favor of more efficient and competitive direct bury for water, wastewater, and heat systems. Additional heat and electric energy loads will be served without increases in quantity of coal consumed or degradation of air quality. Additionally, (although with changed air quality parameters Doyon Utilities will have to seek changes to its permits) the use of technology to control boiler and turbines will actually lower emissions. (Letter from President of Doyon Utilities, 11 June 2008. Included as Appendix C)

The CHPP is permitted to burn up to 336,000 tons of coal per year. The 3-year rolling average of coal burned is approximately 220,000 tons, which provides for a large cushion of permitted headspace. This, coupled with the systemic improvements already implemented or planned, results in the installation having significant capacity to support increased demand for steam, and to a lesser extent electricity, with no impacts to permit status. More importantly, the planned upgrades to the FWA CHPP, as discussed in the Doyon Letter (see Appendix C) are anticipated to result in an overall net reduction in air emissions.

Interior Alaska is typically plagued with frequent forest fires during the summer months. FWA currently conducts prescribed burning in close coordination with the BLM and takes all necessary precautions to reduce the risk of wildfire spreading uncontained.

Environmental Consequences

Proposed federal actions within non-attainment or maintenance areas are subject to the General Conformity Rule (40 CFR Part 93 Subpart B), designed to ensure that federal actions do not impede local efforts to control air pollution. As FWA resides in a maintenance area for CO, the elements of the proposed action likely to impact air quality, specifically ambient CO concentrations within the maintenance area, must undergo a preliminary conformity review in order to ensure that the proposed action at FWA will not impede the local and state government's ability to meet the goals established under the State Implementation Plan (SIP). If the action is likely to exceed the established conformity thresholds, which for CO is 100 tons per year, then a full conformity determination would be required.

To conduct this conformity review, a simple comparative analysis was prepared, which looked at the preferred alternative in the *Final Environmental Impact Statement for Transformation of the U.S. Army Alaska,* May 2004 (2004 Stryker EIS) and the preferred alternative discussed in Chapter 2 of this document. The comparative analysis, which is presented in Appendix A, utilizes the detailed emissions analysis conducted as part of the 2004 Stryker EIS as the basis of comparison in order to determine the relative air impacts associated with the proposed action.

As shown in Appendix A, the proposed action considered in this EA represents a fraction of the preferred alternative considered in the 2004 Stryker EIS, both in terms of the increase in the number of Soldiers, as well as the increase in the number and variety of tactical vehicles and equipment. Based on the detailed emissions analysis conducted, the 2004 Stryker EIS made the determination that the preferred alternative did not meet the conformity threshold of 100 tons of CO emissions per year and therefore a full conformity review was unnecessary. A Record of Non-Applicability (RONA) was prepared in conjunction with the EIS. Based on the analysis and conclusions of the 2004 Stryker EIS, it is reasonable to conclude that the preferred alternative in this Army Growth EA would also not meet the conformity threshold of 100 tons of CO emissions per year and would therefore warrant the preparation of a RONA. Therefore, having considered the effects of direct and indirect CO emissions resulting from this proposed action, a RONA has been prepared (see Appendix B). The RONA concludes that conformity determination is not required because project emissions are projected to be well below the conformity threshold of 100 tons of CO per year.

Additionally, at the time the 2004 Stryker EIS was prepared, portions of the FNSB which FWA is located in, was in non-attainment for CO. Due to improvements in local air quality it has since been re-classified as an attainment area and maintenance area.

Cantonment Construction. (Minor) As detailed in Chapter 2, the preferred alternative would involve the demolition of an existing barracks, building 3723, and the construction of three new facilities within the existing cantonment area. Construction related impacts would be temporary and would include an increase in dust from building demolition and mobile source emissions from construction vehicles.

All new cantonment structures will be connected to the existing steam and electric distribution system for heat and electricity utilities, resulting in no new combustion sources. Under normal circumstances, the addition of new structures and associated energy demands would result in a

proportional increase in the use of fuel in the CHPP, resulting in an equally proportional increase in emissions generated. As indicated above, it is the expressed intention of the UP contractor to make substantial systemic upgrades to the CHPP and transmission infrastructure (electric and steam) over the next few years. It is their considered opinion that these efficiency gains are likely to result in an overall net reduction in stationary source emissions. It is likely that the minor increase in emissions associated with these new facilities will be more than off-set by the gains in efficiency realized by the facility upgrades.

Additional minor impacts would occur from the increase in mobile source emissions from an increase in Soldier and Family members' POVs as well as the increase in the number of tactical vehicles. While not currently a regulatory issue, the preliminary classification of a portion of the FNSB as non-attainment for PM 2.5 would be affected by the minor increase the number of tactical vehicles and other diesel-powered vehicles. The burning of JP-8 and diesel fuel results in the generation of the very small particulates that fall under the PM 2.5 designation.

Training Infrastructure Construction: (Minor) Short-term effects would occur. Construction vehicles involved with some range expansion would cause soil disturbance that may generate fugitive dust leading to additional air quality impacts. Additionally, fugitive emissions and dust generated from expansion of ranges would affect the areas adjacent to ranges, but are likely to be contained within the range area. Best management practices would be used to mitigate fugitive dust emissions during construction. Short-term effects from the added use of generators and from construction vehicles would occur. The few range buildings to be constructed, as part of the range expansion, will be electrically heated and not result in any new emissions sources.

Live-fire Training: (Minor) Localized emissions from the increase in live-fire from small arms weapons firing would add to the emissions on ranges. Air emissions from firing qualifications are released at the firing point; however, data published by the EPA indicates emissions from weapons fire is relatively minor (www.epa.gov/ttn/chief/ap42/ch15/index.html, n.d.). Rifles and Machine Guns generally have very low emissions rates.

Live-fire activities may also increase the risk of wildfires, which may create short-term adverse impacts to air quality. Fires can add CO, PM 10 and PM 2.5, and PAH, among other combustion byproducts. In addition, the smoke created from fires can travel great distances and potentially impact on-post housing as well as off-post communities. Units will continue to adhere to training restrictions specified in USAG Alaska Reg. 350-2 in order to minimize the incidence of wildfire.

Maneuver Training: (Minor) These scenarios would involve an increase in maneuver activities by about 10 to 20 percent. Smaller unit maneuvers would continue to be supported at FWA, while Company-level and above would be supported at DTA, TFTA, and YTA. Vehicles associated with CSS or CSS training occurring on roads, trails, or hardened surfaces would increase the occurrence of opacity or fugitive dust emissions; however these effects are anticipated to be localized to the range area. Vehicle emissions would also add to the pollutants currently being released in maneuver areas including PM, CO, and O_3. In addition, CS units would have an increased (localized) effect to air quality from off-road maneuvering. The increase in off-road maneuvers would denude soils of vegetation and could lead to increased opacity and fugitive dust within the range area. The USAG Alaska ITAM program is an existing Army program that would continue to monitor vegetation loss and soil erosion, and conduct maneuver damage repair and revegetation, as needed.

As with live-fire training, maneuver training may also increase the risk of wildfires, which may create short-term adverse impacts to air quality. Fires can add CO, PM 10 and PM 2.5, and PAH, among other combustion byproducts. In addition, the smoke created from fires can travel great distances and potentially impact on-post housing as well as off-post communities. Units will continue to adhere to training restrictions specified in USAG Alaska Reg. 350-2 in order to minimize the incidence of wildfire.

Mitigations

Please see discussion of Mitigations at conclusion of FRA subsection, above.

3.3.1.3 Donnelly Training Area

Affected Environment

There are no construction projects planned for DTA. DTA does not lie within a non-attainment or maintenance area for NAAQS and is not a major source for any air pollutant.

Environmental Consequences

Cantonment Construction. (No Impact)

Training Infrastructure Construction: (No Impact)

Live-Fire and Maneuver Training: (No Impact to Minor) The moderate increase in live-fire training and maneuver training anticipated at DTA as a result of additional Soldiers stationed at FWA and FRA is not anticipated to significantly impact air quality at DTA.

3.3.2 Cultural and Historic Resources

3.3.2.1 Fort Richardson

Affected Environment

The earliest currently known archeological site in the Cook Inlet region dates to no earlier than 8,000 years ago. This site is associated with the Denali Complex. Currently no sites of this era are known on FRA. The Middle Holocene Era is also poorly represented in the region; although, findings of this era at the Beluga Point Site suggest an affiliation with the Ocean Bay Tradition. Numerous sites of the Late Holocene Era have been identified in the Cook Inlet region, although representative sites of these eras have not been found within FRA boundaries. These sites are generally believed to be affiliated with the Alutiiq. Many late prehistoric Athabascan sites are also known in the region that are believed to be associated with the Dena'ina people who first settled the Upper Cook Inlet basin approximately 1,500 years ago. Sites of this era are also not represented within the FRA boundaries.

The U.S. purchased the rights to Alaska from Russia in 1867. Beginning in the 1880s, Anglo-American trappers, miners, and settlers moved into the area, and the influx of people accelerated after the discovery of gold. The early gold rushes along the coast had little impact on Cook Inlet, but the rushes in the interior had a strong impact. Anchorage grew as a community with the development of the Alaska Railroad beginning in 1913. Anchorage was established as a construction camp and headquarters for the railroad even after its completion

in 1923. Anchorage took its name from nearby Knik Anchorage, which served as an important supply center for the interior during the gold rushes. During the Great Depression, schools, roads, bridges, trails, harbors, and water systems were built and developed throughout Alaska. The Old Richardson Highway from Matanuska Valley to Anchorage was built across what is now FRA in 1935.

Elmendorf Field was established in 1939 and renamed FRA in 1940. The location was chosen for its comparatively favorable weather and access to the transportation resources of Cook Inlet and the Alaska Railroad. In World War II, FRA was a coordinating spot for the Alaskan war effort and a strategic location for defending Alaska from invasion. Later in the Cold War, FRA performed primarily a training and administrative support role. In 1947, the Air Force officially became a separate branch from the Army. Soon after the branches separated, management of FRA's airfield and cantonment transferred to the Air Force, and it was renamed Elmendorf Air Force Base. In 1950, the Army reestablished FRA on land adjacent to Elmendorf Air Force Base, and the following decade was marked by a series of large construction projects as the Army built its cantonment.

At least eight archaeological surveys were completed on FRA between 1970 and 2008. Four of these were small reconnaissance surveys that did not identify any archaeological sites. The cantonment area of FRA is considered to have a low potential for prehistoric sites, this is due to the high level of development that has occurred over the last 50 years. In contrast, six of the FRA training areas have been identified as having some areas of high archaeological potential. A survey of selected areas in 1980 identified four historical archaeological sites. Six archaeological sites are known on FRA, four are historic, one is multi-component with both prehistoric and historic features and the sixth is a prehistoric site. All of the sites are recommended as not eligible for listing on the National Register of Historic Places. Portions of the Seward to Susitna segment of the Iditarod Historic Trail cross FRA, and may have associated historical archaeological sites. Survey is still needed in areas of FRA and is continuing particularly in those areas identified as having high archaeological potential.

The FRA SAC is an area of low potential for archaeological sites, both prehistoric and historic. Previous archaeological survey and additional archaeological survey in summer 2008 have yielded no archaeological or other cultural resources within the SAC. This includes the areas for proposed expansion. Other areas of low archaeological potential include areas of extensive disturbance such as some areas within the cantonment and areas with extremely steep slopes with little to no soil development. Some areas are excluded from survey due to safety issues such as impact areas which contain UXO and extremely sensitive ecological zones which are not used for training. These discussions can be found in the ICRMP.

Two historic building surveys have been completed on FRA for the Nike Site Summit and Cold War era buildings and a third is in the process of being completed. The Nike Summit Inventory documented 27 contributing buildings and structures. Nike Site Summit has been listed on the NRHP as a historic district. Additional studies of Cold War era historic buildings on FRA are currently underway. USAG FRA developed a Cold War context for FRA (USAG Alaska 2002). USAG FRA is currently in the process of evaluating the buildings within the cantonment area for their potential eligibility for listing on the National Register of Historic Places (NRHP).

Consultation with Alaskan Native Tribes to identify Traditional Cultural Properties (TCP) or other sites of cultural or sacred significance has been on-going. Multiple contracts with Alaskan Native communities in the FRA area are in the process of being executed but currently no TCPs or other cultural resources have been identified within FRA boundaries.

Figure 2.2.4-1 illustrates the locations of construction projects associated with the proposed action. The proposed construction would occur near the boundary for a disputed Cold War Historic District for which the USAG FRA and the AK SHPO have not been previously able to come to an agreement. A new study will be submitted during the next month and through the Section 101 process the eligibility determinations shall be made. The current position of USAG FRA is that there is no Cold War Historic District at FRA. Therefore the determination for the proposed construction will be "no historic properties affected". This determination is different from those made in previously submitted Section 106 letters, as they were an attempt to conduct Section 106 prior to the new building surveys having been completed.

Detailed descriptions of FRA cultural resources can be found in the USAG Alaska ICRMP, hereby incorporated by reference.

Environmental Consequences

Garrison Construction: (Minor). The cantonment area is considered by USAG FRA to have a low potential for prehistoric archaeological sites. Section 101 and Section 106 for this portion of the construction still need to be completed. USAG FRA has determined no historic properties within the Area of Potential Effect (APE) and anticipates no impact to cultural or historic resources.

Training Infrastructure Construction: (No Impact). The proposed expansion of the FRA small arms range on the east side of Glenn Highway will affect only previously disturbed range soils that have been surveyed for archaeological and cultural significance. As no resources are known to exist in the SAC, there is no anticipated impact to cultural or historic resources.

Live-fire Training: (No Impact). Live-fire activities would be conducted on existing qualification ranges. No new types of weapons will be introduced as a result of this action. There are no new impacts that would be anticipated from these activities, though there would be a slight increase in the total volume of live-fire activities at FRA attributable to the stationing of these units. Live-fire activities would only impact existing range areas that have previously been disturbed. Negative impacts would be limited to potential damage to unknown and undocumented cultural resources.

Maneuver Training: (Minor). Additional units stationed at FRA would not result in a substantial increase in the amount and scale of maneuver training that takes place at FRA. The proposed action would not involve creating new roads; and off-trail maneuver by these units would be limited to areas designated by the garrison.

Mitigations

The following mitigation measures are currently in place and are continually revised and reviewed to respond to new or increasing impacts. These mitigation measures are implemented as funding is available.

- Continue to perform Section 110 cultural resource surveys at FRA. The identification of historic properties allows for them to be taken into account in management decisions.
- Continue to meet legal obligations under Section 106 of the NHPA. Fulfilling obligations under Section 106 ensures that cultural resources are identified and considered in decision-making involving activities that could potentially impact cultural resources.

- Continue to implement the ICRMP. The ICRMP provides guidance on the best methods for compliance with cultural resources management responsibilities.
- Continue to curate discovered artifacts with federally-certified museums, per the NHPA.

3.3.2.2 Fort Wainwright

Affected Environment
The prehistory of interior Alaska is characterized by a varied, often nomadic settlement pattern with a focus on hunting of terrestrial animals. The Paleoarctic and Northern Archaic tool traditions included stone, bone, antler, and ivory tools. The lithic technologies included the use of microblades. With the Athabascan Tradition, material culture begins to reflect distinct cultural groups. A more in-depth and detailed prehistory and description of the cultural resources at FWA can be found in the USAG Alaska INCRMP.

The first plane landed in the Fairbanks area in 1913. By 1928, Fairbanks had become an aviation hub for interior Alaska. Federal legislation in 1935 and 1937 established Ladd Airfield near Fairbanks and construction began in 1939. In 1940 Ladd Field became the home of the Cold Weather Test Detachment. Ladd Field was affected by World War II, following Japan's invasion of the Aleutian Islands in June 1942. The facilities at Ladd Field expanded rapidly due to increased activities of the Sixth Air Depot Group, the Cold Weather Test Station, and the Air Transport Command. Auxiliary bases were established to assist Ladd Field with the traffic of the Alaska-Siberia Lend-Lease Program between 1942 and 1945, including Big Delta (Fort Greely). After the formation of the U.S. Air Force in 1947, Ladd Field was designated Ladd Air Force Base. However, the Army's mission at Ladd Field continued, with anti-aircraft and ground defense and cold-weather testing and training. The Army's cold-weather testing and training missions shifted from Ladd Field to the Arctic Training Center at Fort Greely, including Donnelly Flats, in the mid-1950s. Construction at Fort Greely in the 1950s included the military's first nuclear power plant. In 1961, the U.S. Air Force transferred Ladd Air Force Base to the Army, which was then renamed Fort Jonathan Wainwright. With the introduction of the Intercontinental Ballistic Missile in the 1960s, FWA's anti-aircraft mission diminished, and the post's primary mission became peacetime Army deployment. In the 1970s, Arctic training, including exercises at Fort Greely began to be emphasized. In 1986, the 6th Infantry Division (Light) was activated at FWA to function as a rapid deployment force.

Consultation with Alaskan Native Tribes to identify TCPs or other sites of cultural or sacred significance has been on-going for the YTA and the TFTA. Due to the sensitive nature of such consultation and the difficulty in reaching possible knowledge-holders, studies were conducted in partnership with Alaskan Native Tribes and additional studies continue to be needed.

FWA Main Post: Archaeology. Twelve archaeological surveys have been conducted on FWA Main Post. These surveys either have focused on high potential areas of FWA, or have been related to construction projects. Survey sites include the southern slopes of Birch Hill, various borrow sources south of the cantonment area, and small arms ranges between the Richardson Highway and the Tanana River. Nine archaeological sites have been identified on FWA Main Post. They are located north of Chena River and along the southern slopes of Birch Hill. Four of the nine sites have been determined not eligibility for inclusion in the National Register. The remaining five sites have either not been relocated or not evaluated at this time.

Figure 3.3.2.2-1. FWA Garrison Construction and National Historic Landmark

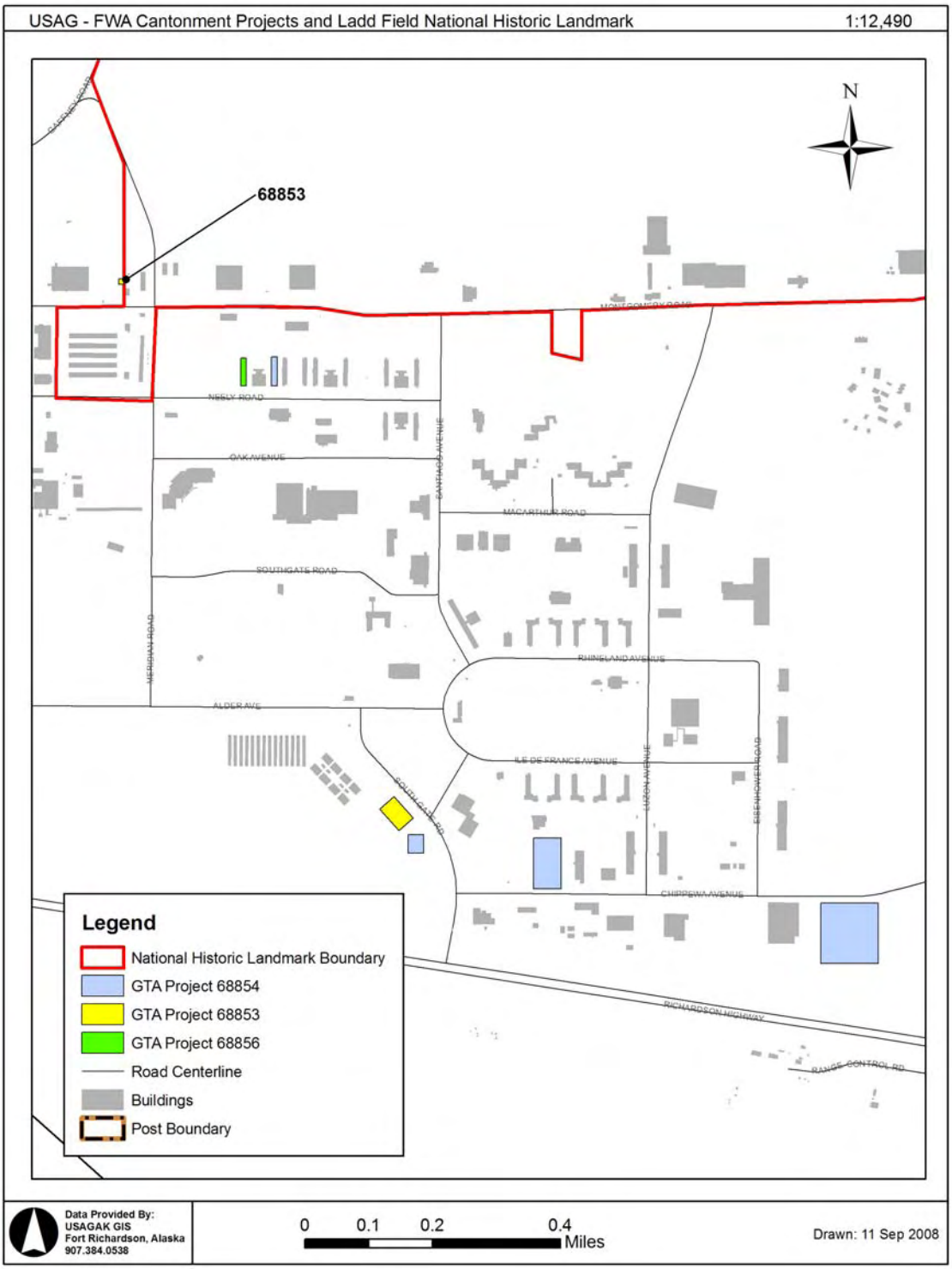


Figure 3.3.2.2-1 above illustrates the locations of cantonment area construction projects at FWA associated with the proposed action. The proposed construction projects in the FWA cantonment area are located in the proximal southern viewshed of the Ladd Field National Historic Landmark.

The proposed small arms range expansion projects are located to the southwest of the Ladd Field NHL. Trees, vegetation, and existing structures entirely obstruct the SAC from the Ladd Field NHL. In addition, the SAC is entirely on previously disturbed soils and the proposed expansion projects are sited for locations that were surveyed for cultural resources. No documented resources exist in the SAC.

Environmental Consequences

Garrison Construction: (Moderate). Long-term minor impacts are anticipated. Barracks currently exist (and would be demolished to make room for new construction) in the proposed location for new facilities. Because structures currently exist in these locations, and due to their location outside the landmark boundary, new construction will not severely alter the viewshed of the Ladd Field National Historic Landmark.

Training Infrastructure Construction: (No Impact). No documented resources exist in the SAC.

Live-fire Training: (No Impact). Firing activities would be conducted on existing qualification ranges on FWA and on those ranges expanded to accommodate increased live-fire training activities. No new types of weapons will be introduced to FWA ranges as a result of the proposed action. Live-fire activities would impact only designated areas that already exist and have previously been disturbed. Negative impacts would be limited to potential damage to unknown and undocumented cultural resources. Due to the previously impacted nature of the SAC, the risk to undocumented resources is not likely to occur.

Maneuver Training: (Minor) The proposed maneuver training increase will not involve creating new roads, and off-trail maneuver by these units would be limited. Negative impacts would be limited to potential damage to unknown and undocumented cultural resources.

Mitigations

The following mitigation measures are currently in place and are continually revised and reviewed to respond to new or increasing impacts. These mitigation measures are implemented as funding is available.

- Continue to perform Section 110 cultural resource surveys at FWA. The identification of historic properties allows for them to be taken into account in management decisions.
- Continue to meet Section 106 obligations at FWA. Fulfilling obligations under Section 106 of the NHPA ensures that cultural resources are identified and considered in decision-making involving activities impact cultural resources.
- Continue to implement the ICRMP. The ICRMP provides guidance on the best methods for compliance with cultural resources management responsibilities.
- Continue to curate artifacts found at FWA lands with federally-certified museums, per the NHPA.

3.3.2.3 Donnelly Training Area

Affected Environment

Since 1963, twenty-four archaeological surveys have been conducted on DTA. As a result, 410 sites have been found. 14 of these sites make up two archaeological districts. 137 sites have been evaluated and 66 of these are eligible for listing on the National Register of Historic Places. In contrast to the survey of the 1960-1980's starting in 2002 a program of large block surveys was started. These surveys covered large areas and employed an aggressive sub-surface testing strategy (Robertson et al. 2006). Approximately 75,000 acres of new archaeology surveys occurred at DTA between 2002 and 2008. This is more than a ten-fold increase in the percentage of land surveyed on DTA but still encompasses a relatively small portion of DTA and the vast majority of it the survey occurred in East DTA. Due to the remote setting, the archaeology of DTA West is still not well understood.

Consultation with Alaskan Native Tribes to identify TCPs or other sites of cultural or sacred significance has been on-going for the DTA. Due to the sensitive nature of such consultation and the difficulty in reaching possible knowledge-holders, studies were conducted in partnership with Alaskan Native Tribes and additional studies continue to be needed.

Environmental Consequences

Garrison Construction: (No Impact). There are no construction projects planned at DTA as part of this action.

Training Infrastructure Construction: (No Impact). There are no construction projects planned at DTA as part of this action.

Live-fire Training: (No Impact). Live-fire activities associated with the proposed action would occur on existing ranges at DTA in support of larger training exercises. No impacts to historical or archaeological resources have been identified due to existing live-fire training. Negative impacts would be limited to potential damage to unknown and undocumented cultural resources.

Maneuver Training: (Moderate). The proposed maneuver training increase will not involve creating new roads, and off-trail maneuver by these units would be limited. No NRHP sites have been identified in the existing maneuver area, and no TCP sites have currently been identified within this area. Completed surveys indicate that the probability of the presence of TCP sites is undetermined; however, the number of sites are estimated to be high. It is anticipated that unidentified sites would likely be located along the moraines east of Jarvis Creek. No impacts to historical or archaeological resources have been identified due to ongoing maneuver training. Negative impacts are anticipated to be limited to potential damage to unknown and undocumented cultural resources.

Mitigations

The following mitigation measures are currently in place and are continually revised and reviewed to respond to new or increasing impacts. These mitigation measures are implemented as funding is available.

- Continue to perform Section 110 cultural resource surveys at DTA. The identification of historic properties allows for them to be taken into account in management decisions.
- Continue to meet Section 106 obligations at DTA. Fulfilling obligations under Section 106 of the NHPA ensures that cultural resources are identified and considered in decision-making involving activities impact cultural resources.
- Continue to implement the ICRMP. The ICRMP provides guidance on the best methods for compliance with cultural resources management responsibilities.
- Continue to curate artifacts found at DTA lands with federally-certified museums, per the NHPA.

3.3.3 Soil Resources

3.3.3.1 Fort Richardson

Affected Environment

Soil maps utilizing the Unified Soil Classification System describe a wide variety of engineering soil types on FRA. Glacial moraines, outwash, tidal flats, and peat bogs all provide a wide variety of parent material for soils at the installation (USAG Alaska, 2004). The soils are shallow, immature, and deficient in primary plant nutrients and water retention ability. In depressions and saturated areas, such as wetlands, soil horizons may be covered with peat (USAG Alaska, 2002).

Soils in Alaska may also contain permafrost. Although more likely to occur in interior Alaska, permafrost is defined as soil, silt, and rock that remain frozen year-round. Permafrost remains frozen until the local climate changes due to natural climatic fluctuations, or it melts due to disturbance of the insulating peat and vegetation layers above. Permafrost is a major factor influencing the distribution of vegetation types and human activities in Alaska (USAG Alaska, 2004).

Permafrost is found in less than one percent of FRA. It occurs primarily in patches of forested bogs near Muldoon Road, with some permafrost persisting at high elevations. Although thermokarst has occurred in the forested bog areas, the effects of thermokarst[2] have been negligible (<0.1% of the area over 200 to 300 years) (Jorgenson et al. 2002).

USAG FRA conserves and manages soil resources as the foundation of other natural resources, through planning level soil and topographical surveys, soil resource monitoring, and soil resources rehabilitation and management strategies. The Draft Natural Resources Guidance from Army Chief of Staff for Installation Management (U.S. Army 2007) requires the installation to identify and map soils, correlate soils to permafrost areas, and establish relationships among components of terrain. The data from these efforts are required for input into the military training and scheduling process. Army Regulations require 10-year updates of topographical planning level surveys to implement the INRMP, as mandated by the Sikes Act.

Soil monitoring is conducted through the RTLA program, which is the monitoring component of ITAM. Annual RTLA reports detail the levels of current and past disturbance and land condition

[2] Any activity that removes the insulating vegetation mat or destroys the active layer above the permafrost table allows the ice mass to melt and irregular subsidence. These features may include hummocks and mounds, water-filled depressions, flooded forests, mudflows on sloping ground, or other landforms. The thawing process is difficult to control and, once formed, thermokarst features are likely to persist (Berger and Iams, 1996).

resulting from military training and recreational use on FRA. Soil resources management on FRA is achieved through implementing soil loss and disturbance prevention activities and BMPs in agreement with industry standard installation storm water pollution prevention techniques and actual restoration of disturbed areas. Disturbed areas are stabilized by both erosion control and stream bank stabilization activities, which control installation sources of dust, runoff, silt, and erosion debris in an effort to prevent damage to land, water, and air resources; equipment; and facilities (including those on adjacent properties). Relevant BMPs used at FRA are detailed in the INRMP (INRMP, 2006) and in the ITAM Five Year Management Plan (USAG Alaska 2005).

The Army has developed a methodology for estimating the collective impact of all mission and training activities (training load) on soil erosion on a specific parcel of land. The methodology uses a measure called MIM, and it is calculated using a series of factors that assess the impact of a training event. The factors are:

Vehicle Severity Factor (VSF)	Measures the effect of the vehicle on the soil vegetation and soil layers when the vehicle turns sharply, pivots and accelerates.
Vehicle Conversion Factor (VCF)	Measures the footprint and ground pressure of the vehicle - wheeled or tracked.
Vehicle Off Road Factor (VOF)	Measures how much the vehicle maneuvers on hard surfaced roads versus cross-country.
Event Severity Factor (ESF)	Measures the overall training event activity, one training event may be stationary (e.g. command post exercise) and another may involve considerable cross-country maneuver (e.g. a mounted attack).

One MIM is standardized as the impact on soil erosion resulting from one M1AL tank driving one mile in an armor battalion Field Training Exercise (FTX). All other Army vehicles and training exercises are compared to the M1AL tank in an FTX.

The frequency and intensity of maneuver training is expected to increase due to the stationing of additional units to FRA. MIMs are expected to increase; however, the maneuver space requirements grow slightly.

Table 3.3.3.1-1. Maneuver Impact Miles for Fort Richardson, AK

Fort Richardson (61,376 Acres)				
	Km^2 Days	**MIMs**	**Summer MIMs Capacity**	**Winter MIMs Capacity**
Current	99,255	150,802		
Proposed	4,304	43,495		
TOTAL	**103,559**	**194,297**	**109,075**	**203,455**
Capacity in Km^2 Days	60,134			
Percent Change in MIMs		+28.8%		

Sedimentation occurring throughout the watershed (occurring through natural processes or anthropogenic activity) in the Cook Inlet region is an issue that potentially affects Beluga whale populations[3]. The impacts of increased soil loading in the water column may decrease the effectiveness of Beluga whale feeding behavior on the salmon, a food source for the Beluga Whale), influencing the survivorship of whale populations. The extent to which military training potentially contributes to the increased soil loading, and the ultimate impacts of all soil loading regardless of source, continues to be researched and investigated.

Environmental Consequences

Garrison Construction: (Minor) Under the proposed action, temporary minor impacts to soils would result during construction of the new facilities. Construction of these facilities would take place in the urbanized cantonment area. None of the projects are sited on floodplains, wetlands, or in areas containing permafrost.

Soil disturbance would occur as a result of excavation activities during construction. Once completed, the installed structures will cover the disturbed area and prevent further damage to those areas. Soil compaction may occur from leveling and grading and could potentially hinder the re-growth of natural vegetation in the areas surrounding the structures. BMPs in place will help alleviate short-term erosion and sediment delivery to streams and wetlands resulting from construction activities. Fugitive dust from soil disturbance during dry periods of the year is a possible short-term impact to air quality (see section 3.3.1).

Training Infrastructure Construction: (Minor to Moderate) Moderate but temporary impacts to soils may result during the upgrade of existing ranges and the construction of new range support facilities to support Army training requirements. Construction of these facilities would take place within the perimeter of the existing range complex and would include clearance of Unexploded Ordnance (UXO). None of the projects are sited on floodplains, wetlands, or in areas of permafrost.

The expansion of the ranges would require the clearing and grading of land adjacent to the existing lanes. Soil from this grading activity could potentially migrate off-site during stormwater events, but it is anticipated these potential effects will be reduced with the implementation of garrison wide BMPs. A minimum amount of soil loss is expected to occur as a result of vehicle movement on and off of the site. Soil compaction may occur from leveling and grading activities and could potentially hinder the re-growth of natural vegetation in the these areas. Short-term erosion and sediment delivery to streams and wetlands as an indirect result of construction activities will be reduced with the continued incorporation of garrison wide BMPs. All land within the SAC is considered previously disturbed through one activity or another (logging, military training, etc.) therefore soil function has been altered over time. Fugitive dust from soil disturbance during dry periods of the year is a possible short-term impact to air quality, though will be reduced through garrison wide BMPs (See section 3.3.1).

Construction of the MPMG range will require the clearing of land on both sides of McVeigh Creek in order to extend the range out to 1500m. Past land clearing activities employing generally destructive techniques and less than adequate protective measures resulted in regulatory action. For the MPMG range expansion project proposed as part of the preferred alternative, rigid mitigation measures will be put in place to ensure that all land clearing and

[3] The Beluga Whale is being considered for listing as a Threatened or Endangered species by the U.S. Fish and Wildlife Service in 2008.

range construction activities will be conducted in a manner that is protective of all native soils, riparian zones and streambed areas in and around McVeigh Creek. Potential sedimentation issues associated with the proposed action could potentially have a moderate affect to water quality in this area.

Live-fire Training: (Minor) Live-fire qualification training is expected to increase due to the stationing of the additional units to FRA. Training would be conducted semi-annually and would represent only a small increase in the overall level of training. For the ranges that are being expanded, spatial extent of the ammunition impacts to soils will be across a greater area, therefore the ammunition impacts per lane would be similar to the current conditions. For the ranges that are only being upgraded and not expanded, ammunition expended per firing lane is expected to increase proportionally, based on the number of additional Soldiers training on the range; therefore, the severity of the impacts to the soils surrounding the targets would be proportionally greater than under current usage rates. The loss of vegetation surrounding the targetry, due to ammunition impacts, may indirectly increase the potential for soil loss due to the increased exposure of the soil; however current best management practices and soil management measures employed in the range complex would continue to mitigate any potential adverse impacts.

Maneuver Training: (Minor to Moderate) Maneuver training is expected to cause moderate, long-term direct impacts to soils. Less than one percent of FRA contains permafrost and those areas are not impacted by the proposed projects. The potential for soil loss due to the increased disturbance to vegetation may increase the exposure of soil. As shown in the previous table the anticipated MIMs requirement for FRA would exceed the Summer MIMs capacity, but would be well within the Winter MIMs capacity. Although the MIMs requirement grows at FRA, the actual impact will not grow in direct, linear proportions because the new units simply augment existing units. The intent of Army growth is to reduce the demand on a small number of units and spread the training and mission requirements over a larger number of like units. This explains why an apparent increase in MIMs only results in a moderate impact. While FRA will receive additional engineer units, which can have larger impacts on soil resources than simple maneuver units, primarily due to digging, FRA currently has a number of engineer units, including heavy construction units. The anticipated impact of the new engineer units represents a proportional, linear increase in potential impact that is not anticipated to result in an overall significant impact. The number of Km^2 Days under the proposed conditions would exceed the capacity of the land by 43,425 Km^2 Days.

Mitigation

A discussion of mitigation measures pertaining to soil resources is located at the end of this section 3.3.3.

3.3.3.2 Fort Wainwright

Affected Environment

The soils of FWA are weakly developed as a result of the cold climate and youth of parent materials. Nearly all soils on FWA have some organic layer, except where floods occurred or humans frequently disturbed the surface. Organic matter accumulation, oxidation and reduction of iron, and cryoturbation are the major soil-forming processes in the FWA area (Swanson and Mungoven 2001). Engineering soil types found at FWA consist dominantly of silt on the hills with wetter and more organic silty soils in the lower drainages (CEMML 2004). Details

regarding geological history, soils composition, and extent of permafrost at FWA, including TFTA and YTA, can be found in the *Supplemental Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment*, August 2008.

FWA's INRMP (USAG Alaska 2002) indicates that the impacts to soils from military activity in the Main Post area are primarily a result of construction. Soils in other areas have been impacted by military activities, localized around small arms ranges, roads, and other facilities. The Stuart Creek Impact Area, located in the YTA, may have had more severe erosion due to explosions and burning, but overall, soils on FWA have been relatively unaffected by military training (USAG Alaska 2002).

USAG FWA conducts both planning level soil surveys and soil resource monitoring. Planning level surveys act to inventory the soil and topography resources present across the entire installation. The ITAM program conducts annual monitoring of soils and vegetation through the Range and Training Land Assessment program. Current and past disturbance resulting from military training and recreational use is delineated and quantified in terms of "land condition". Annual Range and Training Land Assessment reports detail the levels of disturbance and land condition on FWA.

Soil resources management for interior Alaska sites consists primarily of preventive activities and restoration of degraded areas. The ITAM Five Year Management Plan contains BMPs, which are utilized in conjunction with installation storm water prevention techniques. Restoration of disturbed areas is conducted through installation management erosion control and streambank stabilization programs, as well as through LRAM (INRMP, 2006).

Throughout the post, the presence of permafrost allows a higher bearing strength to soils when they are frozen; but when those soils have thawed, they experience compaction problems and rutting which can increase sheet and rill erosion. The presence of permafrost and loess works to inhibit drainage and may lend to a very low bearing strength when those soils are thawed. In addition to the garrison's INRMP, detailed information on the characterization of soils at FWA may also be found in the *Ecological Land Survey for Fort Wainwright* (Jorgenson et al. 1999).

The soils at TFTA have been formed in various unconsolidated materials. These soils are distributed in elongated meander scars and in broad basins. Generally, coarse gravel may be found at the heads of alluvial fans where soils are well drained; and sand and silt can be found at the base of alluvial fans where soils are poorly drained. The permafrost layer there may lie approximately as low as 20 inches below the soil surface and may be as thick as 128 feet. Permafrost is not present beneath the rivers and lakes there but generally exists where there is an absence of surface water or circulating groundwater. TFTA is more frequently used for maneuver training during winter because the presence of snow acts as a protective layer against impacts to permafrost. TFTA has both continuous and discontinuous areas of permafrost. The permafrost layer is susceptible to thermokarst as a result of disturbance of surface soils and vegetation removal.

At YTA, the south slopes of mountains consist of soils that are well drained and composed mainly of silt and loams (generally free of permafrost). Where the silt loams may be shallow near ridge tops and mid-slopes, they may be deeper on lower slopes. The bottoms of depressions have shallow gravelly silt loam covered with a thick layer of Peat underlain by permafrost. YTA is located in a discontinuous permafrost zone there perennially frozen soils are widespread. Permafrost there may be absent on hill tops and south-facing mountain slopes. Similar to TFTA, areas of unfrozen ground lie beneath large water bodies.

The frequency and intensity of maneuver training is expected to increase due to the stationing of additional units to FWA. MIMs are expected to increase and the maneuver space requirements grow slightly.

Table 3.3.3.2-1. Maneuver Impact Miles for Fort Wainwright

Fort Wainwright (917,000 acres)				
	Km^2 Days	**MIMs**	**Summer MIMs Capacity**	**Winter MIMs Capacity**
Current	178,357	192,947		
Proposed	1,721	13,369		
TOTAL	**180,078**	**206,316**	**201,692**	**4,905,872**
Capacity in Km^2 Days	909,215			
Percent Change in MIMs		+ 6.9%		

Environmental Consequences

Garrison Construction: (Minor) Temporary minor impacts to soils may result from the construction of the new facilities and demolition of the existing barracks. Construction of these facilities would take place in the urbanized cantonment area and would be expected to result in minor, temporarily impacts to soils. As demonstrated in figure 3.3.4.2-1, none of the projects are sited on floodplains, wetlands, or in areas of permafrost.

Soil disturbance is expected to occur as a result of excavation activities. Once construction is completed, the installed structures will cover the disturbed area and prevent further damage to those areas. Soil compaction may occur from leveling and grading and hinder the re-growth of natural vegetation in the areas surrounding the structures. Short-term erosion and sediment delivery to streams and wetlands can also be an indirect result of construction activities. Fugitive dust from soil disturbance during dry periods of the year is a possible short-term impact to air quality (see section 3.3.1).

Training Infrastructure Construction: (Minor) Temporary minor impacts to soils would result during the upgrade of existing ranges and range support facilities and the construction of new facilities to support Army training requirements. Construction of these facilities would take place within the perimeter of the existing SAC. These areas have been previously disturbed and therefore the soil function has already been permanently modified. There are substantial wetlands in the area and wetlands delineation will be required. If it's determined that there are jurisdictional wetlands, FWA will confer with the Army Corps of Engineers (ACE) and if ACE requires a permit, FWA will comply with all mitigation. See section 3.3.7 for the full analysis of potential impacts to wetlands.

During the site preparation phase of range construction, short term soil disturbance is expected to occur as a result of vegetation clearing activities and soil excavation activities. Minor soil loss is expected during construction activities, as a result of vehicle movement on and off of the site.

Soil compaction may occur from leveling and grading and could potentially hinder the re-growth of natural vegetation in the areas surrounding the structures. Disturbance of surface vegetation and the underlying, insulating protective vegetative mat can cause the permafrost to melt and subsequently cause substantial thermokarst, subsidence, and pond formation. Once thermokarst processes have begun, it is irreversible and restoration is not possible. Permafrost is not continuous throughout the SAC. Short-term erosion and sediment delivery to streams and wetlands can also be an indirect result of construction activities. Fugitive dust from soil disturbance during dry periods of the year is a possible short-term impact to air quality (See Section 3.3.1).

Live-fire Training: (Minor) Live-fire training is expected to increase due to the stationing of the additional units to FWA. Training would be conducted semi-annually and may account for some rutting and erosion around the target areas. The loss of vegetation surrounding the targetry, due to ammunition impacts, may indirectly increase the potential for soil loss due to the increased exposure of the soil.

For the combat pistol range that would be entirely relocated within the (previously disturbed) SAC, there would be ammunition impacts to soil where there had previously been none. Therefore, the spatial extent of the ammunition impacts to soils within the range complex would be across a greater area. For the ranges that are only being upgraded and not expanded, ammunition expended per firing lane is expected to increase proportionally, based on the number of additional soldiers training on the range; therefore, the severity of the impacts to the soils surrounding the targets would be greater than under current usage rates.

Maneuver Training: (Minor to Moderate) As shown in the previous table the anticipated MIMs requirement for FWA would slightly exceed the Summer MIMs capacity, but would be well within the Winter MIMs capacity. Although the MIMs requirement grows at FWA, the actual impact will not grow proportionately because the many new units are in addition to or supplement existing units. The intent of Army growth is to reduce the demand on a small number of units and spread the training and mission requirements over a larger number of like units. This explains while an apparent increase in MIMs only results in a moderate impact.

Mitigation

A discussion of mitigation measures pertaining to soil resources is located at the end of this section 3.3.3.

3.3.3.3 Donnelly Training Area

Affected Environment

Soils in DTA are primarily derived from glacial activities modified by streams and discontinuous permafrost, and overlain by loess in many places. The loess cap ranges from a few centimeters to several meters thick. Strong winds in the area pick up silt from major drainages and redeposit them throughout the landscape. Many of the soils in the area are classified as inceptisols (weakly developed soils). Additionally, extensive areas of permafrost and gelisols (previously frozen soils) occur in the area. Additional details concerning geology and soils at DTA can be found in the *Construction and Operation of a BAX and CACTF within U.S. Army Training Lands Alaska* (USAG Alaska, 2006*)* and the five-year soil survey completed by the Natural Resources Conservation Service (NRCS) (USDA 2005).

Although some training at DTA occurs in off-road areas (see USAG Alaska Regulation 350-2), training is limited to roads and hard surfaces during the spring break-up (early April to late May). Maneuverability increases during the winter when the soil is frozen and covered with a blanket of ice and snow. Maneuverability also increases, although to a lesser extent, during the summer when the soil is dry. Training area usage is maximized during these periods to take advantage of the lower impacts to soils. Erosion issues due to the increase of Soldier use in this area are unlikely, as there has not been a history of large denuded areas due to training. The installation is working on improvement projects to harden large areas to further protect soils during maneuver training.

There are no units permanently stationed at DTA; therefore, their maneuver training land requirements are generated by units as they rotate in and out of DTA for specific training missions. DTA has the capacity to meet those requirements. The MIMs requirement is an estimate of training that units stationed at FRA and FWA could conduct at DTA, and possibly not conduct at FRA and FWA. The majority of new training requirements come from the new MEB and other company and above collective training.

Table 3.3.3.3-1. Maneuver Impact Miles for Donnelly Training Area

Donnelly Training Area (624,000 acres)				
	Km^2 Days	**MIMs**	**Summer MIMs Capacity**	**Winter MIMs Capacity**
Current	n/a	86,356		
Proposed	n/a	22,207		
TOTAL	**n/a**	**108,564**	**62,517**	**3,552,315**
Capacity in Km^2 Days	611,368			
Percent Change in MIMs		+ 25.7%		

Environmental Consequences

Live-fire Training: (Minor) Live-fire training would increase slightly at DTA as a result of the stationing of additional CS/CSS units at FRA and FWA. While the frequency of large unit training events is not expected to increase, the number of Soldiers participating in any particular training exercise would increase slightly. Training is expected to be periodic and result in a minor increase in the long-term impacts to soils in the range areas, including rutting and erosion around the target areas. The loss of vegetation surrounding the targetry, due to ammunition impacts, may indirectly increase the potential for soil loss due to the increased exposure of the soil.

Existing ranges will not be modified in any way; therefore, ammunition expended per range is expected to increase proportionally with the minor increase in training intensity. As a result, the severity of the impacts to the soils surrounding the targets would be slightly greater than under current usage rates

Maneuver Training: (Minor) Sedimentation levels may slightly increase due to increased use of unpaved trails. If rutting occurs, water could channelize, but the expected impact is minor.

The total estimated MIMs requirement under the proposed actions is well within the MIMs capacity of the land during the winter, and only slightly exceeds the MIMs capacity during the summer.

Mitigations

The following mitigation measures are applicable to all Alaska Army lands to include FRA, FWA and DTA.

USARAK Garrisons conserve and manage soil resources as the foundation of other natural resources, through planning level soil and topographical surveys, soil resource monitoring, and soil resources rehabilitation and management strategies. The Draft Natural Resources Guidance from Army Chief of Staff for Installation Management (U.S. Army 2007) requires the installations to identify and map soils, correlate soils to permafrost areas, and establish relationships among components of terrain. The data from these efforts are required for input into the military training and scheduling process. Army Regulations require 10-year updates of topographical planning level surveys to implement the INRMP, as mandated by the Sikes Act.

Soil monitoring is conducted through the RTLA, which is the monitoring component of ITAM. Annual RTLA reports detail the levels of current and past disturbance and land condition resulting from military training and recreational use on USARAK training lands. Soil resources management at USARAK Garrisons is achieved through prevention activities and actual restoration of disturbed areas by implementing BMPs in agreement with industry standard installation stormwater prevention techniques. Disturbed areas are restored by both erosion control and streambank stabilization activities, which control installation sources of dust, runoff, silt, and erosion debris to prevent damage to land, water, and air resources; equipment; and facilities (including those on adjacent properties). Relevant BMPs used on USARAK lands are detailed in the INRMP (INRMP, 2006) and in the ITAM Five Year Management Plan (USAG Alaska 2005).

Monitoring and rehabilitation efforts of the RTLA and LRAM components of the ITAM program would be utilized to determine effects of training on soils and adjust training use. During spring break-up, training is limited when necessary to protect soils. Fugitive dust, as a result of ground disturbance from normal usage during summer months, would be minimized by utilizing best management practices (such as chemical soil stabilizers or water, when necessary) as described in the ITAM Five-Year Management Plan (USAG Alaska 2005).

Impacts caused by off-road vehicle use would be minimized by timing the training activities to coincide with the times of the year during which the lands are more resilient. For example, snow-pack would minimize the impacts to soils and permafrost. Additionally, where possible, trails and existing roadways would be hardened to increase the resiliency and capacity for the land to absorb additional traffic.

Based on the best management practices discussed in the previous paragraphs, impacts would be expected to be less than presented above. Ongoing mitigation measures of the ITAM Program would reduce the impacts of the proposed actions. Overall, minor impacts to soils would be expected at these sites as a result of increased training.

3.3.4 Biological Resources

3.3.4.1 Fort Richardson

Affected Environment
Wildlife management on USAG FRA lands has traditionally supported recreational and subsistence use (discussed in Sections 3.3.9 and 3.3.10), maintenance of populations and habitats, and preservation of biological diversity. Wildlife and fish populations and their habitats are managed cooperatively by USAG FRA, the Alaska Department of Fish and Game (ADF&G), and the U.S. Fish and Wildlife Service (USFWS). This section discusses an overview of the general wildlife, marine mammals, avian species, Threatened and Endangered Species and Priority Species of Conservation Importance, and species of concern found at FRA.

Wildlife

Wildlife is abundant throughout FRA and its surrounding areas, which include a variety of large mammals; small mammals and furbearers; amphibians; fish; and avian species including game birds, waterfowl, passerines, and raptors. Small game and furbearers found on FRA include coyote, lynx, red squirrel, snowshoe hare, hoary marmot, pine martin, beaver, river otter, wolverine, red fox, porcupine, mink, beaver, muskrat, and short-tailed weasel.

Marine Mammals

In recent years, beluga whales have been sighted within Eagle River Flats, as far as 1¼ miles up the Eagle River and in Cook Inlet adjacent to Elmendorf Air Force Base. Beluga whales have also been observed pursuing salmon along rivers (Quirk 1994). As a note, the Beluga whale is a proposed species and is anticipated to be federally-listed as an endangered species this year. Many activities stemming from the city of Anchorage, surrounding communities, and from FRA and Elmendorf AFB may directly and indirectly affect the Beluga. While the effects of disturbance to the whale are not well understood, the Beluga may be susceptible to shipping, aircraft overflights, and water quality degradation (including any water quality impacts that may affect the salmon that the Beluga whale feeds upon). Harbor seals are also sighted occasionally.

Avian Species

Avian surveys have identified 75 species of birds in the tidal salt marsh, including 24 species of waterfowl (CEMML 2004). Additionally, approximately 40 species of passerines and neotropical migratory birds and 6 species of raptors are found at FRA (Gossweiler 1984; CH2M Hill 1994; Andres et al. 2001; USAG Alaska 2002b; Schempf 1995).

Threatened and Endangered Species and Priority Species of Conservation Importance

No federal or state listed threatened and endangered species have been found on USAG FRA lands (USAG Alaska 2002). FRA is home to a number of priority species of conservation importance. Priority species are listed due to their conservation vulnerability. These species include many avian, mammalian, and other species of concern. Priority wildlife species at FRA include the wolverine, grizzly bear, black bear, wolf, Dall sheep, moose, beluga whale (federally proposed species), and the common loon, as well as waterfowl and raptor species. Appendix F of the Transformation EIS (CEMML 2004) discusses these species and human impacts to these species in greater detail.

Four migratory bird species on the list of Priority Species for Conservation are confirmed to be on FRA (Boreal Partners in Flight Working Group 1999). These include the Northern shrike, varied thrush, golden-crowned sparrow, and blackpoll warbler. The MBTA (16 USC 703) prohibits the taking, killing, or possessing of migratory birds unless permitted by regulations promulgated by the Secretary of the Interior. Section 315 of the 2003 National Defense Authorization Act provided that the Secretary of the Interior prescribe regulations to exempt the Armed Forces for the incidental taking of migratory birds during military readiness activities. In accordance with 50 CFR Part 21, (Migratory Bird Rule) the regulation does not allow an installation to take migratory birds indiscriminately during readiness activities but requires that installations consider the protection of migratory birds when planning and executing military readiness activities. Readiness activities have been further defined as activities that are related specifically to the active training of Soldiers.

One priority species of amphibian, the wood frog, is commonly found in bogs, freshwater and lake margins on post. Wood frogs are an important species for sandhill cranes (CH2M Hill 1994). No reptile species occur on FRA.

Species of Concern

Table 3.3.4.1-1 below lists species of concern found on FRA (USAG Alaska 2007, 2008). Species of management concern include species that have an important value for subsistence and recreational hunting.

Table 3.3.4.1-1. Species of Concern found on Fort Richardson

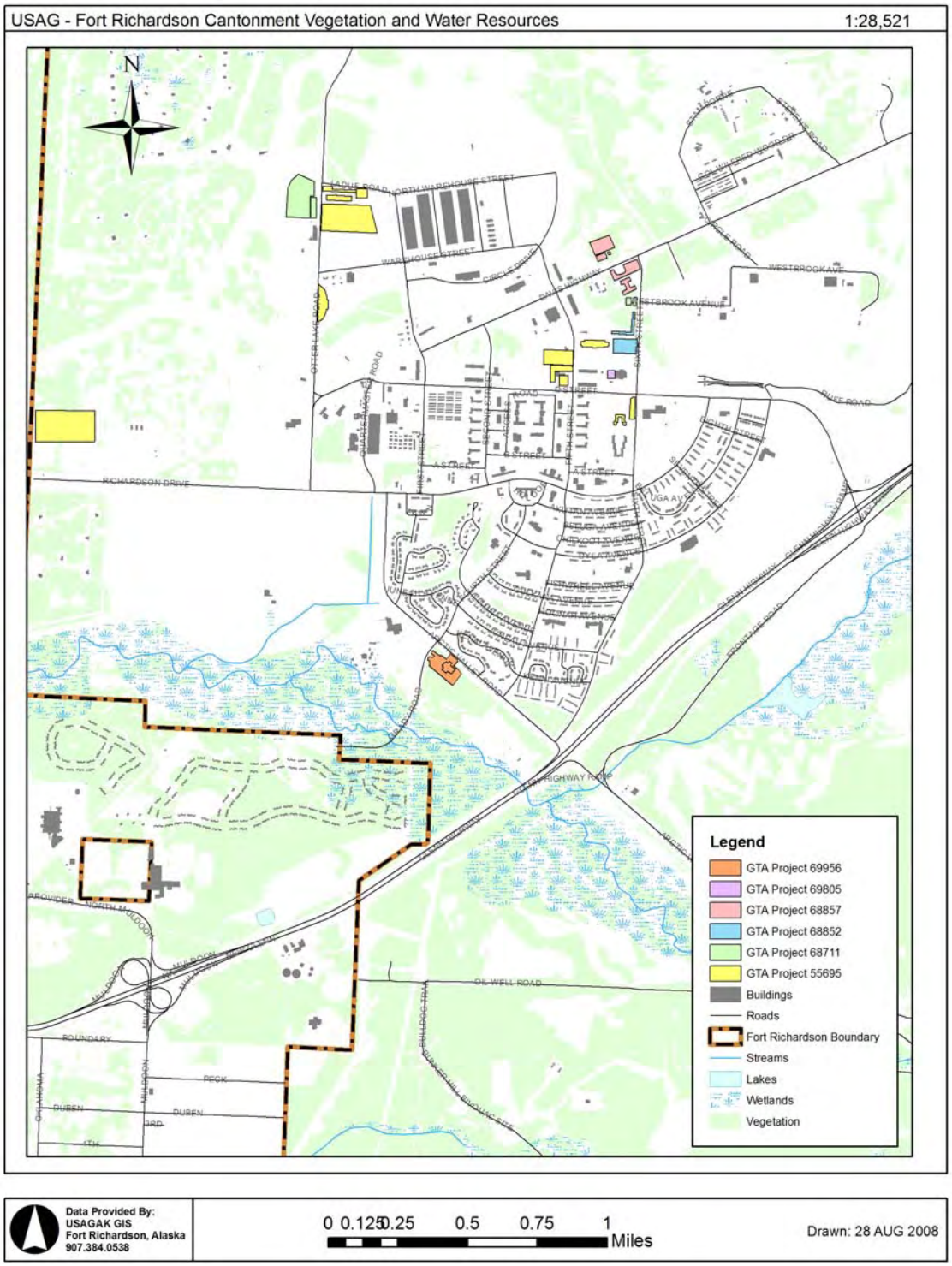
Training Area/ Installation	Group	Species	Scientific Name
Fort Richardson	Bird	American peregrine falcon	*Falco peregrinus anatum*
	Bird	Northern goshawk (southeast population)	*Accipter gentiles laingi*
	Bird	Olive-sided flycatcher	*Contopus cooperi*
	Bird	Gray-cheeked thrush	*Catharus minimus*
	Bird	Townsend's warbler	*Dendroica townsendii*
	Bird	Surfbird	*Aphriza virgata*
	Bird	Rusty Blackbird	*Euphagus carolinus*
	Bird	Blackpoll warbler	*Dendoica striata*
	Amphibian	Wood Frog	*Rana sylvatica*
	Mammal	Brown bear (Kenai Peninsula population)	*Ursus arctos horribilis*
	Mammal	Harbor seal	*Phoca vitulina*
	Mammal	Beluga whale (Cook Inlet Population)	*Delphinapterus leucas*
Species of Management Concern	Moose		
	Caribou		
	Bison		
	Chinook salmon		
	Wolverine		
	Lynx		
	Dall Sheep		
	Black Bear		
	Brown Bear		
	Wolf		
	Sharp-tailed Grouse		
	Ruffed Grouse		
	Grayling		

Environmental Consequences

Garrison Construction: (Minor) The proposed cantonment area construction on FRA is anticipated to have a minor impact on biological resources.

Wildlife found in the cantonment area are common to the region, have likely adapted to a human-dominated environment, and would generally be unaffected by the proposed projects. Human presence and elevated noise levels may displace some wildlife species during construction; however, impacts from construction to wildlife would not be different from the impacts from normal operations and activities occurring in the anticipated construction footprints. In addition, not all construction would require vegetation removal, retaining much of the existing habitat in the cantonment area. See Figure 3.3.4.1-1 below.

Figure 3.3.4.1-1. FRA Garrison Projects and Wetlands, Vegetation, and Surface Water



To avoid impacts to migratory birds, the installation will avoid all intentional takings of migratory birds and eagles by avoiding any visible migratory birds, eagles and any active migratory bird or eagle nests. The installation will also avoid to the extent practicable engaging in vegetation-clearing activities between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds, eagles or active nests. Trees will be inspected for eagle nests prior to removal. Should nests exist within the project site, construction plans will be altered in consultation with U.S. Fish and Wildlife Service. Migratory bird surveys and monitoring are essential to get baseline data for proposed and future cantonment construction. The installation INRMP contains general management guidelines for migratory birds.

The increased presence of humans and their waste products may result in an increase in incidental interaction with bears in and around the cantonment area, resulting in both animal and human safety issues. This is discussed in greater detail in Section 3.3.9.

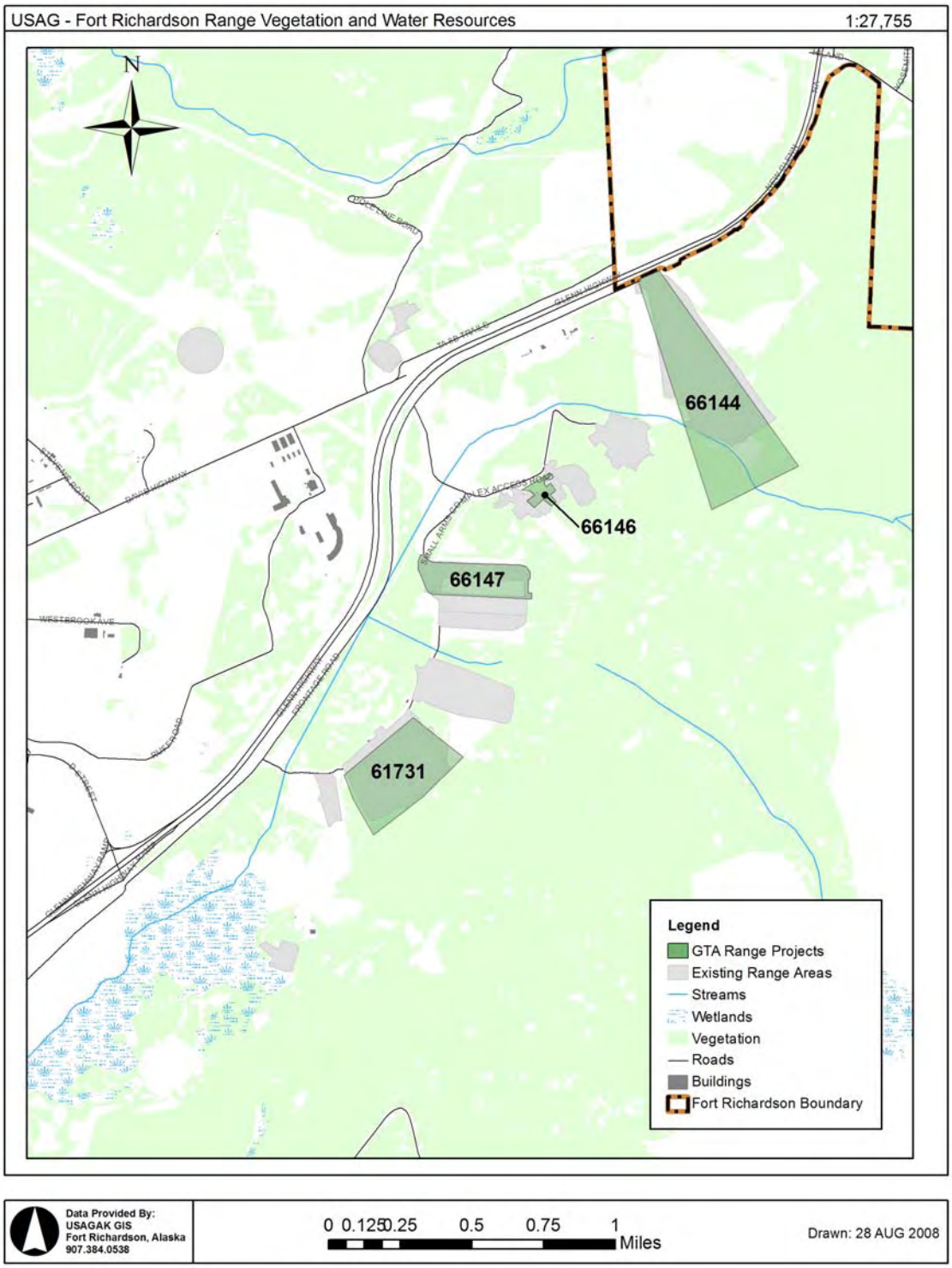
Training Infrastructure Construction: (Minor) The proposed expansion of ranges within the SAC on FRA is anticipated to have a minor impact on biological resources. Expansion projects are planned for established ranges within the SAC which has been previously disturbed and is used year-round for live-fire training. Vehicles regularly utilize this area to transport Soldiers and conduct training. The noise associated with construction vehicles would be temporary, and would be similar in nature to the level of vehicular noise experienced on the small arms range.

Figure 3.3.4.1-2 below illustrates the range construction projects planned under the proposed action at FRA. Although some tree and vegetation removal would be necessary, there would not be enough vegetation removal in the SAC to degrade the habitat for wildlife using that area.

Similar to the impacts associated with cantonment area construction, the installation will avoid all intentional takings of migratory birds and eagles by avoiding any visible migratory birds, eagles and any active migratory bird or eagle nests. The installation will also avoid to the extent practicable engaging in vegetation-clearing activities between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds, eagles or active nests. While bald eagles have not been observed nesting in the SAC, trees will be inspected for eagle nests prior to removal. Should nests exist within the project site, construction plans will be altered in consultation with USFWS.

The multipurpose machine gun range has a number of large beetle-killed spruces that are used by migratory birds and boreal owls for cavity nesting. Some of these trees may have to be removed to accommodate the expansion. If necessary, trees would be removed during the winter to avoid taking issues.

Figure 3.3.4.1-2. FRA Range Construction Projects and Wetlands, Vegetation, and Surface Water



Live-fire Training: (Minor) Overall impacts to biological resources would be minor, with the primary impact being an increase in Soldiers and the associated increase in live-fire training on established ranges.

The increase in Soldier training (number of Soldiers using the range and frequency of use) may result in potential conflicts which could cause training delays. In accordance with USAG Alaska Regulation 350-2, units discovering wildlife on ranges or in training areas during the conduct of live-fire exercises will immediately cease fire and report the location and number of animals to range control. After an area has cleared, permission from range control will be granted for firing to resume. Wildlife found in the training area is common to the region and have likely adapted to a human-dominated environment including the noise from the SAC. An increase in use and noise may temporarily disturb wildlife until acclamation to the noise and presence of additional Soldiers occurs. For example, increased disturbance rates from training could affect moose. However, moose appear to be well-adapted to multiple use management (e.g., Andersen et al. 1996), and impacts would be localized and short-term during training events. Species most likely to be affected by increased training levels would be wolverine, grizzly bear, and black bear.

Maneuver Training: (Minor to Moderate) Overall impacts to biological resources are anticipated to be minor to moderate, with the primary impact being an increase in Soldiers and the associated increase in maneuver training on established ranges. No maneuver range construction is expected related to the increase use of maneuver areas. Wildlife found on FRA are common to the region and have likely adapted to a human-dominated environment.

Installation ITAM best management procedures are incorporated to reduce any impact on fish habitat related to stream crossing and associated disturbance and/or erosion during maneuver training.

Eagles and migratory birds, and their nests, may be found in established maneuver areas. The increase in Soldiers and the increased frequency of the training lane would occur with due consideration given to the Bald and Golden Eagle Act (16 USC 668) and the MBTA. There will be no intentional takings, and mitigation measures detailed below will decrease the likelihood of incidental take.

The Coastal Zone Management Act (CZMA), 16 USC Section1451, provides that the installation must be in compliance with state laws (If a state has an appropriate Coastal Zone Management program through the Office of Coastal Zone Management (NOAA), Federal agencies with development projects within the coastal zone, including Civil Work activities, must assure that those activities or projects are consistent to the maximum extent practicable, with the approved state program). Pursuant to the CZMA, FRA will ensure that its actions are consistent with applicable state laws and policies.

Increased maneuver training that potentially impacts waters and substrates necessary for the spawning, breeding, feeding, or growth to maturity of fish may have an impact on essential fish habitat. Essential fish habitat falls under the Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801-1882) and deals specifically with anadromous fish. The installation plans to limit any impact on streams and rivers that may affect essential fish habitat through increased erosion due to maneuver training

through implementation of existing ITAM and INRMP protocols as well as through compliance with any applicable stormwater and wetlands permitting.

More monitoring may be required to assess impacts of increased training on established training ranges. The installation ITAM is responsible for achieving optimum, sustainable use of training lands by inventorying and monitoring land conditions, integrating training requirements with land capacity, educating land users to minimize adverse impacts, and providing for land rehabilitation and maintenance.

Mitigations

To better understand required habitat and representative life cycles of moose and bear on FRA, more active monitoring and management may be considered in the cantonment area.

Bear-proof containers and bear resistant dumpsters may be considered as mitigation to reduce incidence of bear-human interaction within the cantonment area and on the small arms ranges, including temporary ceasing of live-fire training due to bears sited in the area. Such containers would be placed in all normal trash receptacle locations in lieu of traditional garbage dumpsters.

Also, continued implementation of the INRMP, which helps maintain natural resource sustainability, is required.

To avoid impacts to migratory birds, the installation will avoid all intentional takings of migratory birds and eagles by avoiding any visible migratory birds, eagles and any active migratory bird or eagle nests. The installation will also avoid to the extent practicable engaging in vegetation-clearing activities between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds, eagles or active nests. Trees will be inspected for eagle nests prior to removal. Should nests exist within the project site, construction plans will be altered in consultation with the USFWS.

To the extent possible, vegetation removal associated with range construction within the SACs at FRA and FWA would be conducted outside the 1 May -15 July timing guidelines avoid any disruptions to migratory bird habitat.

3.3.4.2 Fort Wainwright

Affected Environment

This section discusses an overview of the general wildlife, avian species, Threatened and Endangered Species and Priority Species of Conservation Importance, and species of concern found at FWA.

Wildlife

Large mammals on FWA include black bear, grizzly bear, moose, and caribou. TFTA is part of Game Management Unit (GMU) 20A, identified as particularly important habitat for moose and supports the state's largest population. GMU 20A is intensively managed for moose, and currently supports the highest moose density for any equivalent-sized area in Alaska (Young et al., 2006). Caribou have historically used YTA and TFTA, but

populations have declined over the years, possibly due to predation and severe winters (CEMML 2004).

Fifteen species of furbearers inhabit TFTA and YTA. These include wolverines, coyotes, lynx, red fox, pine marten, wolves, snowshoe hare, and red squirrel. Other species include muskrat, beaver, and four species of weasel. River otter exist, but are not common (CEMML 2004).

Avian Species

165 avian species have been documented at FWA, TFTA, and YTA (Ajmi, personal communication; INRMP 2007). FWA, TFTA, and YTA supports at least 75 different species of passerines, 3 species of loons, 4 species of gull, 22 species of raptor, 25 species of shorebirds, the Sandhill crane, the Arctic tern, 6 species of upland gamebird and 26 species of waterfowl (Ajmi, personal communication; INRMP 2007).

Threatened and Endangered Species and Priority Species of Conservation Importance

The wood frog is the only amphibian species found at FWA and no reptiles exist on the installation.

Species of Concern (SOC)

Priority wildlife species include the Wolverine, Grizzly bear, Caribou, Wolf, Bison, Moose, the Sandhill crane, waterfowl (including Trumpeter Swan), Bald Eagle, the Gyrfalcon, Peregrine Falcon, White-tailed ptarmigan, Sharp-tailed grouse, Great gray owl, Boreal owl, Black-backed woodpecker, American dipper, Hammond's flycatcher, Olive-sided Flycatcher, Blackpoll Warbler, Townsend's Warbler, Varied Thrush, Bohemian waxwing, Rusty blackbird, and the White-winged crossbill. More information on Priority species found throughout FWA's cantonment and range areas are found in Section 4.10 of the Transformation of U.S. Army Alaska, Final EIS (CEMML 2004).

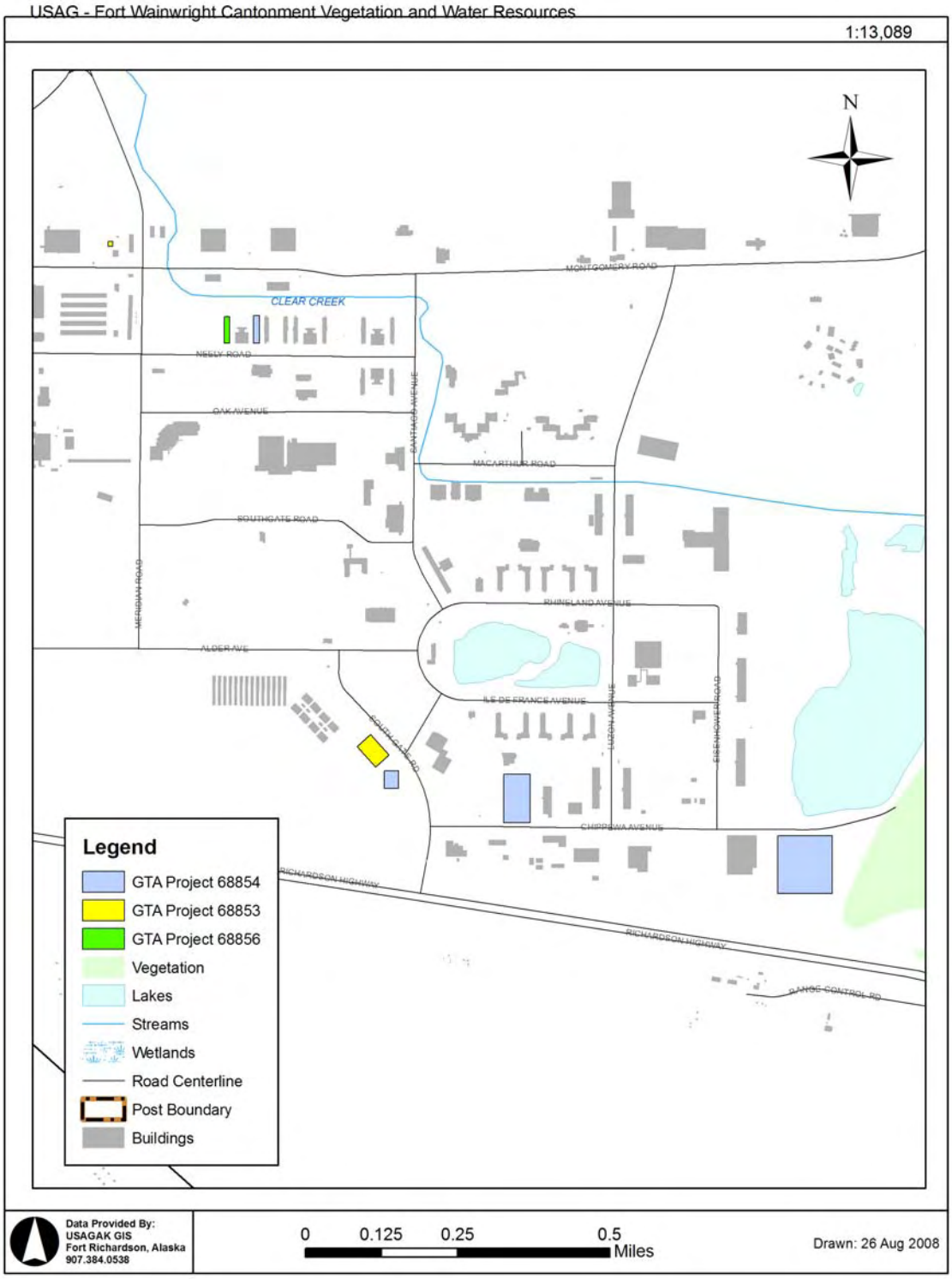
USAG FWA and FRA adhere to both the MBTA and the BGEPA. The MBTA (16 USC 703) prohibits the taking, killing, or possessing of migratory birds unless permitted by regulations promulgated by the Secretary of the Interior. Section 315 of the 2003 National Defense Authorization Act provided that the Secretary of the Interior prescribe regulations to exempt the Armed Forces for the incidental taking of migratory birds during military readiness activities. In accordance with 50 CFR Part 21, (Migratory Bird Rule) the regulation does not allow an installation to take migratory birds indiscriminately during readiness activities but requires that installations consider the protection of migratory birds when planning and executing military readiness activities. Readiness activities have been further defined as activities that are related specifically to the active training of Soldiers. The BGEPA (16 USC 668-668d), or BGEPA, prohibits the taking (pursuit, wounding, killing, molestation or disturbance) of any bald or golden eagle, or any part, nest, or egg of these eagles. Moose, though plentiful, are also a SOC. TFTA supports year-round resident moose population at moderate to high densities, with the highest numbers during the spring and early summer. Moose also concentrate along the South Fork Chena River in YTA during fall and winter months.

No federally threatened or endangered species are found on FWA or its training areas; however, these areas do support priority species and species of concern or sensitive species. Priority bird species found at interior Alaska sites (as identified by the Boreal Partners in Flight Working Group 1999)) are listed in Table 3.9.c of the U.S. Army Alaska Transformation Environmental Impact Statement (USAG Alaska, 2004). Table 3.3.4.2-1 below lists the species of concern found on USAG FWA training areas (TFTA and YTA), the list also includes species of management concern listed here due to the hunting interests by outside groups (USAG Alaska 2008).

Table 3.3.4.2-1. Species Of Concern Found On USAG FWA Training Lands (Tanana Flats Training Area And Yukon Training Area)

Training Area	Group	Species	Scientific Name
Tanana Flats Training Area	Bird	Alaska Sharp-tailed Grouse	*Tympanuchus phasianellus caurus*
	Bird	Great Gray Owl	*Strix nebulosa*
	Mammal	Wolverine	*Gulo gulo*
	Bird	Olive-sided Flycatcher	*Contopus cooperi*
	Bird	White-winged Scoter	*Melanitta fusca*
	Bird	Rusty Blackbird	*Euphagus carolinus*
	Bird	Western Wood-Pewee	*Contopus sordidulus*
	Bird	Red-winged Blackbird	*Agelaius phoeniceus*
	Bird	Yellow-bellied Sapsucker	*Sphyrapicus varius*
	Bird	Barrow's Goldeneye	*Bucephala islandica*
Yukon Flats Training Area	Bird	Great Gray Owl	*Strix nebulosa*
	Mammal	Wolverine	*Gulo gulo*
	Bird	Olive-sided Flycatcher	*Contopus cooperi*
	Bird	White-winged Scoter	*Melanitta fusca*
	Bird	Western Wood-Pewee	*Contopus sordidulus*
	Bird	Yellow-bellied Sapsucker	*Sphyrapicus varius*
	Bird	Barrow's Goldeneye	*Bucephala islandica*
	Bird	Blackpoll Warbler	*Dendroica striata*
	Bird	Great Horned Owl	*Bubo virginianus*
	Bird	Black Scoter	*Melanitta nigra*
	Bird	Olive-sided Flycatcher	*Contopus cooperi*
	Mammal	Lynx	*Lynx canadensis*
Species of Management Concern	Moose		
	Caribou		
	Bison		
	Dall Sheep		
	Black Bear		
	Brown Bear		
	Wolf		
	Sharp-tailed Grouse		
	Ruffed Grouse		
	Grayling		

Figure 3.3.4.2-1. FWA Garrison Construction and Potential Impacts to Wetlands, Surface Water, and Vegetation



Environmental Consequences

Garrison Construction: (Minor) The proposed Cantonment area construction on FWA is anticipated to have a minor impact on biological resources. Wildlife found in the cantonment area are common to the region, have likely adapted to a human-dominated environment, and would be unaffected by the proposed projects.

The installation will continue to follow the 2001 Army Policy Guidance on the MBTA and will avoid all intentional takings of migratory birds and eagles by avoiding any visible migratory birds, eagles and any active migratory bird or eagle nests. FRA will also avoid to the extent practicable engaging in vegetation-clearing activities between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds, eagles or active nests.

Human presence and elevated noise levels may displace some wildlife species during construction; however, impacts from construction to wildlife would not be different from the impacts from normal operations and activities occurring in the anticipated construction footprints. In addition, not all construction would require vegetation removal, retaining much of the existing habitat in the cantonment area. See figure 3.3.4.2-1 above.

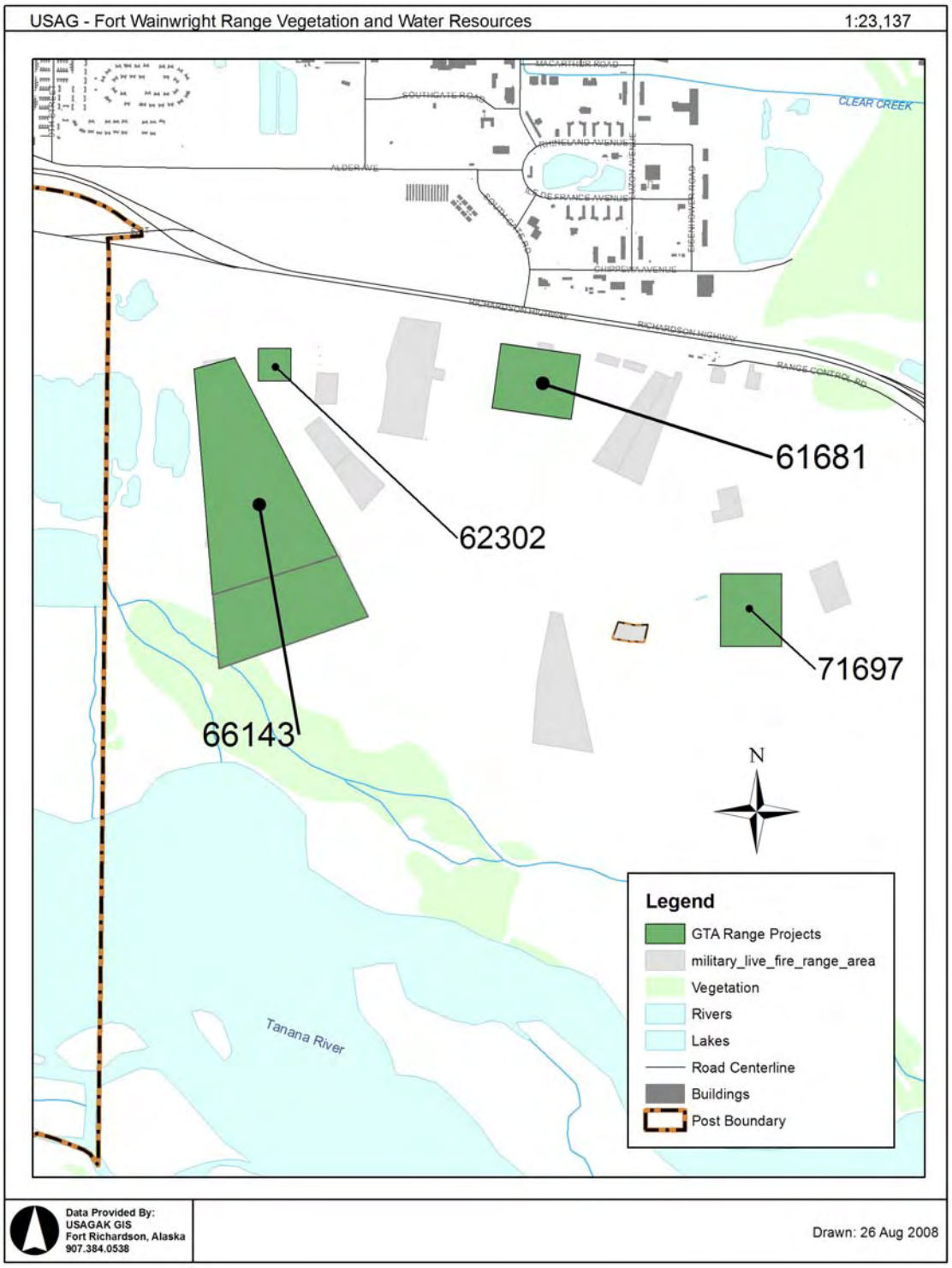
Training Infrastructure Construction: (Minor) The proposed expansion of the SAC, including the UAC, MPMG, MRF, and Automated Pistol Range will result in minor anticipated impacts on biological resources. Planned expansion involves additional training lanes being constructed at established sites. See figure 3.3.4.2-2 below.

It is anticipated that moose in the area of ranges during construction will move to other areas for foraging. This would include other areas already disturbed. The range area complex is a suspected migratory path for moose.

Live-fire Training: (Minor) Overall impacts to biological resources would be minor, with the primary impact being an increase in Soldiers and the associated increase in live-fire training on established ranges. No construction or land disturbing activities will occur as related directly to increased live-fire training. The level of live-fire training at FWA SAC will not considerably increase. Direct impacts to moose and other ungulates, and bears are avoided where possible.

USAG Alaska Regulation 350-2 provides installation guidance on how to properly deal with moose when present on small arms ranges. If conflicts may occur between calving and training; the garrison would investigate resolutions. Monitoring of moose, as well as other animal species, is covered in the USAG Alaska INRMP. In accordance with USAG Alaska Regulation 350-2, dedicated impact areas are permanently off limits and training areas may be temporarily closed during periods of significant wildlife use.

Figure 3.3.4.2-2. FWA Range Construction and Potential Impacts to Wetlands, Surface Water, and Vegetation



In accordance with USAG Alaska Regulation 350-2, units discovering wildlife on ranges or in training areas during the conduct of live-fire exercises will immediately cease fire and report the location and number of animals to range control. After an area has been cleared of wildlife, permission from range control will be granted for firing to resume.

Maneuver Training: (Minor to Moderate) Overall impacts to biological resources would be minor to moderate, with the primary impact being an increase in Soldiers and the associated increase in maneuver training on established ranges. Wildlife found on FWA are common to the region and have likely adapted to a human-dominated environment.

Mitigations

FWA will avoid all intentional take of migratory birds and eagles by avoiding any visible migratory birds, eagles and any active migratory bird or eagle nests. Also avoid to the extent practicable engaging in vegetation-clearing activities between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds, eagles or active nests. Trees will be inspected for eagle nests prior to removal. Should nests exist within the project site, construction plans will be altered in consultation with the U.S. Fish and Wildlife Service.

Installation ITAM best management procedures are incorporated to minimize impact on fish habitat related to stream crossing and associated disturbance and/or erosion during maneuver training. In the event that a proposed action could adversely affect Essential Fish Habitat, appropriate consultation would occur.

Also, continued implementation of the INRMP, which helps maintain natural resource sustainability, is required.

3.3.4.3 Donnelly Training Area

Affected Environment
This section discusses an overview of the general wildlife, avian species, fish species, Threatened and Endangered Species and Priority Species of Conservation Importance, and species of concern found at DTA.

Wildlife

Approximately 40 species of mammals inhabit or use portions of DTA (CEMML 2004). Large mammals on DTA include black bear, grizzly bear, moose, Dall sheep, caribou, and bison. DTA typically has three or four wolf packs, although the structure, distribution and numbers of packs in a given area are highly variable (Construction and Operation of a BAX and CACTF Within US Army Training Lands Alaska (USAG Alaska 2006)). Other furbearers on the training area include lynx, beaver, river otter, pine marten, muskrat, mink, coyote, red fox, wolverine, and two species of weasel. Common species of small mammal include the masked shrew, tundra vole, meadow vole and northern red-backed vole.

Bison migrate annually through DTA in early spring and late summer on their way to and from the Delta River. This migration occurs prior to the calving season (which occurs between late April and early June). During late fall, bison typically migrate onto farms surrounding DTA East where they remain throughout the winter (ADFG 2007).

Avian Species

A wide variety of high quality bird habitat is found on DTA. Approximately 123 avian species have been recorded on site including game birds, waterfowl, passerines, and raptors. Upland game species found on DTA include three species of both ptarmigan and grouse. An estimated two million waterfowl migrate through or near DTA including twenty-eight species of ducks and geese. Approximately 300,000 sandhill cranes, a large portion of the world's population, migrate through DTA from late April through mid-May (USAG Alaska 2006).

A number of migratory birds have been observed on DTA including black-backed woodpeckers, gray-cheeked thrush, varied thrush, bohemian waxwing, Townsend's warbler, blackpoll warbler, Smith's longspur, and rusty blackbird. The dark-eyed junco, savanna sparrow, Wilson's warbler, and orange-crowned warbler were observed most frequently.

Fish Species

Sixteen lakes on DTA, ranging from three to 320 acres, are stocked by the ADF&G. Naturally occurring populations of lake chub, northern pike, sculpin, and the northern longnose sucker are found in lakes on DTA.

Threatened and Endangered Species and Priority Species of Conservation Importance

The wood frog is the only amphibian species found at DTA and no reptiles exist on the training lands.

From mid May through mid June, bison move through DTA from the east and may traverse impact areas. A larger number of Soldiers training may inhibit bison from moving into calving grounds. Before any live fire occurs, range control does a bison sweep. DTA policy is that live fire cannot occur within 1500 meters of the bison and the ADF&G concurred. Policy also dictates that Soldiers cannot disturb bison when in training areas. Previous training has had to be ceased and rescheduled due to bison in or near impact areas.

In an attempt to lure bison away from training areas/impact areas and prevent the disruption of the military mission, DTA currently plants blue grass in designated areas south of training areas. Blue grass is a favored forage of bison and hopes are to lure the buffalo away from training areas in a safe, non-harassing manor.

Species of Concern

There are no federally listed endangered or threatened species on DTA.

A number of Alaska species of concern found on DTA are highlighted in table 3.3.4.3-1 below.

Table 3.3.4.3-1. Species Of Concern Found On Donnelly Training Area

Training Area	Group	Species	Scientific Name
DTA- East	Mammal	Wolverine	*Gulo gulo*
	Bird	Boreal Owl	*Aegolius funereus*
	Bird	White-tailed Ptarmigan	*Lagopus leucura*
	Bird	Surfbird	*Aphriza virgata*
	Bird	Wilson's Snipe	*Gallinago delicata*
	Bird	Spruce Grouse	*Falcipennis canadensis*
	Bird	Sandhill Crane	*Grus canadensis*
	Bird	Upland Sandpiper	*Bartramia longicauda*
	Bird	Olive-sided Flycatcher	*Contopus cooperi*
	Mammal	Lynx	*Lynx canadensis*
DTA - West	Mammal	Wolverine	*Gulo gulo*
	Bird	Rusty Blackbird	*Euphagus carolinus*
	Bird	Boreal Owl	*Aegolius funereus*
	Bird	Great Gray Owl	*Strix nebulosa*
	Bird	Wilson's Snipe	*Gallinago delicata*
	Bird	Spruce Grouse	*Falcipennis canadensis*
	Bird	Sandhill Crane	*Grus canadensis*
	Bird	Upland Sandpiper	*Bartramia longicauda*

Environmental Consequences

Live-fire Training: (Minor) Overall impacts to wildlife are anticipated to be minor, with the primary impact being an increase in Soldiers and the associated increase in live-fire training. No additional range or infrastructure construction is necessary to support the proposed action at DTA. Most training occurring at DTA as a result of the proposed action would be conducted in conjunction with existing units, rotating high-demand combat support and combat service support units among the 4/25th SBCT. There would not be an appreciable increase in training occurring at DTA. The live-fire facilities at DTA have been evaluated for impacts to wildlife to include peak levels of training (which would not occur as a result of implementation of the proposed action.

From mid May through mid June, bison move through DTA from the east and may traverse impact areas. A larger number of Soldiers training may inhibit bison from moving into calving grounds. Before any live-fire occurs, range control does a bison sweep. DTA policy is that live-fire cannot occur within 1500 meters of the bison and the ADF&G concurred. Policy also dictates that Soldiers cannot disturb bison when in training areas. Previous training has had to be ceased and rescheduled due to bison in or near impact areas.

Maneuver Training: (Minor) Overall impacts to wildlife and fisheries would be minor, with the primary impact being an increase in Soldiers and the associated increase in maneuver training. Some land disturbing activities are expected with little impact on fish and wildlife is expected. Maneuver training areas are already established and best management practices are overseen by the ITAM program.

During bivouac activities, areas north of the herd are designated as accessible for use based on previous knowledge and current mapping of herd.

Mitigations

Continued implementation of the INRMP which helps maintain natural resource sustainability is required.

Continue to cooperatively manage the Delta Bison Herd with ADF&G to ensure sustainment of the military mission and the health of the bison population.

Continue planting of blue grass in designated areas south of DTA's training areas to help bison move away from training areas in a safe, non-harassing manor.

Continue to limit firing within 1,500 meters of bison.

Continue prohibition of disturbance to bison by Soldiers during training events.

3.3.5 Vegetation

3.3.5.1 Fort Richardson

Affected Environment

Most lands used by the USAG FRA were relatively undisturbed when they were withdrawn for military use in the early 1940s. Military activities may have resulted in localized changes in ecosystems and affected abundance of certain species for short periods, but probably have not affected the overall diversity of species. The greatest losses of habitat are associated with construction and urbanization of the cantonment areas.

USAG FRA lands are within the polar domain of Bailey's ecoregion classification system, which is characterized by low temperatures, severe winters, and relatively low precipitation. (Bailey 1995). These lands are also classified within the subarctic division, which is influenced by cold snowy climate. Dominant forests in the subarctic division are boreal subarctic forests, open lichen woodlands, and taiga.

Vegetation type and distribution is generally influenced by climate, topography, soil types, hydrology and other factors; and in Alaska vegetation types are broadly classified as barren lands, tundra, forest land, and scrub land, and wetland. Twenty-nine plant species are ranked in the current draft of USAG FRA's list of species of concern for ecosystem management at FRA; these species are all considered imperiled or critically imperiled within the state of Alaska according to the Alaska Natural Heritage Program Rare Vascular Plant Tracking List, April 2007 (AKNHP, 2007).

USAG FRA conducted extensive studies and surveys of its land assets from 1998 to 2000. Detailed maps and classifications of vegetation relative to USAG FRA's land assets are found in Jorgenson et al. (1999, 2001, 2002). According to *An Ecological Land Survey at Fort Richardson, Alaska* (Jorgenson et al. 2002), the post is 61,972 acres, more than 55 percent of which is covered by forest. The Final EIS for Transformation of U.S. Army Alaska (CEMML 2004) offers a more comprehensive discussion of vegetative cover throughout the installation. FRA's INRMP describes further the installation's forest management program.

Environmental Consequences

Garrison Construction: (Minor) The proposed cantonment area construction on FRA is anticipated to have a minor impact on vegetation resources. Not all facilities planned for construction would require vegetation removal.

Figure 3.3.4.1-1 illustrates the proposed construction sites within the cantonment area. While much of the proposed construction areas are currently vegetated, they are all considered previously disturbed and were likely logged over at one point in the past. Additionally, these areas contain no vegetation species of concern and these areas do not provide habitat for priority wildlife species or management species of concern.

Training Infrastructure Construction: (Minor) The proposed training infrastructure range on FRA is anticipated to have a minor impact on vegetation. Expansions are planned for established ranges where the area has been previously disturbed. While the areas of range

expansion are generally vegetated and will be cleared using appropriate methods, the proposed project areas do not contain vegetation species of concern.

Live-fire Training: (Minor). Overall impacts to vegetation resources would be minor, with the primary impact being an increase in Soldiers and the associated increase in live-fire training on established ranges. As seen in figure 3.3.4.1-2, much of the ranges requiring expansion are not vegetated. Regular maintenance is conducted on small arms ranges to provide a stabile and sustainable training area. Consideration will be given to native species as part of any re-vegetation. Mitigation and best management practices would help to further reduce the level of impact.

Maneuver Training: (Minor to Moderate). Overall impacts of increased maneuver training to vegetation would be minor to moderate, with the primary impact being an increase in Soldiers and the associated increase in maneuver training. Maneuver training areas are already established and best management practices are overseen by the installation training area management program and in accordance with USAG Alaska Regulation 350-2. Damage to vegetation from military activity occurs primarily from off-road maneuver training. Off-road impacts are less harmful during winter when snow pack protects vegetation. MIMs requirements would increase from approximately 150,802 /year to 194,297/year, and increase of approximately 28.8 percent.

Due to existing environmental regulations, adverse effects to vegetation would be minimized. For instance, Soldiers are directed to drive vehicles on established roads or trails. Vegetation would be monitored and any damaged areas would be rehabilitated under the Integrated Training Area Management program. Minor effects to vegetation from maneuver training would occur but impacts would be localized.

Mitigations

In accordance with USAG Alaska Regulation 350-2, units conducting maneuver training on all affected training areas must adhere to specific control measures and avoid certain areas and specific activities that have been deemed environmentally incompatible with sound land management practices. In addition, live trees greater than four inches in diameter will not be cut or damaged during training without prior approval.

Areas disturbed by project construction would be stabilized using native vegetation to minimize erosion and subsequent sedimentation of wetlands and streams. Also, continued implementation of the INRMP which helps maintain natural resource sustainability is required.

ITAM projects would continue to repair and provide vegetative cover to areas disturbed by maneuver training.

3.3.5.2 Fort Wainwright

Affected Environment

Vegetation inventory efforts are accomplished by conducting comprehensive “fence line-to-fence line” flora and vegetation community planning level surveys. Vegetation monitoring is accomplished through the RTLA program. USAG FWA conducts a baseline floristic survey at least once every ten years to identify all vegetative species that occur on all USAG FWA lands.

Floristic inventory activities set the foundation on which many decisions regarding land management are based.

A comprehensive survey of rare plants was included as part of the floristic inventory for FWA conducted in 1995 and released in 1996 indicated that there were no federally listed endangered or threatened plant species on FWA. The survey report indicated that there are 491 plant species identified by the inventory, of which 18 species are currently recognized as "rare" (AKNHP, 2007). Nine plant species are ranked in USAG FWA's current draft list of species of concern at FWA for ecosystem management; these species are all considered imperiled or critically imperiled in Alaska.

FWA has four vegetation types: moist tundra; treeless bogs/fens; open, low-growing spruce forests; and closed spruce-hardwood forests. The white spruce-paper birch forest of interior Alaska is often called the boreal forest or taiga. Higher elevations on north-facing slopes are dominated by Black spruce; these are also found on lower hydric slopes. Above the treeline is generally considered barren or tundra and are dominated by sedges and mosses on hydric soils and scrub birch and willow shrubs on arid sites. FWA maintains forestry monitoring plots to monitor vegetation.

A more detailed ecological classification of vegetation in Alaska; forest management goals and objectives and responsibilities; and a listing of flora identified throughout USAG FWA lands may be found in USAG Alaska's INRMP (INRMP, 2006).

Environmental Consequences

Garrison Construction: (Minor) The proposed cantonment area construction on FWA is anticipated to have a minor impact on vegetation. As shown in figure 3.3.4.2-1, areas under consideration are highly disturbed from prior construction and generally are not vegetated to any great degree. They also do not contain vegetative species of concern.

Training Infrastructure Construction: (Minor) The proposed expansion of the Small Arms Range Complex may result in minor impacts on vegetation. Planned expansion involves additional training lanes being constructed at established sites. Expansions are planned for established ranges where the area has been previously disturbed. While portions of the proposed project areas are vegetated (see figure 3.3.4.2-2), the area does not contain vegetation species of concern.

Live-fire Training: (Minor) Overall impacts to vegetation are anticipated to be minor, with the primary impact being an increase in Soldiers and the associated increase in live-fire training on established ranges. This will result in some additional disturbance to the vegetation on and in between target engagement areas. A regular range maintenance program that emphasizes re-vegetation and soil stability is already in place to mitigate and repair the impacts associated with training. Consideration is given to native species as part of any re-vegetation project. Additional best management practices are often utilized to further reduce the level of impact.

Maneuver Training: (Minor to Moderate) Overall impacts of increased maneuver training to vegetation would be minor to moderate, with the primary impact being an increase in Soldiers and the associated increase in maneuver training. MIM requirements would increase from approximately 192,947/year to 206,316/year, an increase of approximately 6.9 percent. A large amount of maneuver training will use established roads and avoid off-road training. At TFTA, maneuver training is primarily conducted during winter months. YTA has a number of

established roads and trails used for maneuver training. For Engineer training, established dig pits are available in several locations.

Mitigations

Areas disturbed by project construction would be stabilized using native vegetation to minimize erosion and subsequent sedimentation of wetlands and streams.

Continue to adhere to the MBTA and the BGEPA. To the extent practicable, vegetation-clearing activities will occur between May 1 and July 15 in order to reduce the chance of incidental take of migratory birds or active nests.

ITAM projects would continue to repair and provide vegetative cover to areas disturbed by maneuver training. Also, continued implementation of the INRMP which helps maintain natural resource sustainability is required.

In accordance with USAG Alaska Regulation 350-2, units conducting maneuver training on FWA, YTA and/or TFTA, during special conditions must adhere to specific control measures and avoid areas and specific activities that have been deemed environmentally incompatible with sound land management practices. In addition, live trees greater than 4 inches in diameter will not be cut or damaged during training without prior approval.

Consideration will be given to native species as part of any re-vegetation. Mitigation and best management practices would help to further reduce the level of impact.

3.3.5.3 Donnelly Training Area

Affected Environment

An Ecological Land Survey for Fort Greenly, Alaska (Jorgensen et al. 2001) reported vegetation cover as forest (29%), scrub lands (58.1%), tundra (4.4%), barren lands/partially vegetated (3.6%), human disturbed (0.6%), and water (4.3%). Forest cover at DTA is diverse and includes pure stands of spruce, hardwoods, and spruce/hardwood mixtures. The dominant types include white spruce, paper birch, quaking aspen, balsam poplar, black spruce, and spruce/hardwood. Scrub communities (typically composed of alder, willow, and dwarf birch) occur at high mountain elevations, in small stream-valley bottoms, and as pioneer vegetation on disturbed sites. Dense thickets of scrub communities exist along the Delta River, the Little Delta River, Delta Creek, Jarvis Creek, and Granite Creek (Jorgensen et al. 2001). Barren lands also occur above tree line, along ridges, and adjacent to rivers and streams. Higher elevation sites along the southern portion of DTA support moist tundra, which grades into alpine tundra and then into barren land (USAG Alaska, DTA East EA, January 2008).

A floristic inventory of DTA (Racine et al. 2001) did not include all possible taxa on post but did identify 497 vascular species, representing about 26% of Alaskan vascular plants, as identified by Hulten (1968). Fifteen species of rare plants on DTA are being monitored. Eight plant species of concern are ranked in the current draft list of species of concern at DTA for ecosystem management (AKNHP, 2007). They are all considered imperiled or critically imperiled in the state.

Environmental Consequences

Live-fire Training: (Minor) Overall impacts to vegetation would be minor.

Maneuver Training: (Minor) Overall impacts to vegetation would be minor, with the primary impact being an increase in Soldiers and the associated increase in maneuver training requirements. Maneuver training areas are already established and best management practices are overseen by the ITAM program and in accordance with USAG Alaska Regulation 350-2. Maneuver training on DTA is primarily conducted on established roads and trails with little training off-road.

Mitigations

Continued implementation of the INRMP which helps maintain natural resource sustainability is required.

ITAM projects would continue to repair and provide vegetative cover to areas disturbed by maneuver training. Also, continued implementation of the INRMP which helps maintain natural resource sustainability is required.

In accordance with USAG Alaska Regulation 350-2, units conducting maneuver training on DTA, during special conditions must adhere to specific control measures and avoid areas and specific activities that have been deemed environmentally incompatible with sound land management practices. In addition, live trees greater than 4 inches in diameter will not be cut or damaged during training without prior approval.

Consideration will be given to native species as part of any re-vegetation. Mitigation and best management practices would help to further reduce the level of impact.

3.3.6 Invasive Species

3.3.6.1 Fort Richardson

Although surveys have not revealed any major invasive plant infestations, management of invasive plant species remains an issue of concern on FRA lands. Overall, the moderate increase in live-fire activity at FRA associated with this action, coupled with established management programs and other mitigating factors, is anticipated to result in a minor impact to invasive species on FRA as a result of all activity areas.

3.3.6.2 Fort Wainwright

Although surveys have not revealed any major invasive plant infestations, management of invasive plant species remains an issue of concern on FWA lands. Overall, the minor increase in live-fire activity at FWA associated with this action, coupled with established management programs and other mitigating factors, is anticipated to result in a minor impact to invasive species on FWA as a result of all activity areas.

3.3.6.3 Donnelly Training Area

Affected Environment

Management of invasive plant species is an issue of concern on DTA lands. According to EO 13112, *invasive species*, invasive species are species non-native to a particular ecosystem and whose introduction causes economic or environmental harm or harm to human health (Committee for Noxious and Invasive Plants Management in Alaska 2005). Although recent surveys have not revealed any major invasive plant infestations (USAG Alaska, 2006), several invasive species do occur within DTA. Specifically, narrowleaf hawksbeard (*Crepis tectorum*) and foxtail barley (*Hordeum jubatum*) have begun to spread down roadsides in the training areas. To counter this, vegetation control is periodically conducted along roadsides, around range buildings, fences, and targetry infrastructure.

Invasive weed species are often spread through the purchase, transportation and utilization of contaminated seed, forages, topsoil, gravel and plant materials. Vehicles (including railroads) and water are the most common agents for spreading invasive plant species. Vehicle tracks and tires as well as soldiers' boot treads, can serve as vectors for the distribution of invasive species' seeds, which increases the likelihood that they will become established, especially in conjunction with soil disturbance activities. Wildfire suppression crews, tourists, and hunters, can also contribute to the introduction of invasive species. Wildfire and other events (i.e. engineer training and off-road vehicle maneuvers) that result in the removal of native vegetative cover can serve to create favorable conditions for the establishment of invasive species.

Historically, the most important control mechanism for the spread of invasive species was the range of temperatures and meteorological conditions, coupled with the inhospitable climate during the winter months, which inherently favors native species adapted to such conditions and ultimately serves as a check on the successful spread of many potential invasive species. In recent years, however, there has been a noticeable increase in the presence of invasive species where they previously were unable to become established which challenges the enduring effectiveness of this most basic control.

The RTLA program conducts annual natural resources monitoring on training lands and monitors and documents vegetation and invasive species during surveys. DTA lands have few faunal invasive species and the primary invasive species, numerically speaking, are vascular plants. These species are managed using integrated pest management techniques, whereby chemical control is minimized. The purpose of the USAG FWA invasive species program is to detect and manage invasive species in order to inhibit negative impacts to the environment and military training operations. Objectives of the program are to:

- Conduct annual surveys for invasive species including vegetation, fish, birds and mammals.
- Determine the location and extent of invasive species on USAG FWA lands.
- Determine an index of noxious weed abundance relative to native vegetation.
- Map all invasive locations and maintain a current Geographic Information System (GIS) database for proactive management.
- Develop and implement protocol to inhibit movement of invasive species among posts from military convoys and exercises.

Invasive Species Survey and Monitoring

Various natural resources studies are continually occurring within the Garrison. These projects span fisheries management, small mammal inventories, flora and fauna planning level surveys and a multitude of avian surveys. These surveys document invasive species present. If certain species are discovered (e.g., northern pike in Otter Lake on FRA), the ecosystem management team discusses management options and appropriate actions are taken to minimize potential damage to the environment and military training opportunities. This has been done opportunistically to date.

RTLA conducts three types of invasive plant surveys: RTLA plots, incidental, and target areas. Formal comprehensive inventories have not been conducted. Invasive species that occur, their locations, infestations and distributions need to be identified and a formal monitoring program implemented.

Environmental Consequences

Live-fire Training: (Minor) The firing of ammunition, primarily tracer rounds, presents an increased risk of wildland fire, which eliminates vegetative cover and creates conditions that can favor invasive species. The increased troop population at FWA and FRA is likely to result in a minimal increase in live-fire activity on DTA. All individual weapons qualification requirements for these units will be accommodated by the ranges within the SACs of FWA and FRA. The frequency and intensity of large, integrated live-fire training activities at DTA are driven primarily by the combat units, not the CS/CSS units that accompany them. Overall, the minimal increase in live-fire activity at DTA associated with this action, coupled with established management programs and other mitigating factors, is anticipated to result in a minor impact to invasive species on DTA.

Maneuver Training: (Minor to Moderate) The primary invasive species risk factor associated with maneuver training is soil disturbance and the destruction of native plant species, which can create the conditions for aggressive invasive species to move in and become established. As with live-fire training, much of the maneuver training at DTA is driven by combat units and not by the CS/CSS units associated with this action. Therefore, only a minor increase in the intensity and frequency of maneuver training at DTA is anticipated as result of the increased troop population at FWA and FRA. The MIMs analysis in Section 3.3.3.2 confirms this general conclusion. Planned upgrades to the trail network at DTA are long-term projects that still need section 404 permitting and funding. Once the upgrades are completed, they would allow for increased vehicle traffic and serve to reduce the need for and incidence of off-road vehicle maneuvering, which is the primary cause of the majority of soil disturbance and its associated invasive species concerns. Overall, the anticipated impact of maneuver training on invasive species as result of this action is minor to moderate.

Engineer unit training generally results in an increased level of impact as compared to other CS/CSS units. As a result, engineering activity (i.e digging fighting positions, creating and clearing battlefield obstacles, clearing roads and bivouac areas) represents the majority of the potential increase in soil disturbance, which can lead to increased presence of invasive species.

Mitigations

Conduct monitoring to determine extent of invasive species presence on Army lands in Alaska.

Management should include collaborative efforts with area agencies and entities. Much work on invasive species is being conducted by the ADF&G, NPS, University of Alaska Fairbanks, BLM, and the Alaska Committee for Noxious and Invasive Plants Management in Alaska. It would be beneficial to include the recommendations from these efforts and agencies into the development of the USAG FWA invasive species program.

3.3.7 Wetlands

3.3.7.1 Fort Richardson

Affected Environment
Almost half of Alaska is classified as wetlands, which make wetlands important to Alaska's economy, ecology, and culture. Wetland types found in Alaska are saltwater or brackish (tidal flats and estuaries), and freshwater further divided into marshes, bogs, and fens. A more detailed description of these wetland types is found in Robert G. Bailey's Description of Ecoregions of the United States (U.S. Department of Agriculture, 1995). Table 3.3.7.1-1 below lists and describes the wetlands known to exist throughout FRA, and quantifies the percentage of FRA land that these wetland features occupy.

At FRA, nearly 4,990 acres of land (or approximately eight percent) is classified as wetlands. This includes marine and freshwater, tidal and non-tidal types. The largest of these resources is Eagle River Flats at 2,165 acres; which is now listed on the EPA's National Priorities List for cleanup of hazardous substances. Although the hazardous material found there, chiefly white phosphorus, was determined to have little to no impact on most wildlife species that live or forage for food there, water birds were determined to be at serious risk, especially shorebirds, dabbling ducks, and swans. In a step to preserve that important resource, USAG FRA ceased the use of white phosphorus in 1989; and munitions items containing the chemical constituent were banned from impact areas throughout Alaska in 1991. Remediation efforts are ongoing at Eagle River Flats.

No wetlands are found in the cantonment area at FRA. Small pockets of wetlands exist in the training areas of FRA. During springtime, it has been historically difficult to differentiate between wetlands and temporary standing water from snowmelt; both can appear hydrologically similar without further investigation. Lowland forest wetlands (bordering Ship Creek) within the small arms range complex, are located in the expansion path of the MPMG Course (Memorandum for Record, 14 July 2008, Planning Charrette for an FY11 MPMG Course at FRA, and UAC at FWA).

Table 3.3.7.1-1. Wetland Types Found At Fort Richardson

Wetland Type	Totaling ~8% of FRA Land	Wetland Characterization and/or Location	Vegetation
Coastal Halophytic Zone	3%	Shoreline tidal flats and barren mud flats Eagle River Flats (2,165 acre estuarine marsh)	Rye grass, Lyngebye sedge, Maritime arrow grass, Glasswort, Goose tongue, and Alkali grass
Lowland Forest Wetlands	3%	Palustrine Bordering Ship Creek, McVeigh	Bluejoint grass, Oak fern, Red raspberry, Lowbrush cranberry, Red currant, shrubs, and sedges

Table 3.3.7.1-1. Wetland Types Found At Fort Richardson

Wetland Type	Totaling ~8% of FRA Land	Wetland Characterization and/or Location	Vegetation
		Creek, Fossil Creek Bottomlands; areas southwest of Eagle River Flats; and south and west of Clunie Lake.	
Lacustrine Wetlands	1%	Open water and vegetated with sedges	Marsh Five-finger, Marsh and Woodland horsetail, Cahmiss's cottongrass, Shore sedge, and Sphagnum moss
Alpine and Subalpine Wetlands	0.3%	Sub-alpine areas of FRA	Bluejoint meadow wetlands

Environmental Consequences

Garrison Construction: (No Impact) Because there are no wetlands present in the cantonment area, no impacts are expected. See Figure 3.3.4.1-1 for the extent of Wetlands within the cantonment area.

Training Infrastructure Construction: (Minor) Upgrades to the MPMG Course will require the installation to apply for a Section 404 permit under the CWA (33 USC 1344). The installation intends to be in compliance with EO 11190. If it's determined that there are jurisdictional wetlands, FWA will confer with the USACE and if USACE requires a section 404 permit, FWA will comply with all mitigation. See figure 3.3.4.2-1 for the extent of wetlands within the range areas.

Live-fire Training: (Minor) Overall impacts to wetlands would be minor, with the primary impact being an increase in Soldiers and the associated increase in live-fire training on established ranges. The live-fire activities are not anticipated to change the function or presence of wetlands at FRA. The presence of munitions constituents may occur in some wetlands areas on designated firing ranges.

Maneuver Training: (Moderate) The impacts to increased military training of Soldiers in established maneuver areas would be moderate. No additional roads or trails would likely be constructed and therefore only minor impacts to nearby wetlands from runoff are anticipated.

FRA currently institutes a policy of no maneuvering in wet areas and implementation of seasonality guidance for range area use. This prevents the rutting and damage to wet areas including wetlands during certain seasonal conditions. Mounted training during summer months would occur on existing roads. Dismounted maneuver training would occur at any of the established training areas. AR 350-2 provides guidelines for winter training/summer training and should be reviewed for proper adherence.

The installation ITAM program also provides guidance on how best to avoid impacts to wetlands. Most training would occur mainly on established roads and trails. Traveling off established routes often leads to vehicles becoming stuck, and the possibilities of rutting which can create fill next to the rut. The use of training lands by combat engineers requires that AR 350-2 be reviewed and followed.

Mitigations

Where necessary, natural drainage patterns would be maintained by the installation of culverts of adequate number and size to prevent flooding or excessive drainage of adjacent wetlands.

Continued implementation of the INRMP, which helps maintain natural resource sustainability, is required.

3.3.7.2 Fort Wainwright

Affected Environment

FWA Main Post has approximately 6,500 acres of palustrine, riverine, and lacustrine-type wetlands. Wetlands comprise approximately 483,500 acres (74%) of the TFTA, and YTA has 42,600 acres (17%) classified as wetland.

An environmental limitations overlay has been developed as a tool for planning military training activities and managing wetlands. Each overlay is available for winter and summer training for activities which can or cannot occur. This simplified system assists Range Control staff in determining what training areas can be used during a particular season and assists in planning for future training activities. Table 3.3.7.2-1 demonstrates the wetland types found at FWA and interior Alaska training areas. More discussion of wetlands on USAG FWA lands may be found in the USAG Alaska INRMP (INRMP, 2006), the Final EIS for the Permanent Stationing of the 2/25th SBCT (USAEC 2008), and the Final EIS for Transformation of U.S. Army Alaska (CEMML 2004).

Table 3.3.7.2-1. Wetland Types Found At Fort Wainwright And Interior Alaska Training Areas

Wetland Type	% of Total Wetlands	Wetland Characterization and/or Location	Vegetation
FWA Main Post			
Palustrine, riverine, lacustrine	42	Bogs, fens, marshes with wide distribution around the post.	Bogs generally are sphagnum, sedge, or sheathed cottonsedge. Understory vegetation is primarily dwarf birch, bog rosemary, Labrador tea, low bush cranberry, and willows
Tanana Flats Training Area			
Lowland Tussock Bog	3	Poorly drained due to permafrost.	Sites are canopy of shrubs and tussocks of cottonsedge
Fens	7	Poorly drained	Vegetation is dominated by floating mats of sedges, grasses, horsetails, herbaceous broadleaf forbs. Willows and birches may also be present
Lowland Wet Needleleaf Forest	25	Wet or loamy organic soils	Black spruce, white spruce, and occasional tamarack
Lowland Forest and Scrub Thermokarst Complexes	27	Abandoned floodplains and collapsed bog scars	Forest, scrub, bog, and fen plant communities
Riverine and	9	Moist loamy soils	Needleleaf, broadleaf, or mixed

Wetland Type	% of Total Wetlands	Wetland Characterization and/or Location	Vegetation
Lacustrine Complexes			forests; shrubs; or meadows
Other Wetlands	3	Various upland ecotypes	Variety of vegetation
Yukon Training Area			
Shrub Wetlands	2	Poorly drained soils that may be underlain by permafrost; generally found along South Fork Chena River lowlands, the Stuart Creek Impact Area, and the French Moose Creek area	Alder and willow
Lowland Wet Needleleaf Forest	11	Wet loamy soils to organic soils that are slightly acidic and poorly drained; found in low-lying areas and creek floodplains	Black spruce and ericaceous shrubs
Wetland Upland Complex	27	Determined that most middle and lower portions of north-facing slopes in the wetland/upland complex of YTA are likely wetlands	

Environmental Consequences

Garrison Construction: (Minor) All project locations within the cantonment area are located within the Chena River floodplain, as is the entire main post. Although pockets of wetlands exist within the main post of FWA, there are no wetlands present at the proposed project locations. Therefore, no additional wetland surveys will be required.

Range Infrastructure Construction: (Minor) According to a 14 July 2008 Memorandum, *Planning Charrette for FY11 Multi-purpose Machine Gun Range at Fort Richardson and Urban Assault Course at Fort Wainwright, Alaska*, wetlands exist in proximity to the planned UAC at FWA. Expansion of the UAC is anticipated to require minor wetlands mitigation. Project designers would attempt to avoid impacts to nearby waterways through proper design. If it is determined that there are jurisdictional wetlands, FWA will confer with the USACE and if USACE requires a section 404 permit, FWA will comply with all mitigation.

Live-fire Training: (Minor) The live-fire activities that are currently ongoing at FWA small arms range complex do not threaten existing wetlands. Range expansion projects associated with the proposed action could potentially have a minor impact on the function or presence of wetlands at FWA. The increased presence of munitions constituents could potentially occur in some wetlands areas located on current and future range areas.

Maneuver Training: (Moderate) The impacts to increased military training of Soldiers in established maneuver areas would be moderate. FWA currently institutes a policy of no maneuvering in wet areas and implementation of seasonality guidance for range area use. This prevents the rutting and damage to wet areas including wetlands during certain seasonal conditions. Mounted training during summer months would occur on existing roads. Dismounted maneuver training would occur at any of the established training areas. Any anticipated impact to wetlands would go through the process of obtaining any required wetland

permit. AR 350-2 provides guidelines for winter training/summer training and should be reviewed for proper adherence. The installation ITAM program also provides guidance on how best to avoid impacts to wetlands.

Mitigation

All mitigation, if required, would be conducted as required by terms and conditions in the USACE Section 404 permit.

Continued implementation of the INRMP which helps maintain natural resource sustainability is required.

ITAM projects would continue to repair and provide vegetative cover to disturbed areas, reducing the percentage of impact.

3.3.7.3 Donnelly Training Area

Affected Environment

Much of DTA is classified as wetlands, which are sociologically, ecologically, and economically important to the area. Wetlands in Alaska are unique compared to wetlands in lower latitudes because of features such as permafrost and aufeis (river channel ice) **(**Construction and Operation of a BAX and CACTF within US Army Training Lands Alaska (USAG Alaska 2006)**).** DTA has an estimated 431,940 acres of wetlands (68% of installation) with palustrine, riverine, and lacustrine types identified. Table 3.3.7.3-1 below outlines the types of wetlands found on DTA.

Table 3.3.7.3-1. Wetland Types Found At DTA

Wetland Type	% of Total Wetlands	Wetland Characterization and/or Location	Vegetation
Alpine Tussock Meadow and Alpine Wet Low Scrub	6	Underlain with permafrost; moderately to strongly acidic Found above the treeline, primarily in the southern portion of DTA west along the foothills of the Alaska Range	Sedges, Dwarf birch, Willow, Ericaceous shrubs, and Sphagnum moss
Lowland Wet Low Scrub and Lowland Tussock Scrub Bog	35	Loamy soils that are poorly drained due to permafrost.	Sedges, Bluejoint reedgrass, willows, dwarf birches, and forbs
Lowland Wet Needleleaf Forests	12	Poorly drained due to permafrost; moderately acidic.	Ericaceous shrubs, Black spruce, and Sphagnum moss
Riverine and Lacustrine Wetland Complexes	7	Wetlands located along active and inactive floodplains of meandering and headwater streams. \Lakes and ponds with emergent or floating	Forest broadleaf, needleleaf, or mixed shrubs, Willows and Alders, grasses, and sedges

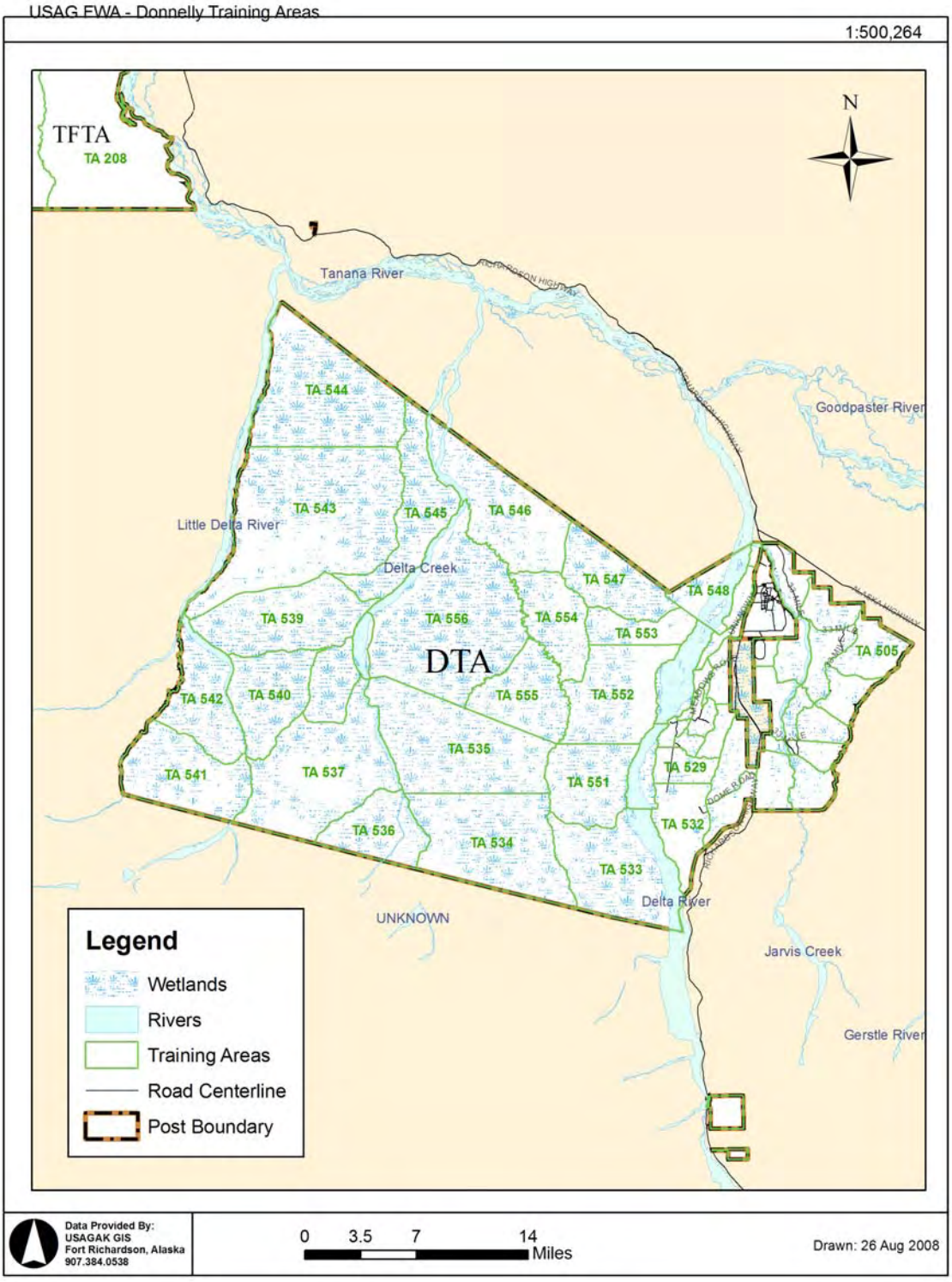
		vegetation, and wetland vegetation on lake or pond margins.	

Wetlands management at DTA is implemented on the primacy of the military mission and the belief that effective training can be accomplished with minimal long-term environmental damage while complying with applicable laws and regulations. Effective military training and environmental stewardship are compatible and necessary for the maintenance of a quality military training environment and protection of sensitive wetland areas (USAG Alaska 2002). (USAG Alaska 2006).

Various wetland studies have been conducted on DTA. A National Wetlands Inventory (NWI) was conducted by the USFWS for the DTA in 1988. The purpose of the survey is to provide general data about where wetlands are located. The survey is not sufficient to be used to assess wetland jurisdiction, in which wetlands delineation is required.

Since 2000, USAG FWA has managed military training in wetlands at DTA by limiting maneuver or other military activities to upland and certain wetland areas based on the potential for environmental damage. (USAG Alaska 2006) Figure 3.3.7.3-1 below shows the extent of wetlands found at DTA.

Figure 3.3.7.3-1. Wetlands at DTA



Environmental Consequences

Live-fire Training: (Minor) Overall impacts to wetlands would be minor. There are currently no restrictions for firing into wetlands except those related to installation policy dealing with white phosphorus. Before training occurs, the installation is provided a list of weapons and reviews for the use of white phosphorus in any weapon.

Maneuver Training: (Minor to Moderate) Overall impacts to wetlands are anticipated to be minor to moderate. Some land disturbing activities are expected with little impact to wetlands expected. Maneuver training areas are already established and best management practices are overseen by the ITAM program. Most training would occur mainly on established roads and trails. Going off these established roads and trails leads to vehicles becoming stuck, and the possibilities of rutting.

Mitigations

Continued implementation of the INRMP which helps maintain natural resource sustainability is required.

ITAM projects would continue to repair and provide vegetative cover to disturbed areas, reducing the percentage of impact.

Combat engineers must read and understand the policies of USARAK Range Regulation 350-2 prior to engaging in activities on training land. Any areas in which the engineer units propose to dig must be approved in advance by the installation's excavation approval process.

3.3.8 Wildland Fire Management

Though many ecosystems require fire for function and productivity, wildfires are a concern for USARAK Garrisons because of their potential impact on quality of life and infrastructure as well as military operations and training. Alaska's Northern boreal ecosystems evolved with natural fire events, and future disturbance by wildland fires is virtually assured regardless of any and all management approaches taken by USARAK Garrisons. Information on Alaskan fire effects by vegetation types has been summarized in *Wildland Fire in Ecosystems: Effects of Fire on Flora* (USFS 2000) and reviewed in *Effects of Fire in Alaska and Adjacent Canada: A Literature Review* (Viereck and Schandelmeier 1980). This information summarizes the effect on individual species and is incorporated by reference into this analysis. A Detailed Analysis of wildfire potential on USARAK lands can be found in the *Transformation of U.S. Army Alaska Final Environmental Impact Statement* (CEMML 2004); *2007-2011 U.S. Army Garrison Alaska Integrated Natural Resources Management Plan* (USAG Alaska 2007); and the Alaska Wildland Fire Management Plan.

The floor of Alaskan forests is composed almost entirely of small, fast drying fuels. When relative humidity decreases, the moisture content of these fuels also drops quickly. Surface fuels in Alaska become almost involatile above 15 percent moisture content. They burn readily at 8 to 10 percent, and at 5 to 7 percent, these fuels burn with fierce intensity and can carry fire into tree crowns.

In general, when the relative humidity drops into the 40 percent range, trees become susceptible to fire and, if wind speed is over 10 mph, such a fire will become a slow moving crown fire with a surface fire ahead of the crown fire. If relative humidity falls into the 30 percent

range, potential fire intensity increases. While well-established fire lines can hold a fire if wind is below 5 mph, wind speeds of 10 mph (or greater) will create a full-blown, running crown fire that "spots" ahead and is too hot for fire crews to handle. Relative humidity of 30 percent (or lower) can be dangerous since crown fires are nearly certain and the fire is too intense to approach. Any wind will cause spotting across all but the widest fuel breaks. Winds above 10 mph spell a catastrophic evacuation situation.

Fire Hazard Assessment of USARAK Lands

Fire hazard assessments have been conducted on USARAK lands by Alaska Fire Service (AFS) fuels management specialists, with the assistance of USAG FRA and USAG FWA forestry personnel, to evaluate the potential implications of siting military ranges in certain areas. An increase in overall military range construction on Army lands created the need to identify and prioritize fuel reduction efforts. These assessments provided a high, moderate, or low potential fire behavior rating based on existing vegetation, topography, and general area weather characteristics. These assessments were based on established AFS fire hazard assessment methods.

Certain military activities are restricted when thresholds of wildfire risk are reached, as required by USAG Alaska Range Regulation, 350-2 (*i.e.*, use of pyrotechnics, smoke pots, and grenades may be restricted when fire danger is high and extreme, and smoke grenades and star-cluster flares will be used only for emergency operations during high and extreme fire danger times). Weather readings are collected by the USAG FRA and USAG FWA Fire Departments and used to calculate the fire danger rating according to the Canadian Forest Fire Danger Rating System (CFFDRS). The USAG FRA and USAG FWA Fire Departments provide the rating to Range Control, which restricts the use of munitions and pyrotechnics as the fire danger increases.

USARAK Garrisons use an established fire risk index during low, moderate, high and extreme fire danger periods to minimize fire occurrence from live fire activities. Currently, training activities are modified based on the fire risk index. Table 3.3.8-1 illustrates some of the training modifications required based on the fire index rating. USAG Alaska policy provides for modifications to the training restrictions if the event is required for deployment preparation (in response to a actual conflict preparation versus routine training) and is based on the Command's decision.

Table 3.3.8-1. Existing Fire Hazard Range Restrictions

Fire Index Rating	Existing Restrictions at DTA
Extreme	– Use of blank and ball ammunition allowed on established ranges. – Use of pyrotechnics is prohibited. – Ground units are required to carry and use fire-fighting equipment.
High	– Use of blank and ball ammunition allowed. – Use of pyrotechnics is prohibited. – Ground units are required to carry and use fire-fighting equipment.
Moderate	– Use of blank and ball ammunition allowed. – Use of pyrotechnics (e.g., smoke or trip flares) is prohibited unless used in a container that completely contains all burning elements of the device.
Low	– No restrictions.

USARAK Garrison Fire Policy

Fire management on USARAK lands is required by the Sikes Act and by AR 200-3, as well as the Resource Management Plan mandated under Public Law 106-65, Military Lands Withdrawal Act. Specific fire management requirements are stated in the Army's Wildland Fire Policy Guidance as well as a memorandum of understanding between the BLM, AFS and USARAK Garrisons.

On-going Mitigation Measures

Areas most likely to be affected by wildland fire are adjacent to those areas that are used for training and live-fire training in particular. Since wildfire spreads unpredictably, the area of influence is difficult to determine. To address this issue, several mitigation measures currently exist to prepare the landscape for impending wildland fires (e.g., prescribed burns and thinning to restore ecosystem functions of fire and to reduce future fire severity). The implementation of USAG FWA and FRA's INRMP, and/or the implementation of the installation and USAG Alaska's fire management plans are key components.

The following mitigation measures currently in place for Alaska Army lands are continually revised and reviewed to respond to new or increasing impacts. These mitigation measures are implemented as funding is available. Often funding only provides for partial implementation.

- Use the fire index in cooperation with BLM.
- Coordinate live-fire training exercises when fire weather and indices are low to help prevent the spread of wildfire.
- Avoid ordnance use during periods when weather and fuels conditions are conducive to quick fire starts and spreading.
- Continue to update and implement fire management plans written by USAG Alaska and the BLM AFS. This plans assess current fire hazards and lists recommendations to reduce them.
- Maintain existing firebreaks. In the case of the MPMG Range expansion, the extension of firebreaks may be considered.
- Comply with existing range regulations and restrictions (USAG Alaska Regulation 350-2).
- Follow existing range guidelines to prevent wildfires.
- FWA Small Arms Range - The range is typically burned either every year or every other year to reduce fire hazards.
- Ammo Bunkers - The FWA Ammo Bunker unit has been burned annually by the AFS to eliminate willow re-growth and to encourage the return of native perennial grasses. The burn is a one-day project usually conducted by personnel from the AFS hotshot crews.
- Central Tanana Flats - Three to ten prescribed burns totaling 65,000 acres over the next ten years are proposed to promote moose habitat. A burn plan is being developed.
- Grouse Project - A burn plan has recently been completed to reduce mature aspen stands and to promote regeneration of younger stands, thereby improving grouse habitat in YTA. The plan is expected to begin implementation in the spring of 2009.
- Maintain existing firebreaks on USARAK lands, including on the northern boundary of Stuart Creek Impact Area on YTA and the southern end of Main Post.
- Maintain recurring burn plans for Manchu Range, Husky Drop Zone, and Stuart Creek Impact Area.

3.3.8.1 Fort Richardson

Affected Environment

The north post of FRA is classified for Full and Critical fire management options (fire suppression priorities given to a particular area based on the values at risk) due the high value of resources at risk from fire, in addition to the post's proximity to Anchorage, Eagle River, and Elmendorf AFB. Most of the north post is classified for Critical fire management. The training areas along the Knik Arm are classified for Full fire management. The north post is bounded by Elmendorf AFB, private parcels, railroad lands, and Native Corporation lands.

The south post has areas classified under Critical, Full, and Limited fire management. Most of the south post is under Full fire management because the area is mainly used for military training and small arms ranges. The alpine zones are classified for Limited fire management because of their remote location. Military resources are at risk from wildland fire in the training areas of the south post, including the SACs. Cultural resources staff identified sites in the south post area, but management options related to wildland fire are pending. The south post is bound by private parcels and state lands

Although wildfires are a concern at FRA, they are rarely a significant problem. Numerous fires have been recorded in the Matanuska-Susitna Valley to the north, but no major fires have occurred on FRA since 1950. Severe drought conditions occur about once every 20 years, and, in normal years, there is an average of less than five wildfires. These fires are usually mission-related, small, and easily contained.

The FRA Fire Department provides the initial response for wildfire suppression, which has traditionally been confined to areas behind the SAC. Because of the extensive mortality of white spruce in the area, fire prevention activities were conducted in 1999 and 2000 to reduce fuel loads adjacent to the small arms ranges.

When necessary, BLM reimburses the ADF to suppress wildfires in the southern half of the state, including FRA. The ADF also provides training for wildfire suppression at FRA. USAG FRA and Elmendorf AFB have a mutual aid agreement for fire suppression.

Environmental Consequences

Overall, stationing of approximately 1773 Soldiers in CS and CSS units at FRA would provide a minor contribution to the cumulative wildfire risk in the region. The increase in frequency of range use could reasonably be expected to increase the risk of wildfires on FRA, especially for areas with flammable grasses. Fires on FRA, however, are quickly noticed and extinguished so no significant increase in wildfire risk is anticipated in connection with the proposed action. High-risk areas would be treated to reduce the spread of fire or simply avoided, and training would follow established training protocols. Institutionally, Army doctrine requires units to train as they are routinely expected to perform their real-world mission. The nature of CS and CSS is to provide required support to Army operations so the overall increase in wildfire risk comes as these Soldiers are integrated into training events of their supported units. Vehicles would be expected to primarily remain on established roads, trails and landing zones. As such, their individual contributions to wildfire risk become just another element of combined/collective training events. Individual Soldier training would be conducted on current ranges so other than contributing to the overall frequency of range use, their contribution to wildfire risk on FRA would be minor.

Garrison Construction: (Minor) Any newly constructed buildings would need wildland fire protection and may require increased resources from the USAG FRA forest management and the AFS. These structures would require protection despite the fire management option assigned to adjacent lands. As a result, some management areas may need reclassification. A variety of capital improvement projects are planned or are currently underway on FRA's cantonment areas. These areas typically contain installation support infrastructure. Construction of new facilities at FRA would result in short-term minor impacts to the facility's wildfire risk. Based on the projects' location and availability of firefighting resources in the cantonment area, garrison construction associated with this action poses a minor additional risk for wildfires.

Training Infrastructure Construction: (Minor). The risk of Wildland fire at the small arms range complex, which resides beyond the boundary of the main cantonment area and its resident firefighting resources, is anticipated to be minor. This is due primarily to the consistent presence of construction contractor staff and range control staff throughout the construction phase. If a wildfire were to start as result of construction, it would likely be identified early and quickly extinguished. Due to the proximity of the small arms range complex to the main cantonment area, resident firefighting resources would be able to respond quickly to larger fires.

Live-fire Training: (Minor to Moderate). Though minor, the overall risk of fire starts increases if the frequency and size of live-fire training events increases. Military training consists of specific risks such as pyrotechnics and munitions, support vehicle exhausts, general range maintenance, field operations and other support activities. Regardless of the specific training venue, the risk of fire start is increased (approximately) proportionally based on the level of firing occurring on any given range. Though the number of actual rounds being fired at FRA would increase from current requirements, these units in and of themselves, do not pose more than a minor increase in fire risk to the FRA complex. As discussed earlier, the rate of transition from a fire start to a large, uncontrolled fire involves the atmospheric conditions at the time, available fuel load and condition, and the success of FRA's fire suppression efforts. Though the CS and CSS units are anticipated to cause an increase in the frequency of ranges being used, the additional risk for wildfire is anticipated to be minor to moderate based on USAG FRA's policies and procedures already in place.

Maneuver Training: (Minor to Moderate). Maneuver training generally occurs outside of cantonment areas and its integral firefighting resources. The addition of 1773 Soldiers will increase the frequency of maneuver training at FRA. Individual Soldier activities during these training events (e.g., using incendiary devices, ration heating or any burning) and vehicle exhaust in tall grass are potential ignition sources that could occur during training events. Putting more Soldiers in the field more often increases the likelihood of a fire event but as stated earlier, current procedures have been very successful at preventing wildfires at FRA. Though increased training activity increases the probability of fires, supervision, training and current mitigation measures are in place. As such, the increased risk for wildfires resulting from the proposed action is minor to moderate.

Mitigations

Continue on-going actions to prepare the landscape for potential wildland fires (i.e., prescribed burns and thinning to restore ecosystem functions to fire and to reduce future fire severity).

Continue to implement INRMP and installation wildland fire management plan.

3.3.8.2 Fort Wainwright

Affected Environment

The FWA Fire Department is responsible for fire suppression on the Main Post. The cantonment area is categorized as Critical fire management due to the urban and residential areas adjacent to it.

The Alaska Fire Service is primarily responsible for TFTA. Currently the training area is classified for Limited fire suppression because relatively few resources are at risk from fire and because USAG FWA recognizes fire as a natural process in ecosystem function. The Fire Management Plan for FWA stated that military and cultural resources at risk from wildland fire have been identified and mapped. The TFTA is bounded by allotments, private parcels, state lands, and Native Corporation lands.

The eastern portion of the YTA is under Limited fire management because it is too close to an impact area, few resources are at risk, and USAG FWA recognizes fire as a natural and desirable process for ecosystem function.

The western portion of YTA is assigned Full fire management due to its proximity to developed residential areas, in addition to resources of value on adjacent military lands. The central portion of the training area is listed for Modified fire management, and this area acts as a buffer between the Limited and Full management areas.

Military resources at risk from fire have been identified and mapped. Cultural resources potentially in danger from wildfire have been identified at YTA. Private parcels, state lands, borough lands, and other federally managed lands border YTA.

Fires are frequent in interior Alaska, and they play an important ecological role by making nutrients stored in un-decomposed, accumulated matter available to plants. Approximately 30% of FWA has burned since 1950 (Jorgenson et al. 1999), and a substantial portion of the area has burned more than once. Records of fire occurrences since 1950 indicate that about one percent of FWA has burned annually (Jorgenson et al. 1999). The average interval for fire recurrence on any given area at FWA varies from 100 to 150 years.

Both natural and human-caused fires occur on the installation. From 1980 through 2000, 148 wildfires were reported on FWA. Thirty-one of these fires were attributed to natural causes while 117 were attributed to human causes. Of the 117 fires resulting from human activities, 85 were attributed to military training activities.

Records indicate that 16 fires of 100 acres or more burned on the YTA from 1959-2000. Three of these fires occurred between 1998- 2000. The two largest of these fires happened in 2000. The fires were caused by lightning and affected a total of 4,538 acres.

Environmental Consequences

Stationing 425 Soldiers in CS and CSS units at FWA would provide a very minor contribution to the cumulative wildfire risk in the region. The increase in frequency of range use could be expected to increase the wildfire risk on FWA, especially for areas with flammable grasses.

Fires resulting from training activity, however, are quickly noticed and extinguished so no significant impact to wildfire risk are expected in connection with this proposed action. Institutionally, Army doctrine requires units to train as they are routinely expected to perform their real-world mission. The nature of CS and CSS is to provide required support to Army operations so the overall increase in wildfire risk comes as these Soldiers are integrated into training events of their supported units. Vehicles would be expected to primarily remain on established roads, trails and landing zones. As such, the individual contribution to wildfire risk becomes just another element of combined/collective training events with minor cumulative results stemming from the addition of these Soldiers. Individual Soldier training would be conducted on current ranges so other than contributing to the overall frequency of range use, the contribution to wildfire risk on FWA from this action would be very minor.

Garrison Construction: (Minor). Any newly constructed buildings would need wildland fire protection and may require increased resources from the USAG FWA forest management and the AFS. Construction of new facilities at FWA could result in short-term minor impacts to the facility's wildfire risk. Based on the project's location and availability of firefighting resources in the cantonment area, garrison construction associated with this action possess very minor additional risk for wildfires.

Training Infrastructure Construction: (Minor). There are several range construction and improvement projects planned for FWA in connection with this action. Though range construction normally occurs beyond the boundary of the typical cantonment area and its resident firefighting resources, the increased risk to wildfires resulting from range construction is anticipated to be very minor. The small arms range complex is in close proximity to the main post, allowing firefighting services to respond quickly. In addition, as range expansion projects occur, project supervision and the continual presence of contract workers and military and civilian personnel would likely allow for the early identification and extinguishing of potential fire starts.

Live-fire Training: (Minor to Moderate). Though minor, the overall risk of fire starts increases if the frequency and size of live-fire training events increases. Military training consists of specific risks such as pyrotechnics and munitions, support vehicle exhausts, general range maintenance, field operations and other support activities. Regardless of the specific training venue, the risk of fire start is increased proportionally based on the level of firing occurring on any given range. Though the number of actual rounds being fired at FWA would increase from current requirements, these units in and of themselves, do not pose more than a minor increase in fire risk. As discussed earlier, the rate of transition from a fire start to a large, uncontrolled fire involves the atmospheric conditions at the time, available fuel load and condition, and the success of FWA's fire suppression efforts. Though the CS and CSS units are anticipated to cause an increase in the frequency of ranges being used, the additional risk for wildfire is anticipated to be minor to moderate.

Maneuver Training: (Minor to Moderate). Maneuver training generally occurs outside of cantonment areas and its integral firefighting resources. The addition of 425 Soldiers could be anticipated to cause a minimal increase in the frequency of maneuver training at FWA. Soldier activities during the training events (e.g., incendiary devices, ration heating or any burning) and vehicle exhaust in tall grass are potential ignition sources that could occur during training events. Though increased training activity increases the probability of fires, supervision, training and current mitigation measures are in place. As such, the increased risk for wildfires resulting from the proposed action is minor to moderate.

Mitigations

Continue on-going actions to prepare the landscape for potential wildland fires (i.e., prescribed burns and thinning to restore ecosystem functions to fire and to reduce future fire severity).

Continue to implement INRMP and installation wildland fire management plan.

3.3.8.3 Donnelly Training Area

Affected Environment

Along with the broader Delta Junction area, DTA has a long history of wildfires. Ignition sources for the DTA area, associated with both military training and other nonmilitary actions (lightning and recreational use), will continue to cause fires in DTA, as they have in the past. In general, large fires happen during hot, dry, and windy conditions. Weather patterns in this area occasionally stimulate extreme fire risk and behavior. USAG FWA's use of the Canadian Forest Fire Danger Rating System (CFFDRS) reduces the likelihood of military-caused fires, primarily by restricting certain training activities based upon fire risk.

According to Jorgenson et al. (2001), approximately 59 percent of DTA has burned since 1950, and a considerable portion has burned more than once. Approximately 16 percent of DTA has burned within the past 30 years, and, based on fires recorded on the installation since 1950, 1.2 percent of the area has burned annually.

From 1950 to 2000, 13 fires larger than 100 acres were reported at DTA (USAG Alaska 2002). Of these, 8 were caused by humans and 5 were due to natural causes. Thirty-eight percent of human caused fires larger than 100 acres were due to military training activities. The two most recent large fires occurred in 1998 and 1999. The first was the 54,000-acre Carla Lake fire caused by lightning in 1998, and the second was the 18,700-acre Donnelly Flats fire in 1999 caused by human activities unrelated to military training. The average interval for recurrence of fire for any given area varies from 100 to 150 years (USAG Alaska 2002). Other recent large fires in the outlying training areas include a 1994 fire that burned a large portion (approximately 55%) of the Gerstle River Training Area. The last wildfire in the Black Rapids Training Area is believed to have been in 1953.

Currently, DTA East is designated as a full management option area due to the close proximity of the Delta Junction community and the cantonment area of DTA. This area is subject to high winds and extreme fire behavior. The Fort Greely cantonment area is a critical management option area. The Army also has structures at risk throughout DTA East. These resources have been identified and mapped. DTA East surrounds a portion of private and state land known as the "Key Hole" (USAG Alaska 2002).

Most of DTA West is classified for Limited fire management because few resources are at risk from fire and USAG FWA recognizes that fire is a natural process in ecosystem function (Alaska Wildland Fire Coordinating Group 1998). A private hunting lodge, located along the extreme western boundary of DTA West, is given Full fire suppression status.

Environmental Consequences

The proposed action covered in this environmental assessment does not call for an increase in Soldiers stationed at DTA. There would, however, be an anticipated increase in wildfire risk stemming from the increase in live-fire and maneuver training as units deploy to DTA to train.

Wildfire risk is increased by use of ordnance, vehicle maneuvers, and flammable materials and even a careless cigarette. CS and CSS units would support Combined Arms Live-Fire Exercise (CALFEX) and other combined training events at the DTA. This training would increase the potential for wildfire. Fires resulting from training activities, however, are quickly noticed and extinguished so no significant impact to wildfire risk is expected in connection with this proposed action. Institutionally, Army doctrine requires units to train as they are routinely expected to perform their real-world mission. The nature of CS and CSS is to provide required support to Army operations so the overall increase in wildfire risk comes as these Soldiers are integrated into training events of their supported units. Vehicles would be expected to primarily remain on established roads, trails and landing zones. As such, the individual contribution to wildfire risk becomes just another element of combined/collective training events with minor cumulative results stemming from the addition of these Soldiers. The cumulative effects to wildfire risk on DTA stemming from this action would be minor.

Live-fire Training: (Minor to Moderate). Doctrinally, CS and CSS units would be supporting CALFEX or other combined arms training events at DTA versus training alone as an individual unit. The number of required live-fire user days per year at DTA would not be expected to significantly increase and no new types of weapons are expected to be introduced into the training areas in connection with this action. The risks are further reduced by existing wildland fire mitigation measures and restrictions on particular munitions use when fire danger ratings are elevated risks. As such, the impact to wildland fire management from the proposed action would be minimal.

The overall risk of fire starts increases, although minor, tends to increase as the frequency and size of live-fire training events increases. Military training can consist of specific risks such as pyrotechnics and munitions, support vehicle exhausts, general range maintenance, field operations and other support activities. As discussed earlier, the rate of transition from a fire start to a large, uncontrolled fire involves the atmospheric conditions at the time, available fuel load and condition, and the success of USAG FWA's fire suppression efforts.

Maneuver Training: (Minor to Moderate). The intensity and frequency of maneuver training at DTA should remain at current levels because the number of Soldiers stationed at Ft. Wainwright and Ft. Richardson would be training in support of other units' exercises. In addition, no new maneuver areas would be required and maneuver training would be conducted in the footprint of existing ranges and previously approved facilities at DTA.

Mitigations

Reclassification of fire management options may be required to ensure fire management meets anticipated changes in wildfire risk. Prescribed burns of grasses and/or shrubs would continue to ensure reduced levels of fuel loading in range areas. In drought years fire management practices would be adjusted to account for the conditions. USAG FWA policy and procedures minimize the potential for fire events in the DTA and surrounding region.

Areas most likely to be affected by wildland fire are adjacent to those areas used for training, particularly live-fire training. Since wildland fire spreads unpredictably, the area of influence is difficult to determine. To address this issue, mitigation measures should prepare the landscape for impending wildland fires. Patches of thinned trees and controlled burns in high-risk areas may lessen wildland fire intensity and spread. Recent fuels management projects on DTA include the removal of dead spruce, creation of fuel breaks, and prescribed burns. These projects reduce fuels, removing highly flammable spruce, and promote regeneration of less

flammable hardwoods. Additionally, strict adherence to the Wildland Fire control measures detailed in the BAX/CACTF EIS (USAG Alaska, 2007) will continue to reduce the risk of wildland fires.

In coordination with AFS, USAG FWA is currently conducting a landscape-scale fire mitigation project as part of the USAG FWA fuels management plan. Multiple management techniques are being used to lessen the probability of fires moving off military lands onto private property or fires starting on private property and moving onto military lands.

No other new mitigation measures are proposed as part of this action. However, on-going mitigation measures discussed above will continue to be funded and implemented.

3.3.9 Public Access and Recreation & Human Health and Safety

U.S. Army Alaska's primary mission is to maintain and enhance the combat readiness of its soldiers. USARAK Garrisons also recognize the responsibility to allow public access to military lands in compliance with the Sikes Act, which requires public access to military installations to the extent that such use is consistent with the military mission and the protection of fish and wildlife resources. Public access is subject to requirements deemed necessary to ensure safety and military security.

Military lands in Alaska provide desirable areas for recreational activities. They contain many stocked lakes and significant game populations in relatively close proximity to the more highly populated areas in Alaska. These lands include the immediate post lands and adjoining lands under military control for training. Recreational uses include hunting, fishing, trapping, off-road recreational vehicle use, hiking, boating, picnicking, berry picking, bird-watching, skiing, and dog sledding.

Wildlife and fisheries management on USARAK lands has traditionally supported recreational and subsistence use, maintenance of populations and habitats, and preservation of biological diversity. Wildlife and fish populations and their habitats are managed cooperatively by USAG FWA and USAG FRA, the ADF&G, and the USFWS. The Garrison's INRMP (USAG Alaska 2007, chapter 3, appendix E) discusses specific actions to manage and improve public access and recreation on USARAK lands. These include implementation of an outdoor recreation management plan to maintain and enhance recreational opportunities, outdoor recreation monitoring to determine impacts of recreation on ecosystems, and specific measures to manage outdoor recreation in light of increased recreational use. Updating recreational vehicle use policy is one example of such measures.

USARAK Garrisons also implemented the USARTRAK system to facilitate access to military lands by allowing recreational users to use their Recreation Access Permit to remotely check in to installations and training areas. The public must obtain permission to access military lands through the use of this system. When individuals check in and indicate where they will be going, the latest information on military range closures and construction can be obtained. This information is also provided through weekly bulletins and radio announcements. Recreational access is generally closed during range operations or other military activities that are incompatible with outdoor recreation.

FRA, FWA, and DTA have four primary categories of recreation use areas: Open Use, Modified Use, Limited Use, and Off-Limits areas. All recreational categories are subject to periodic change or restrictions. The categories are defined as follows:

- *Open Use* – areas open year-round to all forms of recreation, unless closed by the Range Control office. Ground and Off-Road Recreational Vehicle (ORRV) use is permissible here.
- *Modified Use* – areas available to all non-motorized forms of recreation year-round but limited to areas where frozen conditions exist (more than six inches of ice or snow cover present). Modified Use restrictions are largely applicable to USARAK Garrison wetlands.
- *Limited Use* – areas open to all non-motorized forms of recreation year-round. No ORRV use is permitted in these areas at any time. Limited Use areas relate primarily to locations with high average use levels, such as in or near cantonment areas.
- *Closed* – areas closed to all forms of recreation at all times. This is due primarily to either conflicts with military use and the primary military mission, or to human health and safety concerns.

Human health and safety includes those facets of military activities and materials that potentially pose a risk to the health, safety, and well-being of the public, military personnel, civilian employees and dependents. Aspects of military activities that can present risk to human health and safety include live-fire training, tactical vehicle convoys, vehicular accidents, occupational safety hazards, unexploded ordnance, hazardous materials and hazardous wastes. Typical hazardous materials in routine use on USARAK Garrisons include petroleum products (fuel and oil), batteries, light ballasts, mercury-containing light bulbs, paint and paint thinners, industrial solvents and degreasers, and pesticides. Older buildings may also contain asbestos, lead-based paint, and Polychlorinated Biphenyls (PCBs).

Additional risks can be presented by local wildlife that reside in and around military installations and can potentially come into routine contact with military and civilian personnel. Of particular concern are bears, moose, wolves, and other large mammals that can potentially harm, intentionally or unintentionally, humans, pets, and property.

Additional information regarding public access and recreation on USARAK lands, the USARTRAK system, and human health and safety can be found in the *Transformation of U.S. Army Alaska Final EIS* (CEMML 2004).

3.3.9.1 Fort Richardson

Affected Environment

At FRA, moose is the most favored game species and salmon the number one fish species. Other outdoor activities include hiking, camping, small game hunting, berry picking, woodcutting, and dog sledding. Key recreational facilities located within the cantonment area include Otter Lake, Cottonwood Park, and the FRA Golf Course. Road access onto FRA is possible primarily from the Glenn Highway, the main gate, or along Arctic Valley Road. The post is also accessible via Richardson Drive from Elmendorf AFB. Additionally, USAG FRA allows Eagle River rafting traffic to enter some FRA lands. Paved and unimproved roads cover much of the northern and central portions of the post. Two ORRV access trails exist on post and connect green spaces near the cantonment area to more remote locations. Trails also connect the post to Chugach State Park and the Municipality of Anchorage's Far North Bicentennial Park, which share FRA's southern boundary.

FRA is located within the ADF&G's GMU 14 and Game Management Subunit 14C. A detailed map of Game Management Subunit 14C and the wildlife species available for hunting (and their associated seasons and regulated hunting limits) is found in the ADF&G's 2007-2008 Alaska Hunting Regulations, No. 48 (Regulated by Title 5, Alaska Administrative Code and Title 16 of Alaska Statutes) (www.wildlife.alaska.gov, n.d.).

Fish stocking is a common activity at four lakes on FRA and is intended to promote the recreational use of Army lands while improving the health of rainbow trout (*Oncorhynchus mykiss*), chinook salmon (*Onchorhynchus tshawytscha)*, and arctic char (*Salvelinus alpinus*) populations. Waters within the installation also support wild populations of the silver salmon (*Oncorhynchus kisutch*), chum salmon, red salmon (*Oncorhynshus nerka*), pink salmon (*Oncorhynchus gorbuscha*), the dolly varden (*Salvelinus malma*), and the three-spine stickleback (*Gasterosteus aculeatus*).

Human health and safety is an important concern at FRA given the large military, civilian, and family population on FRA. In addition to the typical issues one might find on a busy military installation, FRA has a large number of wild animals that live on or near the installation and that come in routine contact with humans. Of particular concern are bears, wolves, and moose. Bears are naturally curious and have an excellent sense of smell, which means they are attracted to food sources including garbage bins and dumpsters. There have been numerous recorded incidents involving bears opening and even climbing into garbage dumpsters on firing ranges and within the family housing areas. Wolf packs can be very brazen about hunting within the cantonment area, especially during years when their traditional food supply is reduced, and have been responsible for a number of family dog deaths in recent years.

Environmental Consequences

Garrison Construction: (Minor). Construction projects considered as part of this proposed action would have a minor impact on the recreational use of the FRA cantonment area. Any impacts of actual construction (dust, noise, etc.) would be temporary in nature. The increase in the number of Soldiers and family members would result in an increase in usage of recreational resources for organized sports, walking, hiking, riding, use of roads/ trails, and fishing.

The increased human population could also potentially result in an increased incidence of animal contact. More Soldiers and families would likely result in more trash generation, which would attract more bears and other species. New Soldiers and families not familiar with Alaska and its native animals, and not aware of the impacts their activities and behavior can have on animal populations, would require increased effort to educate and manage. The increased use of trails for riding and hiking, especially those farther removed from the main cantonment area, could expose individuals to wolves, moose, and other potentially dangerous animals.

Training Infrastructure Construction: (No Impact). The SAC is off-limits to recreation purposes. Current management practices and procedures would continue to be followed.

Live-fire Training: (Moderate). The SAC is off-limits to recreation purposes. The expansion and increased usage of live-fire ranges, given the prevalence of animals on the ranges, could potentially result in an increased incidence of cease-fires during range firing activities, which would negatively impact the ability to train properly. Likewise, the increased usage of fixed position and area live-fire ranges could potentially result in increased restriction of training areas and the airspace for recreational purpose. There are trails throughout the training areas, which are routinely used by dog mushers, hikers, bikers, and skiers. There have been numerous

incidents of members of the public ignoring warning signs and venturing into training areas where live-fire activities are being conducted. The increased usage of these ranges, coupled with an increase in the Solider and family population, presents a challenge that would be addressed under mitigations

Maneuver Training: (Moderate). As with live-fire training, the increased use of training lands for maneuver training would have a moderate impact on the ability to use utilize FRA lands for recreational purposes. Likewise, increased training could potentially result in the increased incidence of incompatible use of lands, specifically hikers and bikers wandering into training areas where maneuver activities are being conducted. More Soldiers would potentially result in more restrictions on Moose hunt (1st weekend in Sept – Nov 15, 15 Dec – Jan 15)

Mitigations

The following mitigations are currently implemented or will be implemented:

- Use of Bear-proof containers and bear resistant dumpsters. Such containers would be placed in all normal trash receptacle locations in lieu of traditional garbage dumpsters.
- Increased use of signage and other public notification measures to increase public awareness of dangers of military training.
- Increased enforcement of recreational use requirements (e.g. USATRACK policies)
- Continue use of advanced public notification of military training activities likely to restrict the use of Alaska Army lands for recreational, subsistence, and other uses.
- The ITAM program will continue to manage the impacts associated with live-fire and maneuver training on all ranges and training areas and restore training areas, not just to support realistic military training, but also to prevent degradation of these important multi-use resources.

3.3.9.2 Fort Wainwright

Affected Environment

Hunting and fishing are the main recreational activities occurring on USAG FWA lands. Data show that 21 percent of the interior Alaska moose harvest occurs on military lands, while 2.3 percent of the Interior Caribou harvest and 2.1 percent of the sheep harvest are also on military-controlled lands (ADFG 2001). The most popular fish species are salmon and trout. Other recreational activities include hiking, camping, small game hunting, berry picking, and dog sledding. Access is allowed on many parts of FWA Main Post. Roads and trails are both plentiful, and the open spaces remaining in the FWA cantonment area are important contributors to recreation opportunities for post inhabitants. The core cantonment area consists of landscaped yards, office buildings, ball fields and open fields. Hunting and ORRV use is not permitted in the cantonment area.

Access to TFTA is more difficult than to other parts of FWA. TFTA is bordered by the Tanana and Wood rivers and there are no bridges into the training area. Ground vehicles can access TFTA in winter on constructed ice bridges. Summer access is by boat or plane only. Most of the training area is wetlands and largely categorized as a Modified Use area. YTA is readily accessible from the ground. Access is primarily available via Manchu Road through Eielson AFB. Additional access is possible via Johnson Road, which connects to the Richardson Highway.

Environmental Consequences

Garrison Construction: (Minor). Construction projects considered as part of this proposed action would have a minor impact on the recreational use of the FWA cantonment area. Any impacts of actual construction (dust, noise, etc.) would be temporary in nature. The increase in the number of Soldiers and family members would result in a proportional increase in usage of recreational resources for organized sports, walking, hiking, riding, use of roads/ trails, and fishing.

The increased human population could also potentially result in an increase incidence of animal contact. More Soldiers and families would likely result in more trash generation, which would attract more animals. New Soldiers and families not familiar with Alaska and its native animals, and not aware of the impacts their activities and behavior can have on animal populations, would require increased effort to educate and manage. The increased use of trails for riding and hiking, especially those farther removed from the main cantonment area, could expose individuals to other potentially dangerous animals.

Training Infrastructure Construction: (Minor). The SAC is off-limits to recreation purposes. Current management practices and procedures would continue to be followed.

Live-fire Training: (Minor) The SAC is off-limits for recreational purposes. The expansion and increased usage of live-fire ranges, given the prevalence of animals on the ranges, could potentially result in an increased incidence of cease-fires during range firing activities, which would negatively impact the ability to train properly. Likewise, the increased usage of fixed position and area live-fire ranges could potentially result in increased restriction of training areas and the airspace for recreational purpose. There are trails throughout the training areas, which are routinely used by hunters, fisherman, dog mushers, hikers, bikers, and skiers. There have been numerous incidents of members of the public ignoring warning signs and venturing into training areas where live-fire activities are being conducted. The increased usage of these ranges for military training activities, coupled with an increase in the Soldier and Family population, presents a challenge that would be addressed under mitigations

Maneuver Training: (Moderate). As with live-fire training, the increased use of training lands for maneuver training would have a moderate impact on the ability to use utilize FWA lands for recreational purposes. Likewise, increased training could potentially result in the increased incidence of incompatible use of lands, specifically hikers and bikers wandering into training areas where maneuver activities are being conducted. More Soldiers would potentially result in more restrictions on Moose hunt

Mitigations

The Army will continue to educate and inform those who wish to utilize its lands for recreational purposes, not only to allow for people to enjoy the land and the wildlife it supports, but also to ensure that they do so in a safe and environmentally responsible manner that is protective of human health and safety. The following mitigations are currently implemented or will be implemented:

- Increased use of signage and other public notification measures to increase public awareness of dangers of military training.
- Increased enforcement of recreational use requirements (e.g. USARTRAK policies)
- Continue use of advanced public notification of military training activities likely to restrict the use of Alaska Army lands for recreational, subsistence, and other uses.

- The ITAM program will continue to manage the impacts associated with live-fire and maneuver training on all ranges and training areas and restore training areas, not just to support realistic military training, but also to prevent degradation of these important multi-use resources.

3.3.9.3 Donnelly Training Area

Affected Environment

Public access and recreation at DTA is discussed in more detail in Section 3.9 of the DTA East Mobility and Maneuver Enhancement EA (2008). No specific public access and recreation activities are unique to any sites within DTA; therefore, Section 3.3.9.3 serves as a summary of public access and recreation activities, which could occur at DTA.

Due to its acreage, condition, and proximity to population centers, DTA is a popular recreational destination for Alaska residents. Recreational opportunities at DTA are similar to those found on FWA. In addition to ground access and roads, much of DTA is available to ORRVs and aerial access. ORRV and winter trails exist across both the eastern and western training areas. The 33-Mile Loop Road is one of the more popular trail systems on DTA East. Additional access roads, including Meadows Road, Dome Road, Old Richardson Highway, and Fleet Street, connect directly to either Richardson or Alaska highway. Additional access was historically available through the Fort Greely cantonment area (now managed by SMDC), but is no longer available for recreation or general access.

Hunting is a large part of the recreational activity that occurs on DTA, Moose being the most important species. Moose are managed intensively by the State of Alaska, which has established goals for managing the population. Caribou hunting does not occur on army lands.

DTA West is accessible in winter when the Delta River is frozen over, or by air or boat in summer. DTA East is primarily managed as Open Use. The exception is Jarvis Creek and some isolated wetland areas that are considered Limited Use areas. As portions of DTA West are primarily designated as impact area, most of the central training area is Off-Limits. Modified and Open Use areas exist to the north and south, along the northern boundary of the training area and the foothills of the Alaska Range.

USAG FWA also provides wildlife viewing opportunities for Soldiers, civilians, Alaska residents, and visitors. Facilities and programs include wildlife viewing platforms, nature trails, interpretive signs, public presentations, and cooperative publications with Federal, State, and local agencies. DTA East in particular is readily accessible to the public, containing over 150 miles of existing trails, some of which are overgrown and not drivable.

Meadows Road, 33-Mile Loop Road and windy Ridge Road are the primary access arteries to training areas within DTA East. All three of these roads are popular recreation trails. 33-mile loop Road intersects the Alaska Highway just North of Jarvis Creek and heads east and south and then loops back to the Richardson highway crossing Jarvis Creek at 12 Mile Crossing. This road is severely degraded in some locations and may be impassable when wet. 33-Mile Loop provides access to trail systems in the Granite Mountains to the south of military lands. Meadows Road intersects the Richardson Highway and Heads West and South to intersect with Windy Ridge Road, which heads East to intersect with the Old Richardson Highway. Between Meadows Road and Windy ridge there are 11 lakes stocked by the Alaska Department of Fish and Game and numerous trails that are used for training as well as recreational activities.

Numerous other trails run north south and east west intersecting with these major trail systems. Much of DTA is accessible to ORRV and aerial access in the summer. Winter trails exist across both the eastern and western parts of the training area.

Environmental Consequences

Live-fire Training: (Minor). Overall impacts to public access and recreation and human health and safety would be minor due to the small increase in live-fire training requirements at DTA. As previously discussed, Soldiers will conduct individual weapons qualification training at their home station small arms range complexes. Live-fire training at DTA is primarily for company sized elements and larger and is generally driven by the combat forces. The CS and CSS units being considered as part of this GTA action serve in a supporting role to the combat units and are not likely to drive any new training requirements necessitating a large increase in the use of live-fire ranges at DTA; therefore there would not be considerable additional restrictions on public access.

Maneuver Training: (Minor). As with live-fire training, the increased number of Soldiers stationed at FRA and FWA would not result in an increased frequency of maneuver training events. They could potentially be larger with the additional soldiers but the overall impacts would be negligible. As a result, public access and recreation, as well as human health and safety is not likely to be impacted to a significant degree.

Mitigations

In accordance with the Sikes Act, DTA works to ensure that its lands are available for public use, as much as possible, without affecting its primary military mission. The Army will continue to educate and inform those who wish to utilize its lands for recreational purposes, not only to allow for people to enjoy the land and the wildlife it supports, but also to ensure that they do so in a safe and environmentally responsible manner that is protective of human health and safety. The following mitigations are currently implemented or will be implemented:

- Increased use of signage and other public notification measures to increase public awareness of dangers of military training.
- Increased enforcement of recreational use requirements (e.g. USARTRAK policies)
- Continue use of advanced public notification of military training activities likely to restrict the use of Alaska Army lands for recreational, subsistence, and other uses.
- The ITAM program will continue to manage the impacts associated with live-fire and maneuver training on all ranges and training areas and restore training areas, not just to support realistic military training, but also to prevent degradation of these important multi-use resources.

3.3.10 Subsistence Activities

3.3.10.1 Fort Richardson

Section 810 of the Alaska National Interest Lands Conservation Act [16 USC 3120(a)] directs federal agencies to consider the potential impact a proposed action may have on the subsistence activities of rural Alaskans. FRA is located in urban areas where subsistence activities do not occur. While FRA lands have also experienced some historical use by their respective areas' rural populations, these lands are not included among the federal lands covered by special subsistence permits for the harvest of moose or any other species. Given the minimal proposed increase in training activities, the abundance of alternative lands on which

rural Alaskans can practice subsistence activities, and the mitigation methods described below in 3.3.10.2, the impact of the Proposed Action on the subsistence activities at FRA is anticipated to be minor.

3.3.10.2 Fort Wainwright

Affected Environment

FWA Main Post is located in an urban area where subsistence activities do not occur. FWA training areas fall within the traditional lands of Tanana and Tanacross Athabaskans. Traditional settlement patterns focused on a widely mobile and seasonal lifestyle, with the fall caribou and moose hunt playing a pivotal role in subsistence preparations for the winter while summer activities were focused on fish camps, berry/root collecting and sheep hunting (McKennan 1981). Fish and moose continue to play a primary role in Interior communities near FWA training area lands, including Gerstle River and Black Rapids training areas (Martin 1983, Marcotte 1991, personal communication with tribal representatives from the Interior 2000 and 2001). Plant gathering continues to be a focus in the spring, summer and fall, with residents from Dot Lake, for example, traveling as far as Donnelly Dome, Delta Junction and Eielson AFB to collect berries, roots, and plant resources (Martin 1983).

Due to the size and relatively remote location of FWA training areas, natural resources and wildlife populations are fairly well preserved. Customary and traditional use has been determined for the following species: brown bear, moose, beaver, coyote, red fox, hare, lynx, marten, mink and weasel, muskrat, otter, wolf, wolverine, grouse, and ptarmigan. Subsistence permits can be obtained for the take of these species.

While no true subsistence hunting currently occurs on FWA, garrison policy supports and accommodates its practice. Although FWA lies within traditional lands, as described above, it is surrounded by millions of acres of public and private land. These lands provide substantial alternative opportunities for subsistence hunting on non-DoD lands by both Native and non-Alaska Native people and communities who are residents of Alaska.

Environmental Consequences

Garrison Construction: (No Impact). Hunting is prohibited in the cantonment area; therefore no impacts are anticipated to occur to subsistence practices. However, some hunting is allowed on the local training areas surrounding the cantonment area.

Training Infrastructure Construction: (No Impact). Public access is prohibited in the SAC; therefore no impacts are anticipated to occur to subsistence practices.

Live-fire Training: (Minor). Overall, the anticipated impact to the continued support, and accommodation of subsistence hunting as a result of the stationing of additional soldiers at FWA is anticipated to be minor. The minimal increase in individual weapons qualification training required for the marginal increased number of troops at FWA will primarily take place within the existing small arms range complex, where hunting and other forms of subsistence use are already prohibited. The anticipated small increase in live-fire training exercises at TFTA and YTA could potentially result in a minor increase in access restrictions to other training areas. Current Garrison policy supporting and accommodating subsistence hunting will not be affected.

Maneuver Training: (Minor). The impact to the availability and continued support of subsistence hunting from the increase in maneuver training resulting from this stationing action is anticipated to be minor. The MP and Engineer units that make up this stationing action are likely to conduct a substantial portion of their maneuver training at FWA and its immediate training areas. This could potentially result in a moderately increased incidence of access restriction to key maneuver training areas that also support hunting and recreational activities including subsistence hunting. As with live-fire training, the increased use of FWA lands for maneuver training could potentially degrade habitat for species important for subsistence.

Section 810 of the Alaska National Interest Lands Conservation Act [16 U.S.C. 3120(a)] directs federal agencies to consider the potential impact a proposed action may have on the subsistence activities of rural Alaskans. Discussion of how the Proposed Action would impact subsistence activities on FWA is discussed above. Like the main post of FWA, FRA is located in urban areas where subsistence activities do not occur. While FRA and DTA lands have also experienced some historical use by their respective areas' rural populations, these lands are not included among the federal lands covered by special subsistence permits for the harvest of moose or any other species. Given the minimal proposed increase in training activities, the abundance of alternative lands on which rural Alaskans can practice subsistence activities, and the mitigation methods described below, the impact of the Proposed Action on the subsistence activities of rural Alaskans will be no more than minor.

Mitigations

Public notification of military training activities likely to restrict the use of FWA lands for recreational and other uses, to include subsistence hunting, will continue to be an important tool available to the garrison. The ITAM program will continue to manage the impacts associated with live-fire and maneuver training on each installation's ranges and training areas and restore training areas, not just to support realistic military training, but also to prevent degradation of these important multi-use resources.

3.3.10.3 Donnelly Training Area

Section 810 of the Alaska National Interest Lands Conservation Act [16 USC 3120(a)] directs federal agencies to consider the potential impact a proposed action may have on the subsistence activities of rural Alaskans. While DTA lands have experienced some historical use by their respective areas' rural populations, these lands are not included among the federal lands covered by special subsistence permits for the harvest of moose or any other species. Given the minimal proposed increase in training activities, the abundance of alternative lands on which rural Alaskans can practice subsistence activities, and the mitigation methods described above in 3.3.10.2, the impact of the Proposed Action on the subsistence activities at DTA is anticipated to be minor.

3.3.11 Socioeconomic Analysis

3.3.11.1 Fort Richardson

Affected Environment

FRA is located approximately 9 miles to the northeast of the City of Anchorage. The ROI is considered the Anchorage region which also includes Elmendorf AFB. The Matanuska-Susitna Borough and some communities associated with the Kenai Peninsula Borough are also located

near FRA. According to the U.S. Census Bureau's 2007 Population Estimates Program data, Anchorage has an estimated population of 279,671, which is approximately 41 percent of the population of the State of Alaska. The Cook Inlet Region, Inc serves as the regional Native Corporation for this area that is subject to the Alaska Native Claims Settlement Act. The Chugach Alaska Corporation and Ahtna, Inc also have peripheral interests in the region. The Transformation of U.S. Army Alaska EIS (USAG Alaska, 2004) provides more information on the villages and corporations within these regions. According to 2007 estimates by the Alaska Department of Labor and Workforce Development, the estimated Anchorage population in the workforce is 148.020, and has average monthly wages of $3,864. The Alaska Department of Labor and Workforce Development's 2005 American Community Survey Housing Characteristics Profile states that there are approximately 108,787 housing units located in the municipality of Anchorage. Overall, it is anticipated that Anchorage will continue to grow and absorb new families.

In 2007, FRA and Elmendorf AFB developed a Joint Housing Market Analysis to assess the private sector housing market's potential to accommodate military Families through transition to privatization and for the military to achieve the minimum number of authorized housing units from 2007 to 2012. During this transition period, both FRA and Elmendorf AFB are projecting growth in mission and personnel. The study reviewed housing requirements for both Soldiers with Families and unaccompanied/ bachelor Soldiers. The study concluded that based on current housing inventories there was an overall surplus of Family housing units (when combining the numbers for both installations) to accommodate known growth through 2012[4]. When reviewing the housing units for unaccompanied Soldiers, the study identified a total deficit of 798 units. Although the rental supply of housing units is expected to increase dramatically over the next five years at an average annual growth rate of 0.6 percent, the growth covered by this market analysis may not include potential growth associated with the proposed action.

Currently, there are seven Family Housing neighborhoods consisting of 1,435 units and 273 acres. Current projects located around Kenai Avenue are expected to add more than 1,200 additional housing units by 2010. These are adjacent to hills and forest to the south and east (respectively), which work as a barrier against most noise and pollution generated from use of Glenn Highway. The installation has begun a revitalization program for a few of these neighborhoods. It should be noted that revitalization and reconstruction efforts have been initiated for much of the barracks and housing (for enlisted unaccompanied personnel).

The state-owned Anchorage International Airport is the largest airport in Alaska and is also the largest air cargo handler and transfer site in the United States. Additionally, the Port of Anchorage handles approximately 85 percent of the general cargo for the regions serviced by the Alaska Railroad. Healthcare services are offered by numerous providers in the region. Military healthcare facilities include the U.S. Army medical clinic at FRA, the Air National Guard Medical Squadron, and the 3rd Medical Group at Elmendorf AFB. Schools in Anchorage fall within the Anchorage School District. The student-to-teacher ration is much lower than the national average and expenditures for students is much higher than the national average, largely because the local contribution to the school district is approximately 30 percent of the operating budget (the contributions are considerably less in rural areas).

[4] Elmendorf AFB had a surplus of approximately 875 housing units, Fort Richardson showed a deficit of 615 units; equating to a total available surplus of 260 housing units.

Regional Economic Activity

The table below shows the per-capita income in Anchorage is substantially above the statewide average. The median household income is also above the national average, and the poverty level is below the national average. Per-capita income reflect a downward bias for both Anchorage and Fairbanks because almost all federal and military personnel receive a federal "Cost of Living Allowance" of approximately 25% of gross wages that are excluded from income amounts. Further, military provided housing is not considered income.

Table 3.3.11.1-1. Anchorage Regional Income and Poverty Statistics for 2006

Per Capita Income	31,072
Median Household Income	63,656
Median HUD Income	77,700[1]
Percent of Population Below Poverty Level	9.6%

Source: U.S. Census Bureau. 2006. 2006 American Community Survey - Anchorage Municipality. Date visited: August 18, 2008. *http://factfinder.census.gov.*
[1] Source: Fannie Mae. 2008. HUD Area Median Income Search. Date visited: August 18, 2008. *https://www.efanniemae.com*.

The following table lists average monthly employment by standard industrial classification in Anchorage. Uniformed military is not included in the data provided by the Alaska Department of Labor and Workforce Development and has been added to the bottom of the table for comparison. The military is excluded from labor statistics because it does not participate in the unemployment compensation program. According to the DofD - Statistical Information Analysis Division's 2006 report, Distribution of Personnel by State and Selected Locations (M02); DoD Military and Civilian Personnel by State, uniformed military at FRA and Elmendorf AFB add approximately 11,764 employees and comprise almost 29% of the total government workforce. This raises the total industry employment up to approximately 159,784, with government contributing over 41,067 of that total, or about 26%.

Table 3.3.11.1-2. Anchorage Region Average Monthly Employment and Earnings Statistics for 2007

Industrial Classification	Average Monthly Employment	Average Monthly Earnings ($)
TOTAL		
Total All Industries	148,020	3,864
Private Ownership	118,717	3,733
Total Government (excludes uniformed military)	29,303	4,393
By Industry		
Natural Resources and Mining	2,633	13,132
Construction	9,252	5,639
Manufacturing	1,930	3,368
Trade, Transportation, and Utilities	33,451	3,459
Information	4,316	4,578
Finance, Insurance and Real Estate	9,206	4,193
Professional & Business Services	16,936	4,270
Educational & Health Services	19,510	3,305

Leisure & Hospitality	15,685	1,585
Other Services	5,685	2,440
Unclassified Establishments	358	1,600
Federal Government	9,307	5,737
State Government	10,034	3,778
Local Government	9,963	3,757
Uniformed Military	**11,764[1]**	**3,100[2]**

Source: Alaska Department of Labor and Workforce Development. 2007 Quarterly Census of Employment & Wages (QCEW). Date Visited: August 18, 2008. *http://almis.labor.state.ak.us/*
Source: [1]Department of Defense - Statistical Information Analysis Division. 2006. Distribution of Personnel by State and Selected Locations (M02); DoD Military and Civilian Personnel by State - September 30, 2006. Date visited: August 19, 2008. http://siadapp.dmdc.osd.mil/personnel/M02/fy06/06top.htm. [2]Salary information based on a SBCT scenario. Detailed information can be found in the PEIS (USAEC, 2007).

The table below provides employment and economic data on FRA. The data suggest that FRA has a significant impact on the region's economic activity in terms of employment and total expenditures.

Table 3.3.11.1-3. Socioeconomic Impacts of Fort Richardson for Fiscal Year 2006

Uniformed Personnel	5,391
Non-Uniformed Personnel	1,125
Annual Total Payroll	379,826
Non-Personnel Expenditure	167,442[1]

Source: Department of Defense Atlas/Data Abstract for the United States and Selected Areas (data as of September 30, 2006). Date visited: August 18, 2008.
http://siadapp.dmdc.osd.mil/personnel/L03/fy06/atlas_2006.pdf.
[1] Non-Personnel Expenditure figure is the total of Contracts and Grants (Payroll Expenditures not included).

Environmental Consequences

The addition of approximately 1,800 Soldiers and their Families would likely have a beneficial effect to the local economy; however, the 2007 Joint Housing Market Analysis conducted by FRA and Elmendorf AFB concluded that there may be shortfalls in currently available housing units to accommodate new growth. There may be some flexibility in the City of Anchorage and local communities to accommodate a limited amount of growth. There are potentially more than 270 buildable lots within the Anchorage Metropolitan area. Additional factors that would contribute to an overall shortfall in available housing include growth in the local economy and growth at Elmendorf AFB. The Air Force currently has plans to build additional low density housing on land leased from the Army, to include the Grady Road project, which would provide more direct access to key base facilities such as the Hospital and the PX.

There would also be an expected increase in school-aged children. As indicated above the City of Anchorage has a lower student-to-teacher ratio than the national average. Historically, the ratio of school-aged children per military service member has been roughly 0.5 (USAG Alaska, 2004). The addition of 1773 Soldiers would therefore potentially add approximately 850 school-aged children to the school system, spread out from grades K-12. The increase in students would also be spread out over the next five years as the various GTA units arrive on station with Soldiers and their Families. In recent years, about 90 percent of military students have attended on-post schools. Stationing of additional personnel is expected to impact less than one percent of current enrollments off-post. Federal Impact Aid would increase according to enrollment of eligible students, to offset the lack of local property tax revenue from students living on post.

With all factors considered, including normal school district planning processes, the local school system be able accommodate this relatively minor level of growth. If the preferred alternative is implemented, the Army would determine a more accurate number of school-aged children eligible to enter the local school system for planning purposes.

Additional housing currently being constructed as well as planned future projects will serve to address a substantial portion of demand anticipated to be placed on local housing resources. The unaccompanied Soldier barracks and the Child Development Center that would be constructed as part of the preferred alternative will also serve to alleviate additional demand for housing and other services from the surrounding community.

Garrison Construction: (Minor to Moderate). Construction of new facilities at FRA may have a beneficial short-term effect to the local commercial construction contractor market. The requirement for new facilities equates to MILCON funding being spent on commercial services which could in-turn improve employment outside the installation boundaries. Barracks constructed as part of this action would reduce the demand on the local housing market associated with the increase in soldiers. Additionally, the Child Care Center that would be constructed would likewise reduce the demand for off-post services.

Training Infrastructure Construction: (Minor). Short-term beneficial effects are expected. Construction of ranges not conducted by engineer units as part of troop construction projects would have a temporary beneficial effect from an increase in military spending on commercial goods and construction services; therefore resulting in a positive influence to local and regional employment and income.

Live-fire Training: (No Impact)

Maneuver Training: (No Impact)

Mitigations

No foreseeable mitigation measures will be necessary to supplement the projects and activities included in the Proposed Action.

3.3.11.2 Fort Wainwright

Affected Environment

FWA is located within the FNSB, which according to the U.S. Census Bureau 2007 population estimate has a total population of 97,484. The FNSB region includes the municipalities of Fairbanks and North Pole. Doyon, Ltd. serves as the regional Native Corporation for the area that is subject to the Alaska Native Claims Settlement Act. A list of the village corporations in that area can be found in the Transformation of the U.S. Army Alaska Final EIS (CEMML 2004). According to the Alaska Department of Labor and Workforce Development, the average labor force is estimated at 45,160 with a projected median household income of $56,560. The unemployment rate as of 2005 for the FNSB was 6.0 percent, which is 1.3 percent lower than the state average and 0.5 percent higher than the national average.

In 2005, the Army commissioned a Housing Market Analysis (HMA) of assets on FWA to assess the installation's ability to accommodate Soldiers (both with Families and unaccompanied) while meeting DoD's standards for affordability, location, quality, and bedroom requirements. The

study also reviewed the ability of housing supply in the private sector to absorb growth outside the installation. At the time, the study concluded that based on housing inventories there was an overall shortfall of housing units (by approximately 658 units)[14]. Conversely, the City of Fairbanks acknowledged that the HMA did not accurately portray housing construction because it relied on building permits required in the City of Fairbanks and North Pole, and did not take into account that building permits are not required in the majority of the FNSB. The U.S. Census Bureau recently documented that the FNSB has 38,598 housing units, instead of 34,046 listed in the HMA and an average of 780 new units per year since 2000 were constructed instead of the 331 average reported in the HMA.

Fairbanks also serves as the major transportation hub for interior Alaska and for oil operations on the North Slope of Alaska. Primary passenger and cargo air travel service is offered by the Fairbanks International Airport Facility; and the Alaska Highway and Richardson Highway join to connect central Alaska with Anchorage and the Continental United States. There are no roads leading west from Fairbanks. Heath care services are provided by two hospitals and several clinics, and from Bassett Army Community Hospital on FWA.

The schools in and around Fairbanks have a lower student-to-teacher ration and a higher expenditure per pupil than the national average; and have a higher proportion of Native Alaskan students than both the state and national average. Funding for the school districts is largely provided by the State of Alaska and from local contributions (totaling ~30 percent of the operating budget in the municipal areas).

More information on the potential socioeconomic impacts of this stationing action can be found in the *SPEIS for Army Growth and Force Structure Realignment* (US Army, 2008).

Regional Economic Activity

The table below shows that the per-capita income in Fairbanks is slightly below the statewide average. The median household income and poverty level are also slightly below the national average. Per-capita income reflect a downward bias for both Anchorage and Fairbanks because almost all federal and military personnel receive a federal “Cost of Living Allowance” of approximately 25 percent of gross wages that are excluded from income amounts. Further, military provided housing is not considered income.

Table 3.3.11.2-1. Fairbanks Regional Income and Poverty Statistics for 2006

Per Capita Income	24,995
Median Household Income	58,833
Median HUD Income	71,300[1]
Percent of Population Below Poverty Level	9.1

Source: U.S. Census Bureau. 2006. 2006 American Community Survey - Anchorage Municipality. Date visited: August 18, 2008. *http://factfinder.census.gov.*
[1]**Source:** Fannie Mae. 2008. HUD Area Median Income Search. Date visited: August 18, 2008. *https://www.efanniemae.com*.

The following table lists average monthly employment by standard industrial classification in Fairbanks. Uniformed military is not included in the data provided by the Alaska Department of Labor and Workforce Development and has been added to the bottom of the table for comparison. The military is excluded from labor statistics because it does not participate in the unemployment compensation program. According to the Department of Defense - Statistical Information Analysis Division’s 2006 report, Distribution of Personnel by State and Selected

Locations (M02); DoD Military and Civilian Personnel by State, uniformed military at FWA add approximately 5,855 employees and comprise approximately 33 percent of the total government workforce. This raises the total industry employment up to approximately 44,083, with government contributing over 17,587 of that total, or about 40%.

Table 3.3.11.2-2. Fairbanks Region Average Monthly Employment and Earnings Statistics for 2007

Industrial Classification	Average Monthly Employment	Average Monthly Earnings ($)
TOTAL		
Total All Industries	38,228	3,452
Private Ownership	26,496	3,284
Total Government (excludes uniformed military)	11,732	3,832
By Industry		
Natural Resources and Mining	1,153	6,448
Construction	2,756	5,223
Manufacturing	653	4,122
Trade, Transportation, and Utilities	7,673	3,189
Information	564	4,042
Finance, Insurance and Real Estate	1,597	3,568
Professional & Business Services	2,223	3,321
Educational & Health Services	4,239	3,200
Leisure & Hospitality	4,316	1,426
Other Services	1,287	2,213
Unclassified Establishments	36	2,277
Federal Government	3,450	4,762
State Government	5,233	3,560
Local Government	3,049	3,247
Uniformed Military	**5,855[1]**	**3,100[2]**

Source: Alaska Department of Labor and Workforce Development. 2007 Quarterly Census of Employment & Wages (QCEW). Date Visited: August 18, 2008. *http://almis.labor.state.ak.us/*
Source: [1]Department of Defense - Statistical Information Analysis Division. 2006. Distribution of Personnel by State and Selected Locations (M02); DoD Military and Civilian Personnel by State - September 30, 2006. Date visited: August 19, 2008. http://siadapp.dmdc.osd.mil/personnel/M02/fy06/06top.htm. [2]Salary information based on a SBCT scenario. Detailed information can be found in the PEIS (USAEC, 2007).

The table below provides employment and economic data on FWA. The data suggest that FWA has a significant impact on the region's economic activity in terms of employment and total expenditures.

Table 3.3.11.2-3. Socioeconomic Impacts of Fort Wainwright for Fiscal Year 2006

Uniformed Personnel (personnel)	5,855
Non-uniformed Personnel (personnel)	951
Annual Total Payroll (in thousand $)	369,272
Non-personnel Expenditure	209,429

Source: Department of Defense Atlas/Data Abstract for the United States and Selected Areas (data as of September 30, 2006). Date visited: August 18, 2008.
http://siadapp.dmdc.osd.mil/personnel/L03/fy06/atlas_2006.pdf.
[1] Non-Personnel Expenditure figure is the total of Contracts and Grants (Payroll Expenditures not included).

Environmental Consequences

The increase in unit strength would also likely have a proportional increase in school enrollment. As indicated above, the FNSB has a lower student-to-teacher ratio than the national average. Historically, the ratio of school-aged children per military service member has been roughly 0.5 (USAG Alaska, 2004). The addition of 425 Soldiers would, therefore, potentially add approximately 210 school-aged children to the school system, spread across grades K-12. The increase in students would also be spread out over the next several years as GTA units are activated and/or stationed at FWA. In recent years, about 90 percent of military students have attended on-post schools. Stationing of additional personnel is expected to impact less than one percent of current enrollments off-post. Federal Impact Aid would increase according to enrollment of eligible students, to offset the lack of local property tax revenue from students living on post. Factoring in normal school district planning processes, and considering the relatively small number of students, their arrival being distributed over several years, and the fact that the FNSB schools generally enjoy a lower student-to-teacher ratio than the national average, it is anticipated that the school system would be able to absorb this level of student growth without the need for new or expanded facilities. If the preferred alternative is implemented, the Army would determine a more accurate number of school-aged children eligible to enter the local school system for planning purposes.

Combined, the Army and Air Force presence exceeds 20 percent of the FNSB population and is a very influential economic driver in the region. Growth at FWA would to be coordinated with the local communities, villages, and the FNSB. The addition of unit strength may also drive some limited economic stimulus in the local economy. There may be a need for civilian employment and the additional Soldiers and their Family members would slightly increase the business volume in Fairbanks. New units would likely contend with a higher cost of living than what they may normally be accustomed to at other stationing locations. For example, much of the food available in the winter at Fairbanks must be imported from outside central Alaska. The cost of electricity is also much higher in the FNSB than many other locations around the United States.

The 2005 housing analysis conducted by FWA indicated that there would be a shortfall in available vacant housing space on the installation to accommodate a large number of additional Soldiers. This represents the primary concern associated with this action. As mentioned above, the ongoing housing privatization initiative, which will be completed in FY 2009, will serve to alleviate much of the current and potential increase in demand for off-post Soldier and Family housing. Additional unaccompanied Solider Barracks constructed as part of this action will also serve to reduce the demand for off-post housing. Currently there is an abundance of buildable space available within the Fairbanks metropolitan area to be able to absorb growth.

Garrison Construction: (Minor) Construction of new facilities at FWA would have a beneficial short term effect to the local commercial construction contractor market. The requirement for new facilities equates to MILCON funding being spent on commercial services which could in-turn improve employment outside the installation boundaries.

Training Infrastructure Construction: (Minor/Beneficial) Short-term beneficial effects are expected. Construction of ranges not conducted by engineer units as part of troop construction projects would have a temporary beneficial effect from an increase in military spending on commercial goods and construction services; therefore resulting in a positive influence to employment and income.

Live-fire Training: (No Impact)

Maneuver Training: (No Impact)

Mitigations

No foreseeable mitigation measures will be necessary to supplement the projects and activities included in the Proposed Action.

3.3.12 Water Resources

3.3.12.1 Fort Richardson

Affected Environment

FRA has 12 named lakes and ponds and several unnamed water bodies. The combined area for the named lakes and ponds is 359 acres. Five relatively large lakes, Clunie, Otter, Gwen, Thompson, and Waldon, are managed for recreational fishing. The waters on FRA are protected by freshwater use classes A, B, and C, as assigned by the State of Alaska.

Ship Creek (from the Glenn Highway Bridge to the mouth) is listed on the state's 303(d) list of impaired waters due to excess fecal coliform bacteria, petroleum hydrocarbon, oil, and grease. A total maximum daily load for fecal coliform has been determined. According to ADEC studies, most of the pollutants entered Ship Creek as non-point sources from surface water runoff and groundwater downstream of the post, where the watershed is increasingly urbanized. After compiling and reviewing the data, the state concluded that no cumulative or increasing water quality degradation was occurring in the lower portion of Ship Creek (ADEC 1996). Water from Ship Creek is diverted for FRA, Elmendorf AFB, and the Anchorage Municipality. Ship Creek leaves FRA at the border with Elmendorf AFB.

Eagle River is a glacial waterway that ends at Eagle River Flats, a 2,200-acre estuarine tidal marsh. Eagle River Flats was removed from the state's list of impaired waters after extensive remediation efforts for white phosphorous were shown to be successful (ADEC 2002).

Industrial activities have had some effects on groundwater. Through monitoring, pollution was found to be associated with underground storage tanks, chemical storage facilities, and chemical dump sites. FRA was identified as a (Comprehensive Environmental Response, Compensation and Liabilities Act) (CERCLA, a.k.a. Superfund) site. These areas are monitored intensively and no indication of deep groundwater pollution has been detected. Pollution has been minor and localized and no significant risks to human health were found. Water quality has improved recently due to Army restoration projects to mitigate previous damage to the groundwater quality (CEMML 2004).

Water Supply

FRA's water supply intake is located at the reservoir on Ship Creek. The Army has primary rights to 7 Million Gallons per Day (MGD), and nearly 10 MGD is diverted from the reservoir to the Anchorage Water and Wastewater Utility (AWWU). The water supply is treated and distributed throughout FRA. The installation currently uses an average of 1 to 1.5 MGD even though it is permitted for much more. The maximum capacity for the water treatment plant is 6 MGD. Flow rate and water treatment at the plant can be influenced by avalanches or increased

turbidity from rain events. The soils hosting the water distribution system tend to be favorable to protecting from water pipe bursts during earthquakes. While pipes bursting may have been a problem some time ago, the entire system was upgraded in the late 1980s to a stronger system that is not prone to earthquake activity. The distribution system on-post is gravity fed and in some locations is augmented with booster pumps due to low flow.
If peak capacity is exceeded, or if an alternate source of water is necessary, FRA also maintains the ability to access water from the Eklutna line through a 36 inch distribution pipe. However, because this line has been tested only once and is not well-monitored for maintenance needs, there are potential problems with distribution and access with this alternate source.

Additionally, the installation may also use well network systems (3 wells) that have the capability of pumping up to 1,000 GMP. This system is sometimes used when spring water flow into Ship Creek is low.

The entire FRA drinking water system has been privatized through the recent utilities privatization network.

Wastewater

There are no wastewater treatment facilities at FRA (Doyon Utilities Web Site, n.d.).
There is one main line leaving post that carries wastewater from FRA. Historically, the wastewater treatment plant (City-owned) can handle a maximum capacity waste stream from FRA and Elmendorf AFB of 3.5 to 4.0 MGD (Elmendorf accounts for approximately 60 percent of the waste stream). However, due to recent upgrades the treatment plant may be able to accommodate up to 6.0 MGD. DU is currently conducting a characterization study to determine the status of the system.

Environmental Consequences

Garrison Construction: (Moderate) Construction activities associated with the proposed projects could affect surface water through altered runoff and overland flow patterns, as well as increased sedimentation due to direct runoff and fugitive dust. Likewise, impacts to groundwater could occur due to ground disturbance, as well as permanent alteration of local ground structure. These impacts are considered moderate and mostly short in duration, during construction activities.

Overall water use on FRA would increase under the proposed action. The increase in the number of Soldiers and Family members as a result of this proposed action would represent approximately one percent of the total existing population of the Anchorage Metropolitan Area. Due to the quantity of water available, the rate of recharge, and the relatively small increase in population, the increase in water use is expected to have no effect on water availability in the area. No impacts are expected.

Ship Creek is presently an impaired body of water, due to sediment runoff. Ice dams on this creek since the land use of FRA has changed and when freezing water overflows its banks, ice breakups need to be managed. Increased construction activities may slightly increase the quantity of runoff and the amount of water that freezes; however, the overall impact from this increase would be minor.

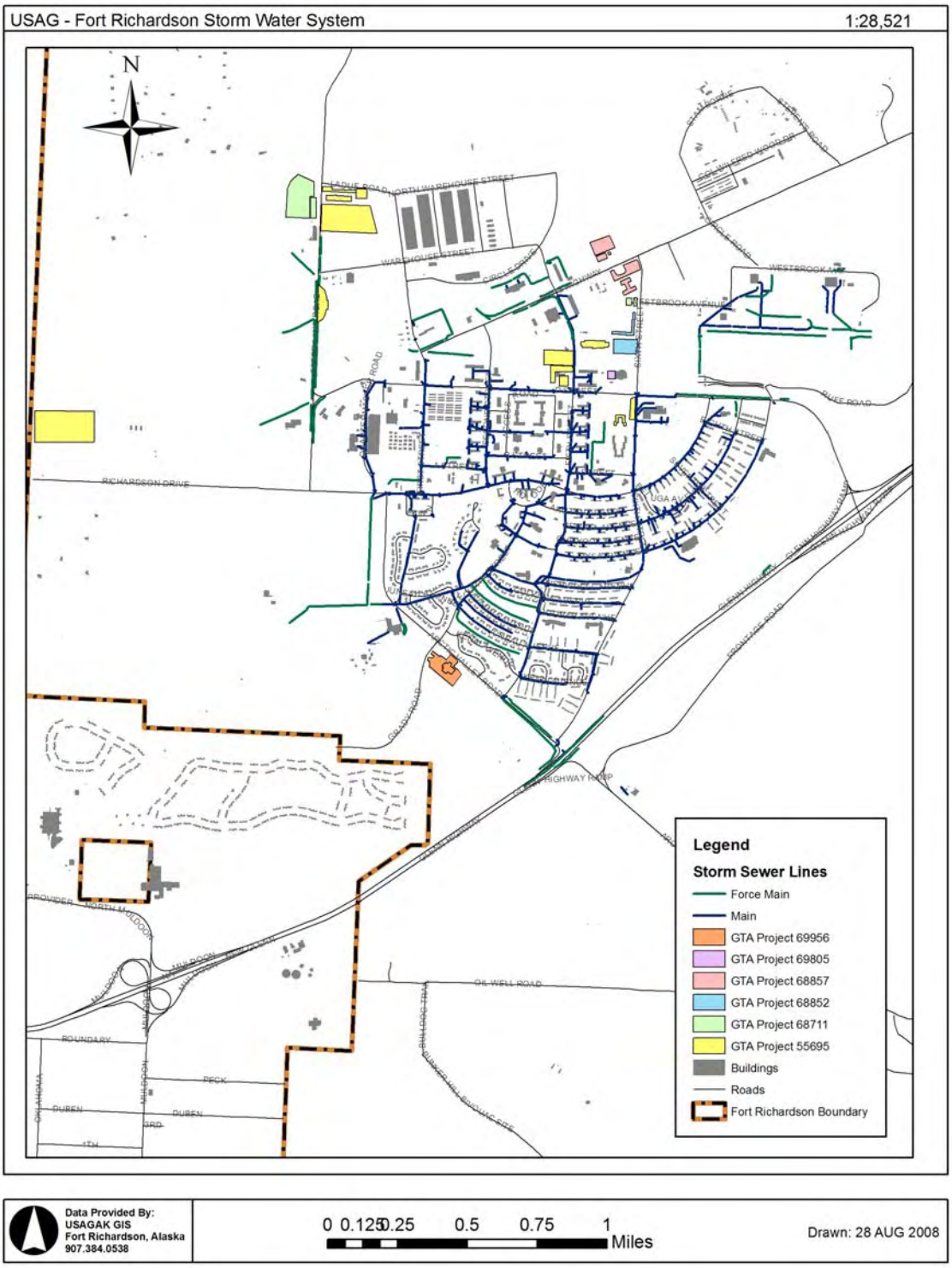
The MEB project is proposed to be sited over one of the main drainage channels for post-wide stormwater discharge. This location would require rerouting of the drainage channel to accommodate the post-construction quantity of stormwater discharge. Additionally, the siting of the MEB will require the relocation of the RV storage lot to the current location of a gravel borrow pit. There would be a potential for petrochemical releases from the stored RVs. If the RV storage site is paved, there may be a greater increase for petrochemical migration to surface waters. If the area is not paved (left as a gravel surface), there may be a greater potential for migration of chemicals to groundwater. These releases are expected to be infrequent and in small quantities and are not expected to have an impact on surface and ground waters.

Upon completion of the Garrison construction projects, in particular the Battalion Complex and Company Headquarters facilities, the already at-capacity stormwater infrastructure could potentially exceed its carrying capacity during substantial rain events. The principle discharge pipe that drains the majority of the post would be insufficient to adequately control the off-post flow of stormwater. The result of the overflow would be potential flooding at the discharge point as well as upslope from that location. Expansion of the existing stormwater system, which is shown in figure 3.3.12.1-1 below, to sufficiently increase its capacity would be required in order to mitigate the predicted shortfall in stormwater conveyance capacity. Stormwater flow studies are being conducted and flow models are being developed in order to more fully assess the extent of the problem and devise permanent solutions to the problem to include systemic changes and infrastructure upgrades.

There are currently issues with the stormwater discharge to Ship Creek during the spring breakup and during 25-year storm events. The siting of these facilities would further burden the existing stormwater management structures, requiring additional mitigation.

Training Infrastructure Construction: (Moderate) Impacts to water resources associated with the proposed actions are considered moderate. Construction activities associated with the proposed projects could affect surface water through altered runoff and overland flow patterns, as well as sedimentation. Likewise, impacts to groundwater could occur due to ground disturbance, as well as permanent alteration of local ground structure.

Figure 3.3.12.1-1. FRA Stormwater System



Most of the proposed range upgrades are minor, with the exception of the upgrades to the MPMG Range. This project would include clearing vegetation and trees and extending additional targetry and access roads beyond McVeigh Creek. Where line of site is compromised, access roads would be constructed, and where targetry is installed, vegetation would be removed. The removal of vegetation would increase the amount of stormwater discharge from the area and also increase sedimentation rates to the creek. Where the access road crosses the stream, a hardened water crossing or alternate bridge structure would be constructed. This crossing would minimize the impacts to surface water quality caused by vehicles that use the access road to perform targetry maintenance and routine vegetation management activities. Ephemeral seeps and wetlands are located on the south side of McVeigh Creek and those features are expected to contribute to the adverse impacts.

The main stormwater discharge pipe, which is already at maximum capacity, would be upgraded to a size that is adequate to control the total discharge after the proposed action is completed. Additionally, other affected stormwater control features, that are at or near capacity, would be upgraded or expanded to properly route the increased flow. Existing piping may be extended down D Street and Quartermaster Road to help accommodate the increased discharge. Where the MEB is sited on the main drainage channel, the channel would be rerouted to the west towards Ship Creek

Due to increased stormwater discharge to Ship Creek, more diligent management of ice breakups would be necessary. No changes to the type of management processes would be necessary; however, the frequency and degree of control would likely increase.

The MPMG Range upgrade would impact that area. However, vegetation removal would be minimized by limiting it to only those areas where line of site is compromised, access roads are constructed, and targetry is installed. Additionally, the installation of a hardened water crossing would minimize increased sedimentation caused by vehicles that cross the creek to perform targetry maintenance. To the greatest extent possible, vegetation removal would be minimized.

Live-fire Training: (Minor) The frequency and intensity of weapons training would increase with the stationing of additional Units. Increases in training could potentially lead to increased sedimentation and decreased surface and groundwater quality.

Munitions usage would increase from the increase in Soldiers and units utilizing FRA. This increase would slightly increase localized sediment loads and concentrations of ordnance constituents in impact area waterways. However, those constituents would be the same as those currently in use. Studies have shown that these constituents degrade rapidly over time and distance from point of impact from a release; therefore, environmental effects would be minor (Houston 2002; Ferrick et al. 2001).

Maneuver Training: (Minor) The frequency and intensity of maneuver training will increase with the stationing of additional Units to FRA. Additional vehicles would be required to support the added Army Units under the proposed action. Increased vehicle use on FRA is expected to have minor impacts on overland surface flow due to increased soil compaction. As the frequency and intensity of maneuver training increases, sedimentation would also increase.

Refueling operations and petrochemical releases into the environment are expected to increase proportional to the number of additional vehicles that would be located at FRA under the proposed action. Inadvertent releases would occur at a higher rate than present due to the

increase in vehicles and personnel and could affect surface water quality. Releases from these activities are expected to have only minor impacts.

Soldiers using the training areas would bring water with them to the site and no wells would be required. There are no anticipated impacts to groundwater usage.

Mitigations

General mitigation measures for the proposed action include:

- Continue water resources programs and monitoring.
- Continue implementation of best management practices.
- Continue implementation of the INRMPs, including institutional controls and training programs for Soldiers.
- Implementation of water resource protective measures and restorative techniques as specified in the INRMP, Volume III, Supplements.

3.3.12.2 Fort Wainwright

Affected Environment

At FWA, there is an adequate potable water supply available to the Main Cantonment area to support all additional construction, Soldiers, and their Families. Maximum capacity at FWA is 4 MGD, with a daily use averaging in the range of 1.7 to 2.5 MGD. Though current installation demand can reach peaks of up to 3.7 MGD, the increase represented by additional facilities and people would not exceed capacity. Existing waste water discharge and sewer systems are also functioning well below capacity, and there is no reason to believe that the increased demand posed by the Proposed Action would stress existing infrastructure.

Moreover, there are further assurances of sufficient water resources in the form of contractual guarantees and on-going improvements to efficiency and capacity. Potable water and treatment of wastewater are responsibilities of Golden Heart Utilities, a subsidiary of Doyon LLC. Doyon was aware of the possibility of growth at FWA when it entered into its utilities privatization agreements with the garrison. (In fact, more extensive stationing scenarios remained a distinct possibility at the time the contract was signed.) Communication with Doyon confirms that it remains capable of providing for all of FWA's water needs, including the demands of those Soldiers and Families who would require water on post.

There are no impaired water bodies at FWA, and implementation of the Proposed Action is not anticipated to considerably increase sediment load to water bodies located near training areas at FWA.

Therefore, impacts to water resources at FWA for all activity areas are considered none to minor.

3.3.12.3 Donnelly Training Area

Affected Environment

Most surface water within DTA East drains either directly into the Delta River or into its major tributary, Jarvis Creek. The Delta River drains directly into the Tanana River north of DTA East. Ober Creek, a tributary of Jarvis Creek, drains a southern portion of DTA East. On the eastern

boundary of DTA, Granite Creek drains north directly to the Tanana River. The primary waterways potentially affected by the proposed action include the Delta River and Jarvis and Ober creeks.

As shown in Figure 3.3.7.3-1., DTA's surface waters are diverse, including numerous rivers, streams, ponds, lakes, and extensive wetlands. DTA lies entirely within the Tanana River drainage basin. A majority of the larger streams flowing through DTA, such as the Delta River and Jarvis Creek, are glacial-fed. Principal glaciers lying along or south of DTA's southern boundary include Canwell, Castner, and Black Rapids, which drain into the Delta River. Jarvis Creek is fed by melt water from glaciers on Mt. Silvertip (USAG Alaska 1979). The Delta River and Jarvis Creek have broad braided channels flowing over permeable alluvial fan deposits. Large quantities of stream flow infiltrate through the sediments into the groundwater table, resulting in decreasing stream flow in a downstream direction.

The volume of stream flow fluctuates dramatically by season. From October to May, flow is limited to groundwater seepage from aquifers into streams, and many small streams freeze solid (zero discharge). In particular, Jarvis Creek ceases to flow at the Richardson Highway during the winter. Stream flow further upstream is converted to winter river icing or "aufeis". Aufeis is an ice sheet that forms on a floodplain in winter (as the normal channels freeze solid or are otherwise dammed so that water spreads out over the surface and also freezes). Aufeis can accumulate to several meters in thickness over a winter and cover large areas of the active floodplain in braided streams such as the Delta River and Jarvis Creek. Snowmelt typically begins in May and reaches its peak in June, followed by the peak melting of glaciers in July. After July, most of the snow has melted at higher elevations, and rainfall sustains a steady flow during August and September.

The estimated peak discharge for various return periods for the Delta River, Jarvis Creek, and Ober Creek are presented in Table 3.3.12.2-1 below. These figures are for values of cubic feet of water discharge per second at the river mouth.

Table 3.3.12.2-1. Estimated Peak Discharge For Various Return Periods At Delta River, Jarvis Creek, And Ober Creek

Stream	Drainage Area (Square Miles)	Expected flood discharge (cfs)						
		2 years	5 Years	10 years	25 years	50 years	100 years	500 years
Delta River[1]	1,638	Na	Na	17,100	Na	33,000	42,000	67,000
Jarvis Creek[2]	248	1,342	2,094	2,640	3,368	3,928	4,504	5,902
Ober Creek[2,3]	30	291	500	665	898	1,087	1,288	1,802

[1] Federal Emergency Management Agency 1982,Dingman et al. 1971

[2] Curran et al. 2003.

[3] Ober Creek flood discharge estimate is included as part of Jarvis Creek flood discharge estimate.

Na = Data not available.

Surface water is a measurement of chemical parameters of the creeks and rivers, which are used to determine the cleanliness and safety of the water. Common parameters include pH, dissolved gases, temperature, hardness, and dissolved solids. The water quality measurements help to identify the appropriate water quality classification for each waterway. The State of Alaska considers all freshwaters in Alaska to be in their original and natural conditions; therefore, they are also considered suitable to serve all the uses established under each of the three different water quality classes:

A. Water Supply
    1. drinking, culinary, and food processing
    2. agriculture, including irrigation and stock watering
    3. aquaculture
    4. industrial
B. Water Recreation
    1. contact recreation
    2. secondary recreation
C. Growth and propagation of fish, shellfish, other aquatic life and wildlife

The water quality criteria listed in 18 AAC 70 and in the Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances (dated 15 May 2003), in combination with the above mentioned classes and subclasses of water use, constitute the water quality standards for a particular water body. The water quality standards regulate human activities that could result in alterations to waters with the State of Alaska's jurisdiction.

All waters within DTA East are protected by use classes (A), (B), and (C) as assigned by the State of Alaska (CEMML 2004).

The pH levels in the Delta River and Jarvis Creek are slightly alkaline, but they are within limits established by the state. Dissolved oxygen levels generally vary with water flow - they are highest in June, July, and August and may approach zero during periods of prolonged iced cover (USAG Alaska 1980; USAG Alaska 1979).

While lakes are abundant on DTA, their water quality has not been scientifically determined. Water samples from Bolio Lake indicate a pH of 8.8 to 9.2, an alkalinity beyond acceptable limits defined by the state. Nitrogen in Bolio Lake is in organic forms (0.98 milligrams per liter (mg/l)), with low concentrations of nitrates and nitrogen (0.02 mg/l). Samples collected from Bolio Lake in August 1975 had dissolved oxygen concentrations of 9.8 mg/l near the surface and 10.0 mg/l at a depth of 15 feet.

Environmental Consequences

Live-fire Training: (Minor) Only minor impacts are anticipated under the proposed action. The frequency and intensity of weapons training could increase with the stationing of additional Units. Increases in training could lead to increased sedimentation and decreased surface and groundwater quality.

Munitions usage would increase from the moderate increase in Soldiers and units utilizing DTA. This increase would slightly increase localized sediment loads and concentrations of ordnance constituents in impact area waterways. However, those constituents would be the same as those currently in use. Studies have shown that these constituents degrade rapidly over time and distance from point of impact from a release; therefore, environmental effects would be minor (Houston 2002; Ferrick et al. 2001).

Maneuver Training: (Minor to Moderate) The frequency and intensity of maneuver training would increase with the stationing of additional Units to FRA and FWA. Additional vehicles would be required to support the added Army Units under the proposed action. Increased vehicle use on DTA is expected to have minor impacts on overland surface flow due to

increased soil compaction. As the frequency and intensity of maneuver training increases, sedimentation would also increase.

Refueling operations and petrochemical releases into the environment are expected to increase proportional to the number of additional vehicles that would be training at DTA under the proposed action. Inadvertent releases would occur at a higher rate than present due to the increase in vehicles and personnel and could affect surface water quality. Releases from these activities are expected to have only minor impacts.

Soldiers using the training areas would bring water with them to the site and no wells would be required. There are no anticipated impacts to groundwater usage.

Mitigations

General mitigation measures for the proposed action include:

- Continue water resources programs and monitoring.
- Continue implementation of best management practices.
- Continue implementation of the INRMPs, including institutional controls and training programs for Soldiers.
- Implementation of water resource protective measures and restorative techniques as specified in the INRMP, Volume III, Supplements.

3.3.13 Facilities

3.3.13.1 Fort Richardson

Affected Environment

Installation lands that the Army has granted other entities to use, through a lease or use agreement, are considered “outgrants”. USARAK Garrisons have a total of 126 outgrants, generally in the form of easements, leases, permits, and other grant instruments (Nakata 2001).

Rapid deployment is a key element of the USARAK mission. Although Alaska’s transportation infrastructure is limited by terrain, climate, and a relatively small population, it is more than sufficient to meet USARAK’s needs. USARAK Garrison deployment capabilities include air, rail, road, and sea (Nakata 2001).

Housing on USAG FRA is organized in the following categories: family housing, enlisted unaccompanied housing, and non-enlisted unaccompanied housing. The housing areas on FRA consist of seven specific neighborhoods. The land use areas are compact, totaling 1,435 units on 273 acres. The neighborhoods are bound on the south and east by hills and a large forested area, blocking potential noise and pollution from the nearby Glenn Highway. Units in the Independence Park and Fireweed neighborhoods have undergone or are undergoing reconstruction/rehabilitation. Enlisted unaccompanied personnel housing, or barracks, is the Army’s number one housing facilities priority. An evaluation of USAG FRA’s barracks and other troop facilities found that barracks facilities at FRA needed improvement and recommended a major revitalization program to construct new barracks and support buildings, as well as renovation of many existing facilities. FRA’s enlisted unaccompanied personnel area lies in the heart of the Main Post, consisting of 14 two-story buildings. Three other non-enlisted unaccompanied personnel housing land use areas exist in the cantonment area. Two areas are

used as distinguished visitor quarters, and the third area contains facilities for the Non-Commissioned Officers (NCO) Academy.

Community facilities is a broad term encompassing a variety of activities ranging from shopping, banking, education and recreation activities to police, fire protection and health care facilities. Land use areas set aside for these purposes are critical as outdoor recreation plays an important part in maintaining morale and relieving everyday stress for installation residents. Community facilities are FRA are dispersed throughout the Main Post area. Primary facilities include the commissary, post exchange, child development center, Theater, and a Burger King. Secondary community facilities include the gas station, credit union, chapel, police station, fire station, post laundry and education center/Military Occupational Specialist (MOS) library. Three elementary schools are nearby, and high school students attend Bartlett High School which is located partially on the installation near the entrance to Elemendorf AFB. Other community facilities include the fitness center, auto hobby shop, car wash, and the youth development center. The FRA National Cemetery is located north of the airfield. Outpatient and routine medical/dental services are provided to all active duty military, family members, and retirees at the Troup Medical and Gemini Clinic.

Installation support facilities include range maintenance, vehicle maintenance, administrative support, and supply and storage facilities. Eight individual supply/storage areas (three large and five small) exist within the extended main cantonment area. Two of the large areas are used for ammunition storage. The other large area contains facilities for general purpose storage, cold storage, deployment equipment storage, and general shipping/receiving. The five smaller areas are used for supply and storage facilities, but none of these areas exhibit any land use incompatibilities.

Range and training land facilities are defined as areas of land or water set aside, managed, and used to conduct research; develop, test, and evaluate military munitions, explosives, other ordnance, or weapon systems; or to train military personnel in their use and handling of weapons systems. USAG FRA range and training land facilities information is summarized in the Range and Training Land Development Plan (Nakata 2001) and the Army Range Inventory Database. The overall condition of the impact areas is good. USAG FRA implemented a prohibition on the firing of munitions containing white phosphorus in the early 1990s. Remediation of white phosphorus in the Eagle River Flats Impact Area has been ongoing since then. Preliminary findings from Palazzo et al. (2002) found minimal contamination from explosive residues and heavy metals as a result of munitions firing into Washington and Delta Creek impact areas at DTA. Further, preliminary results indicate that no contaminants are migrating outside of impact areas in surface water, groundwater, soils, or in plant uptake (Palasso et al 2002). Physical impacts from high explosive munitions have resulted in cratering.

Military deployment requirements are met by Elmendorf AFB, one of the largest airfields in Alaska. It is a critical refueling point and personnel and cargo transfer point along the shortest air traffic route between military installations in the United States and the Far East. Elmendorf AFB is located adjacent to FRA and roughly two miles from the center of the cantonment area. The airfield can support any type of military aircraft, including the C5 Galaxy. Bryant Army Airfield is used primarily by the Alaska Army National Guard as a base for its fixed-wing and rotary aircraft. Anchorage International Airport, 15 miles southwest for FRA, is the nearest commercial airport and houses over 30 carriers that provide passenger service. This airport is also the largest air cargo handler and transfer site in the United States. Traffic issues are addressed in the Section 3.3.14 of this document.

Environmental Consequences

Garrison Construction: (Minor to Moderate) There is a considerable amount of cantonment construction planned. The recent delay of MILCON funding will strain the available space for units as the construction of the needed facilities is delayed. Until the new facilities are constructed, there may be a short-term need for temporary off-post housing for the Soldiers who cannot be housed within the available on-post facilities.

Currently, the existing utilities infrastructure is sufficient to support the needs of the installation. The impending privatization of utilities through DU will ensure that utilities infrastructure is sufficient to support the growth within the cantonment area.

Existing community support services and facilities are adequate to support the additional personnel at FRA. No additional services or infrastructure would be needed within the surrounding community.

The proposed action may result in increased frequency of out-of-state and overseas deployments. Under current training doctrine, deployment would not increase on a unit basis (e.g. individual platoon unit deployments would remain at four times a year). However, the number of units, to include platoon, company, and battalion, would increase under the proposed action. Therefore, the total number of unit deployments and miles would increase. These changes would have minor impacts on transportation and installation support facilities.

Training Infrastructure Construction: (Minor) Because the range upgrades are not extensive, there are only minor impacts anticipated from the construction of training facilities.

Live-fire Training: (No Impact) There are no anticipated impacts to facilities associated with the proposed increase in live-fire training activities.

Maneuver Training: (No Impact) There are no anticipated impacts to facilities associated with the proposed increase in maneuver training.

Mitigations

FRA and/or FWA housing representatives will coordinate directly with the local government, Chamber of Commerce, hotels, realtors, and other related parties to address any potential temporary housing needs while construction is still underway.

3.3.13.2 Fort Wainwright

There is adequate vacant space to construct new facilities at FWA. Although some deconstruction and construction would occur at FWA, all required facility space would easily be accommodated within the existing cantonment area. In addition, all required maneuver training would be conducted on USARAK training lands; no new range maneuver areas would be constructed. Finally, the expansion of necessary ranges in the FWA small arms range complex would occur within the footprint of the range complex. Therefore the anticipated impacts to Facilities at FWA for all activity areas are none to minor.

3.3.13.3 Donnelly Training Area

There are no range expansion projects planned or additional infrastructure requirements in order to meet the need of the Proposed Action at DTA. The units associated with the Proposed Action would be permanently stationed at either FRA or FWA. DTA also possesses sufficient existing facilities to accommodate the relatively minor increase in training associated with a growth in unit strength at FRA and FWA. Therefore the anticipated impacts to Facilities at DTA for all activity areas are none to minor.

3.3.14 Traffic

3.3.14.1 Fort Richardson

Affected Environment

Traffic on Alaskan highways has risen steadily over the past decade. Traffic information is available from the Alaska Department of Transportation's (AKDOT) 1999-2001 statistical data (AKDOT 2002b).

Average 2001 daily traffic counts along the Richardson Highway, available only in close proximity to Fairbanks, show a sharp decline in traffic levels from Fairbanks south to Harding Lake. Average daily traffic between Fairbanks and North Pole was 15,000 vehicles while average traffic south of Eielson AFB towards Harding Lake was 2,600 vehicles per day - translating into 5,475,000 and 949,000 annual vehicles, respectively. No vehicle counts are available for segments further south along the Richardson Highway.

Accident statistics along the Richardson Highway are available from AKDOT's 2000 statistics (AKDOT 2002a). Accidents have been divided into two categories: those involving "property damage only" (PDO) or minor injuries, and accidents involving major injuries or fatalities. Between the Glenn Highway and Delta Junction, there were 22 PDO events and two major accidents. Moose were involved in seven of the accidents along this 151-mile stretch. Between Delta Junction and Eielson, there were 47 PDO's and minor accidents, and two major accidents. Moose were involved in 10 of these accidents. This stretch of the highway covers 76.9 miles. Between Eielson and Fairbanks, there were 111 PDO's and minor accidents, and five major and fatal accidents. Moose were involved in 20 of the accidents along this 17.4-mile stretch.

Overall, fewer accidents in Alaska occurred, based on Vehicle Miles Traveled (VMT), on divided rural interstates (1.166 accidents per 100 million VMT) and undivided urban and rural interstates (1.282 accidents per 100 VMT). These are also the roadways most likely to be impacted by "administrative road marches", involving military convoy traffic for deployment training. Currently, USARAK deployment miles are greatest between FWA Main Post and YTA. Deployment miles may also include rail and air transport methods, such as airborne training flights.

AR 385-55, *Prevention of Motor Vehicle Accidents*, and USAG Alaska Regulation 55-2, *Transportation Operations and Planning in Alaska*, provide detailed regulations for convoy preparation and implementation. Additional information can be found in the *Final Environmental Impact Statement for Transformation of U.S. Army Alaska, Vol. 2*, Appendix H (CEMML 2004). Army convoys are subject to an AKDOT permitting process. USAG FRA standard operating

procedures call for large convoys to be broken into groups of no more than 20 vehicles. These groups are then separated by 30-minute gaps to alleviate traffic pressures on Alaska's highways. Highway speed for a military convoy is not expected to exceed 40 mph, with the exception of "catch-up speed", listed at 45 mph. Convoys are normally not authorized to travel during peak traffic hours (USAG Alaska 2001).

Environmental Consequences

Garrison Construction: (Moderate) Due to the addition of approximately 1773 Soldiers to FRA, the volume of commuter traffic on and off-post would increase proportionally, including during rush hour. Additionally, equipment required for clearing and grading activities would require use of existing roadways (namely the Richardson Highway and the Glenn Highway). This use of local highways would be relatively infrequent and temporary in duration.

Key points of congestion for traffic in and around FRA include the FRA Main Gate and the Muldoon exit (Anchorage). No road upgrades would be made in the cantonment area as part of the proposed action; however, upgrades may be made to the front gate. As with most military installations in recent years, increased security requirements coupled with increasing numbers of assigned personnel, both military and civilian, have led to increased delays at installation entry points. The upgrades to the front gate would likely create temporary delays for the traffic entering and exiting the installation until they are complete.

Due to short-term impacts associated with increased equipment and commuter traffic as well as improvements to the Main Gate, FRA will likely experience minor to moderate traffic impacts. These impacts will be mitigated by traffic planning and upgrades.

Training Infrastructure Construction: (Minor) Equipment required for clearing and grading activities would require use of existing roadways (Richardson Highway and Alaska Highway). Use of local highways would be minor and temporary in nature.

Live-fire Training: (Minor) There are minor anticipated traffic impacts due to increased live-fire training activities. These impacts would be contained within the boundaries of the post and would not affect traffic patterns within the surrounding community.

Maneuver Training: (Minor) Convoys from FRA to DTA require the use of the Glenn and Richardson highways. Convoy sizes vary, based on the unit size deploying for training, but would be similar to those traveling between FWA Main Post and DTA. Large convoys are usually segmented to reduce impacts to traffic on public roads.

During favorable weather conditions, when traveling from FRA, vehicles typically travel by way of Glenn Highway. During winter, or otherwise unfavorable conditions, vehicle movement would impact Richardson Highway traffic between Fairbanks and Delta Junction. There are minor impacts to traffic anticipated under the proposed action.

Mitigations

All Army operations would follow USAG Alaska Regulation 55-2, *Transportation Operations and Planning in Alaska*, which establishes policies and procedures for USARAK units and agencies using transportation resources in support of Army operations. Upgrades to the Main Gate will be completed. An additional traffic study will provide further traffic planning.

3.3.14.2 Fort Wainwright

In October 2006, FWA assessed the future viability of its existing road infrastructure by developing a Six-Year Transportation Plan. The Plan determined that no intersection on FWA currently operated below accepted Department of Public Works (DPW) standards. Moreover, this study based its assumptions and conclusions on a projected 40 percent gain of residential homes and a 60 percent gain in work facilities on the installation over the next six years. This level of growth posited by the study exceeds the level of growth proposed in this EA. Also, safety measures are continually evaluated to reduce the risk of traffic-related incidents to the civilian and military population.

However, based on the projected growth and some minor deficiencies in the traffic infrastructure, the plan does recommend eleven improvement options. These improvements will fully mitigate any noted deficiencies, ensuring that future traffic conditions comply with DPW and national industry standards.

Construction equipment and worker vehicles associated with implementing the Proposed Action would have short-term impacts at the main gate and at the roads around designated construction sites. Impacts of the Proposed Action on traffic at FWA would therefore be minor.

3.3.14.3 Donnelly Training Area

Affected Environment

Traffic on Alaskan highways has risen steadily over the past decade. Traffic information is available from the AKDOT 1999-2001 statistical data (AKDOT 2002b).

Rapid deployment is a key element of the USARAK mission. Although terrain, climate, and a relatively small population limit Alaska's transportation infrastructure, it is adequate to meet these needs. Deployments are capable by air, rail, road, and sea (Nakata Planning Group 2001).

The only transportation resources available to serve DTA and the Delta Junction are the Richardson and Alaska highways and the Allen Army Airfield. Both two-lane highways are maintained year-round. In addition, a maneuver corridor, connecting the southeastern corner of TFTA and the northwestern corner of DTA, has been established for training purposes (Nakata Planning Group 2001).

As a result of modularity improvements to DTA East training facilities, primarily the construction of the BAX/CACTF complex, deployment miles to DTA East are anticipated to increase from 437,600 to approximately 1,042,000 from 2004 through 2009, then drop to 937,600 by 2010. Company and battalion-sized deployments to DTA East will increase from 31 to 62 times per year. Additional information on convoys can be obtained from the *Final Environmental Impact Statement for Transformation of U.S. Army Alaska, Vols. 1 and 2* (CEMML 2004). Further discussion regarding traffic impacts can be found in Section 4.2.5, *Human Health and Safety*.

Environmental Consequences

Additional convoy traffic would result from the proposed action. Military convoy traffic to DTA East is expected to increase as range use increases. As a result of additional Units that will be stationed at FRA and FWA, the total number of Unit deployments and miles would increase.

The potential for vehicular accidents would increase as the number of vehicles using Alaskan transportation routes increases. Summer convoys could potentially interfere with heavier tourist-season traffic loads. Overall, convoy impacts are expected to be minor.

Live-fire Training: (No Impact) There are no anticipated traffic impacts due to increased live-fire training activities.

Maneuver Training: (Minor to Moderate) USAG FWA currently deploys regularly from FWA to DTA East and West for training. USAG FWA deploys troops 26 times per year from FWA Main Post to DTA. This includes 24 company-sized deployments (involving 30 vehicles) and two battalion-sized deployments (involving 122 vehicles). The total annual military vehicle count between FWA Main Post and DTA is 964, or 1,928 including return (roundtrip) convoy traffic. Convoys from USAG FRA to DTA require the use of the Glenn and Richardson highways. Convoy sizes vary, based on the unit size deploying for training, but would be similar to those traveling between FWA Main Post and DTA. Large convoys are usually segmented to reduce impacts to traffic on public roads.

The proposed action would increase the number of Soldiers stationed at FWA by 425 and at FRA by 1773. The additional vehicles from these units would proportionally increase the convoy traffic traveling from those installations to DTA.

During favorable weather conditions, when traveling from FRA, vehicles typically travel by way of Glenn Highway. During winter, or otherwise unfavorable conditions, increased vehicle movement between Fairbanks and Delta Junction will impact traffic on Richardson Highway. There are minor to moderate impacts to traffic anticipated under the proposed action.

Mitigations

In 2007, 5-7 new passing lanes were created to assist in traffic mitigation. Additionally, the following mitigation measures currently in place are continually revised and reviewed to respond to new or increasing impacts.

- Maintenance of current institutional control policy that limits access to contaminated sites, and maintenance of an active restoration program to clean up contaminated sites on USARAK lands. These policies reduce health and safety risks from exposure to contaminated areas.
- Continued compliance with Alaska state law (18 AAC 75.300-.380), which requires responsible parties to notify the Alaska Department of Environmental Consideration when an oil or hazardous substance discharge or release to the environment occurs and requires site characterization and cleanup (18 AAC 75.325-.380).
- Continued management of environmental programs listed in current INRMPs (USAG Alaska 2002b,c) and continued provision of environmental awareness training to troops and civilians. The INRMPs list specific actions designed to alleviate human health and safety risks.
- Splitting of convoys into smaller vehicle groups and staggering of departure times, per USAG Alaska Regulation 55-2, *Transportation Operations and Planning in Alaska*, to ease traffic congestion problems.
- Continued provision of portable containment systems for use at in-field refueling points that would be capable of containing potential fuel releases from fuel tanker vehicles. This would minimize the risk of area contamination from inadvertent petrochemical release.
- Continue convoy-permitting processes with AKDOT and Public Facilities.

- Consideration of alternate travel routes and methods for military convoys, including line haul, airlift, and rail, if available to help avoid traffic risks and impacts.
- Expansion of public notification of imminent convoy activity, including specific days of convoy activity. This would allow the public to avoid highway travel concurrent with military convoys.

IAW USAG Alaska Regulation 55-2 requests for convoy clearances must be submitted at least 14 days prior to the scheduled movement. This requirement provides adequate time for the requests to be by the MCC/MCT with Alaska State authorities. When this lead-time cannot be met due to un-programmed operational requirements such as emergency deployment readiness exercises, requesting units will notify the MCC/MCT. The requesting unit will then prepare a DD Form 1265 as expeditiously as possible and submit it to local MCC/MCT for processing.

Requests for convoy movement that cannot be completed before 1200 on Saturdays or for convoy movement on Sundays and holidays will be disapproved unless it is essential in meeting a military training requirement. Units will submit requests for exceptions to policy to the MCC/MCT. These requests must be signed by the unit commander. The MCC is responsible for processing requests and obtaining Assistant Chief of Staff approval/disapproval for each exception to policy submitted.

Convoys are not normally authorized to move on any of the three posts' primary road network (paved surfaces) during the peak traffic hours (0630 to 0800, 1100 to 1300, and 1530 to 1700) Monday through Friday. This requirement may be waived due to operational requirements. The MCC/MCT, when reviewing convoy requests, will coordinate with the military police for exceptions when there is a valid operational requirement.

3.3.15 Land Use

There would be no changes in land use activities, but an increase in those activities associated with implementation of the Proposed Action. These activities will reduce the amount of open space and/or suitable building area within each cantonment area. However, construction would largely be conducted as infill (among existing facilities or within the boundary of the main post), and no additional land expansion areas would be acquired or considered in order to accommodate proposed growth at USAG FRA and USAG FWA. No construction is planned for DTA. Therefore, impacts to land use at USAG FRA, USAG FWA, and DTA for all activity areas are none to minor.

3.3.16 Hazardous Materials and Hazardous Waste

FWA disposes of its non-hazardous solid waste at its installation landfill. Though current plans call for the closure of the FWA landfill some time during the next few years, there exists ample capacity and willingness at the Fairbanks North Star Borough landfill to accept all waste, included any projected increases, from FWA. FRA does not have a landfill on-site. Rather, it transports is non-hazardous solid waste a short distance to the Anchorage municipal landfill, which also possesses ample capacity and willingness to accept both the current waste stream as well as any foreseeable increase associated with the Proposed Action.

During construction and operation of garrison facilities, and during clearance and expansion of range assets, USARAK garrisons and their contractors would adhere to existing standard operating procedures (SOPs) and USAG Alaska PAM 200-1 *Hazardous Materials and Regulated Waste Management*, for the handling and transfer of hazardous materials and

hazardous wastes and comply with all occupational health and safety standards. During expansion of ranges identified in this EA, lead-contaminated soils would remain on existing range areas. No new range areas would be constructed outside the existing small arms range complexes. At direct-fire ranges, much of the targets are constructed of heavy rubber material that is capable of withstanding a considerable amount of direct-fire. The blocks are frequently rotated to minimize disruption of the material. When the material is beyond its life expectancy, the blocks are properly disposed of as lead-contaminated debris. The garrisons also have a robust recycling program which includes waste stream materials such as light bulbs; glycols; batteries, petroleum, oils, and lubricants; and brass from shell casings.

No new construction will take place at DTA and no units will be stationed there.

Although it is very difficult to forecast the exact increase in hazardous waste that would occur due to the Proposed Action, this increase will be relatively small and easily managed by existing disposal processes. Hazardous waste is removed from FRA, FWA and their associated training lands by utilizing the Defense Logistics Agency's (DLA) Defense Reutilization and Marketing Service (DRMS). In discharging its responsibilities, DRMS will continue to contract with appropriate hazardous waste disposal contractors, a process that guarantees that there will be suitable recipients for any and all hazardous waste generated at FRA, FWA, and DTA. Moreover, the amount of hazardous waste to be generated due to the Proposed Action, though very difficult to estimated, is anticipated to be no more than 3-5% of current amounts at each affected garrisons. In fact, due to continuing 15% reductions in hazardous waste generation that USAG FRA and USAG FWA have achieved in each of the past few years, it is exceedingly likely that, cumulatively speaking, these garrisons will actually experience overall decreases in hazardous waste generation despite any increases associated with the Proposed Action. It is also noteworthy that no new waste streams would be created as a result of the Proposed Action.

Overall, existing practices are expected to improve health and safety impacts from the use, storage, or disposal of hazardous materials. Due to the continued efforts of the garrisons to modernize equipment that would effectively reduce waste, as well as the minimal increases posed by the Proposed Action, no significant increases in the use of hazardous materials or generation of hazardous wastes would occur. Therefore, impacts regarding hazardous materials and wastes for FRA, FWA, and DTA are considered none to minor.

3.3.17 Noise

The activities associated with construction would contribute to noise levels experienced in the cantonment areas of both FRA and FWA. However, these impacts would be temporary, localized, and would not contribute to noise levels outside of garrison boundaries. Noise associated with the expansion of ranges on the small arms range complex at both FRA and FWA would also be temporary.

According to a 2006 Joint Land Use Study (JLUS) covering operations at FWA and Eielson Air Force Base (AFB), noise zones for small arms fire at FWA's SAC are largely contained within FWA boundaries. Although small arms fire may be heard at adjacent Richardson Highway (Figure X), no noise sensitive land uses exist along that stretch of the highway corridor. In addition, the FNSB has incorporated military noise contours into their regional comprehensive plan and development codes, effectively limiting future development in areas that may conflict with existing noise contours (U.S. Army/USAF/FNSB, July 2006). At FRA, noise zones associated with small arms fire are largely contained within the installation boundary. Although

some noise generated from live-fire activity in the FRA small arms range complex can be heard at adjacent Glenn Highway, there are no nearby sensitive land uses. Analysis of existing noise contours and studies, coupled with the fact that new range construction will occur within existing SACs in close proximity to existing ranges, indicates that there will be no impact stemming from the reconfiguration of ranges. Meanwhile, the Proposed Action does not include the introduction of any new types of training not contemplated by the above noise analysis.

Noise levels along on-post roadways and along military vehicle trails would increase. However, overall traffic volumes and vehicle speeds generally are low for these types of roadways. As a result, noise increments attributable to vehicle traffic would remain within the Army's land use compatibility guidelines.

Therefore, impacts to noise at each installation for all activity areas are none to minor.

3.3.18 Air Space

According to a November 19, 2007 Memorandum, Restricted Area Annual Utilization Reports, during the 01 October 2006 to 30 September 2007 reporting period a majority of scheduled airspace for Army flight operations at FWA and FRA were unused and was returned to Joint (Army/Air Force) Airspace control. The total Joint unused scheduled airspace is also reported to demonstrate the total amount of available airspace returned to public and private use[5]. While some military flight activities are not compatible with civilian activities, many restricted areas are conditionally available for public aerial access or overflight; and unused airspace time, if approved, may conditionally be available for civilian use (USAG Alaska, 2004). USAG Alaska Regulation 350-2 United States Army Alaska Range Regulation (15 July 2002) outlines and discusses airspace scheduling protocol.

While virtually all the designated and scheduled airspace at DTA was utilized during the operating period, USAG Alaska regulation and existing FAA policies regulate the operation of private aircraft during live-fire and other military training events in order to minimize the risk of harm to the public.

The Proposed Action will not increase the use of airspace restrictions on civilian flight operations. There is no increased anticipated use of airspace associated with the Proposed Action; the unit composition of Soldiers considered for stationing at USAG FRA and USAG FWA is comprised of ground-based Soldiers. Nor does the Proposed Action include the introduction of new aircraft or activities that would serve to increase or alter existing air operations or flight patterns. Because of the adequate availability of civilian airspace use, and restrictions in place to minimize the risk of military conflict with the public, the anticipated impacts to Air Space at each installation for all activity areas are none to minor.

[5] No baseline data is available to describe the total Joint amount of scheduled airspace

Table 3.3.18-1. Restricted Airspace Availability For The 01 October 2006 To 30 September 2007 Reporting Period

Restricted Airspace	Hours Scheduled	Hours Actually Utilized	Unused Army Flight Hours	Total Unused Joint Flight Hrs
Fort Wainwright				
R2205	2,926	2,388	438	6,372
Fort Richardson				
R2203 A	4,997	184	4,813	8,576
R2203 B	5,016	343	4,673	8,417
R2203 C	5,035	225	4,810	8,535
Donnelly Training Area				
R2202 A	3,591	3,591	0	5,169
R2202 B	3,344.5	3,344.5	0	5,415.5
R2202 C	2,708.25	2,708.25	0	6,051.75
R2202 D	2,435.75	2,435.75	0	6,324.25

3.3.19 Energy

FWA, FRA, and DTA (whose power is supplied by Fort Greely) completed utilities privatization on August 15, 2008, transferring ownership and responsibility to the electrical systems at each installation to Doyon Utilities. As a regulated public utility, DU will maintain, operate, and own all utilities at FRA, FWA, and DTA (Fort Greeley), and will be fully responsible for and capable of accomplishing any expansion needed to serve the evolving needs of these installations. During the UP process, Doyon completed extensive study and modeling of existing and projected energy requirements at both USAG FRA and USAG FWA . In a letter responding to the draft SPEIS, Doyon stated its ability to meet the energy demands associated with each potential stationing scenario discussed in that document. (UP, Public Response Letter, DU, 11 June 2008 – included as Appendix C). The stationing scenarios considered in this EA involve smaller numbers of people, facilities, and overall demand than certain stationing scenarios considered in that SPEIS. To ensure this level of capacity, DUhas already commenced upgrades to existing power distribution technology at both FRA and FWA. These upgrades will include a complete re-build of all electric facilities at FRA, FWA, and DTA within the first five years of operation, resulting in three new substations and approximately 50 percent extra capacity for electrical supply.

In order to meet current system demands (electric and steam) the former FWA power plant, which is now owned by Doyon, burns approximately 220,000 tons of coal per year (three year rolling average). The power plant is permitted to burn 336,000 tons, resulting in a substantial 52 percent available headspace on their permitted amount. All construction in this proposed action will be connected to this existing system.

FRA is provided electric power by a regulated public utility, Anchorage Municipal Light and Power. Natural Gas at FRA is provided by Enstar Natural Gas Company, also a regulated public utility. All utility infrastructure on the installation is now owned and managed by Doyon.

The proposed action does not call for any construction at DTA.

Based on the new UP paradigm, and the substantial improvements already completed and scheduled to be completed over the next two years, it is determined that the current energy supply and distribution infrastructure for electric power, steam, and natural gas has sufficient capacity to support the additional Soldiers and their Families, to include all new construction, at FWA and FRA. Therefore the anticipated impacts to Energy at each installation for all activity areas are none to minor.

3.3.20 Environmental Justice and Protection of Children

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, requires the identification and assessment of environmental health and safety risks that may disproportionately affect children. In accordance with the mandates of EO 13045, training plans and construction site maps for projects undertaken for the Proposed Action have been reviewed to ensure no dangerous or hazardous activities occur near schools or childcare facilities. There are no foreseeable environmental health and safety risks for children resulting from the Proposed Action.

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs each federal agency to identify and address any disproportionately high and adverse environmental effects of its programs, policies, and activities on minority populations and low-income populations. There are no foreseeable environmental justice impacts resulting from the Proposed Action.

3.4 Impact Assessment of the No Action Alternative

Under the No Action Alternative, Army installations in Alaska would not provide necessary facilities and services to accommodate the growth prescribed in the GTA Pacific ROD, and therefore could not support additional Soldiers or their Families. No increase in facilities, ranges, or training would take place beyond the existing baseline condition. Selection of the No Action Alternative would result in a continuation of the current use of FRA, FWA, and DTA, and therefore no additional impacts, positive or negative, would occur.

4.0 CUMULATIVE EFFECTS

4.1 Introduction

CEQ regulations that implement NEPA procedural provisions define cumulative effects as "the impact on the environment which result from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions." Chapter 4 of this EA evaluates the potential cumulative impacts of the Proposed Action in accordance with NEPA (42 USC 4321-4347), CEQ regulation (40 CFR Parts 1500-1508), Army Regulation (32 CFR part 651), and CEQ guidelines for conducting cumulative impact analysis (*Considering Cumulative Effects under the National Environmental Policy Act*, Executive Office of the President, January, 1997).

4.2 Cumulative Impact Analysis Methodology

The cumulative impact analyses for the preferred alternative focuses on impacts on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The no action alternative represents the existing baseline after all planned and previously analyzed actions have been implemented.

Past and present actions are accounted for in the description of the affected environment for each resource. Past, present, and reasonably foreseeable future actions were identified as contributors to cumulative affects in the USAG FRA and USAG FWA regions of influence. Past and present actions include the construction of projects identified in the 2004 EIS for Transformation of U.S. Army Alaska; the 2005 Final Programmatic EA for Modularization of Army National Guard Forces; the Final BAX/CACTF EIS; the Airborne BCT EA; the 2007 Final EA for Construction and Operation of a Railhead Facility and Truck Loading Complex, FWA, Alaska; and the 2008 Draft EA for DTA East Mobility and Maneuver Enhancement, FWA, Alaska. Future actions include south central Alaska (FRA) and interior Alaska (FWA, TFTA, DTA, and YTA). This cumulative impact analysis also considers past and present, and reasonably foreseeable future actions that occur as part of other federal, state, and local projects outside of army actions. Later in this section is a detailed list of each project along with a project description, project location, and the proponent for each action. Table 4.2-1 below summarizes the cumulative impacts of the two alternatives at FRA, FWA, and DTA. The ratings take into account the cumulative effects if the current baseline as well as the additional impacts of this proposed action and reasonably foreseeable actions.

Table 4.2-1. Cumulative Effects for Stationing Scenarios in Alaska

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VEC	Alt. 1 – Preferred Alternative			Alt. 2 – No Action		
	FRA	FWA*	DTA	FRA	FWA*	DTA
Air Quality	⦸	⦸	○	⊙	⊙	○
Airspace	⊙	⊙	⊙	⊙	⊙	⊙
Cultural Resources	⊙	⊙	⊙	⊙	⊙	⊙

Noise	⊙	⊙	○	⊙	⊙	○
Soil Resources	⊘	⊘	⊘	⊙	⊙	⊙
Biological Resources	⊘	⊙	⊙	⊙	⊙	⊙
Wetlands	⊙	⊘	⊙	⊙	⊙	⊙
Vegetation	⊙	⊙	⊙	⊙	⊙	⊙
Wildland Fire	⊙	⊙	⊙	⊙	⊙	⊙
Water Resources	⊙	⊙	○	⊙	⊙	○
Facilities	⊙	⊘	○	⊙	⊙	○
Energy Demand / Energy Generation	⊙	⊘	○	⊙	⊙	○
Land Use Conflict / Compatibility	⊙	⊘	○	⊙	⊙	○
Hazardous Material / Hazardous Waste	⊙	⊘	○	⊙	⊙	○
Traffic and Transportation	⊙	⊙	⊙	⊙	⊙	○
Socioeconomics	+ ⊙	+ ⊙	○	+ ⊙	+ ⊙	+
Subsistence	⊙	⊙	⊙	⊙	⊙	⊙
Public Access and Recreation and Human Health and Safety	⊘	⊙	⊙	⊙	⊙	⊙
Invasive Species	⊙	⊙	⊘	⊙	⊙	⊙
Environmental Justice	○	○	○	○	○	○

⊗ = Significant
⊘ = Moderate
⊙ = Minor
○ = No Impact

\+ = Beneficial Impact
N/A = Not Applicable
* = Includes impacts to YTA and TFTA.

The Army is currently preparing an environmental impact statement to assess the potential impacts associated with the resumption of year-round live-fire weapons training at FRA's Eagle River Flats impact area. The successful cleanup of white-phosphorus-contaminated sediment over the last ten years has resulted in a potential opportunity for the Army to resume year-round use of the impact area. This area is currently available only when ice cover is of sufficient thickness to prevent sediment disturbance resulting from use of high explosive mortar or artillery munitions.

The Army is also currently preparing a programmatic environmental assessment pertaining to its range lands throughout Alaska. This planning document is still in the early stage of development. It this time, its analysis focuses on the following: assessing the impacts of some small range projects scattered throughout FRA, FWA, and DTA land; closely examining the environmental conditions in and surrounding the Army's existing SACs in Alaska; and development to additional SOPs and BMPs to guide the development of future range projects.

In south-central Alaska, about 11 past, present, and reasonably foreseeable future actions were identified for the FRA area. They include management of Nike Site Summit, USAG FRA Mission-Essential Projects, and other military and non-military projects:

- Cantonment Area Projects at Fort Richardson
- Rapid Deployment Facility (completed)
- Ammunition Supply Point Upgrade (completed)
- Whole Barracks Renewal (completed)
- Stationing of the Airborne Brigade Combat Team (ABCT) at FRA
- Mission Operations on Urbanized Terrain (MOUT) (Completed)
- Sniper Range (completed)
- Multi-purpose Training Range (completed)
- U.S. Air Force (Elmendorf AFB)
- Year-round training at Eagle River Flats (in progress)

A variety of past, present, and reasonably foreseeable future actions were also identified for interior Alaska (FWA, DTA, TFTA, and YTA). They include USAG FWA mission-essential projects:

- Cantonment Construction at Fort Wainwright (Completed)
- Mission Support Training Facility
- Library/MOS/Education Center
- Barracks Complex
- Ammunition Supply Point Upgrade
- Alert Holding and Pallet Facilities
- Stationing of the Stryker Brigade Combat Team (SBCT) at FWA (Completed)
- Range Upgrade and Expansion at FWA (completed)
- Collective Training Range at DTA (completed)
- Cold Regions Test Center Automotive Test Complex at DTA (completed)
- Space and Missile Defense System (completed)
- U.S. Air Force (Eielson AFB) aircraft stationing actions (completed)
- ITAM Projects
- FWA Housing Projects
- Aviation Task Force Construction (proposed)

- Proposed Addition of OH-58D Kiowa Warrior Helicopters
- Range Operations Center
- C-17 Landing Strip
- Direct Fire Range
- USAF Training – Airspace
- Pacific Alaska Range Complex
- DTA East Mobility and Maneuver Enhancement Projects
- DTA West Winter Trail Improvement
- RCI
- Utilities Privatization
- Installation Boundary Fence Project
- Allen Army Airfield Improvements

Other future non-military activities and projects were also identified for both regions of Alaska:

- Community Development at Fairbanks, North Pole, and Delta Junction
- Alaska Railroad Expansion
- ARRC Fort Wainwright Realignment Project
- Tanana River Bridge
- Bureau of Land Management (BLM) Alaska Fire Service Campus Upgrades
- Natural Gas Pipeline
- Richardson Highway Upgrade
- Richardson and Alaska Highways
- Delta Agricultural Project
- Multiple use land management under the Tanana Valley Management Plan
- Subsistence on public and private lands
- Recreation on public and private lands
- Knik Arm Bridge

Some of these actions are ongoing projects that would continue into the future, while others would be expected to be complete in the reasonably foreseeable future. The following sections describe the potential cumulative impacts to each valued environmental component if the preferred alternative were implemented.

4.2.1 Air Quality

The city of Anchorage is currently classified as a maintenance area for CO, and the Eagle River area outside of Anchorage is classified as a non-attainment area for PM10. (Eagle River has not had a NAAQS violation for PM10 since 1987 and is currently working to be reclassified as an maintenance area) While FRA does not lie within either of these areas, both criteria pollutants are generated in minor quantities from activities on FRA, which potentially contributes to the primary issues of regional concern in which FRA resides.

In 2004, Anchorage was reclassified as a maintenance area for CO after being considered a serious non-attainment area for more than 25 years. As a result of a variety of efforts, CO concentrations in Anchorage have dropped by approximately 60 percent since the peak levels experienced in the early to mid-1980's. Anchorage has not had an exceedance since 1996. Anchorage is now considered an attainment area for CO, and has set a plan in place to remain

in compliance until 2023. Studies have shown that there is very little likelihood that Anchorage will exceed the NAAQS for CO in the foreseeable future. (Anchorage DHHS, Feb 2008)

The largest source of CO emissions in the Anchorage area is motor vehicles (83.6 percent), followed by aircraft (8.6 percent). Higher levels of CO generally occur on weekdays when vehicle traffic is the heaviest. Morning starts of vehicles, or "cold starts," are believed to be the leading cause of higher CO levels during winter months (Municipality of Anchorage 1999). Vehicle emissions have decreased significantly in recent decades due to the requirement for emission control equipment on all new vehicles manufactured since 1981. In 1995, Anchorage adopted an Air Quality Control Plan to reduce CO emissions by using oxygenated fuels, increasing vehicle inspection requirements, and implementing a ride-sharing program. The City of Anchorage would have to factor in the small increase in POV usage resulting from the stationing of additional Soldiers and Family members. Existing local and state plans, programs, and proactive measures, such as engine block heaters located throughout the city, will continue to be employed as control mechanisms for CO.

PM10 is high in Eagle River due to the number of unpaved roads. Over 90 percent of the particulate matter in the area is generated by travel on paved and unpaved roads. Only 10 percent of the fugitive emissions result from industrial sources, wood stoves, or automobile exhaust (Municipality of Anchorage 1999). In 1987, a plan was implemented to pave or surface gravel dirt roads in the area. The state of Alaska modified winter road maintenance practices in the Anchorage and Eagle River areas to reduce the amount of traction sand on the road. Traction sand is believed to contribute to higher PM10 levels. No exceedances of the PM10 standard have occurred since 1987 (Municipality of Anchorage 1999).

Major stationary emission sources in the area include power plants, standby power generating facilities, exhaust emissions from vehicle maintenance shops, small space heaters, and dry cleaning and petroleum storage facilities. Cumulative air quality impacts at FRA would occur from cantonment construction projects within the same geographic area and from motor vehicles. Cumulative impacts to air quality would also be expected from maneuver training. These impacts include the increase in vehicle emissions on ranges, and an increase in dust and opacity over current conditions. Regionally, however, the effects of military training are largely localized to the training area, are of short duration, and should produce no regional air quality issues.

A portion of the FNSB, which includes the FWA cantonment area, was formerly designated as a non-attainment area for carbon monoxide (CO); currently this area is classified as a maintenance area. Cumulative air quality impacts at FWA would occur from cantonment construction projects within the same geographic area and from motor vehicles. Cumulative impacts to air quality would also be expected from maneuver training at TFTA, YTA, and DTA. These impacts include the increase in vehicle emissions on ranges, and an increase in dust and opacity. Regionally, the effect of military training is largely localized to the training area and should produce no regional air quality issues.

Estimates of baseline air emissions from aircraft operations were calculated for Eielson AFB. Pollutant concentrations from aircraft operations would constitute a small percentage of the NAAQS, thus, no appreciable effects to air quality would result.

Construction of the Cold Regions Test Center Automotive Test Complex would result in temporary release of air pollutants from the combustion of fuel and from dust. Use of test facility

buildings and testing of vehicles on the paved track would also result in increased emissions; however, the need for additional air quality permits is not expected.

The addition of new permanent, stationary air emission sources by the Space and Missile Defense System on the Fort Greely cantonment area would affect the overall ambient air quality within the airshed. This project has been issued a construction permit by the ADEC, and construction is underway. The air quality effects may increase if the test bed evolves into a full missile defense system.

Air quality in the DTA region meets current NAAQS and is assumed to be at near baseline conditions due to the low density of human development and emission sources. In addition to the NAAQS, the DTA is in relatively close proximity to Denali National Park and any potential impacts under the Regional Haze Rule, which regulates impacts to visibility and prohibits impacts to Class I areas, must be considered. Ice fog forms under the same conditions at this location as in FWA, but the durations of the episodes at DTA are generally shorter. Temperature inversions do occur, but due to the limited number of emission sources, the inversions are not likely to cause CO levels to exceed the NAAQS.

Fugitive dust is typically generated from industrial activities such as bulk material handling, storage, and construction projects. The Delta River and Jarvis Creek are large sources of fugitive dust during wind events in the summer, and sometimes during the winter. Heavy machinery, construction, and vehicular traffic on unpaved roads can generate fugitive dust. These events are also usually of short duration and produce to significant affects to regional air quality.

Major emission sources at DTA include vehicles and the burning of fuels, including wood, gasoline, diesel oil, and fuel oil. Fugitive dust, forest fire smoke, and the occasional use of helicopters and aircraft are also sources of emissions at DTA. Currently planned DTA mission-essential projects would contribute only short-term and relatively small cumulative effects to air quality and would produce no long term impacts on regional air quality.

Mission-essential construction projects planned for DTA are limited to the construction of a BAX/CACTF, which would only result in the generation of temporary emissions. Air quality impacts from the BAX/CACTF are essentially negligible.

The primary source of impaired visibility at DTA is local wildfires and naturally-generated fugitive dust during high winds (Army 2006). Emissions have been modeled to ensure they produce no significant regional air issues including visibility.

The Trans-Alaska Pipeline (TAPS) Renewal Project could affect ambient air quality. The maximum estimated concentrations of criteria air pollutants associated with the TAPS activities have been found to be below applicable NAAQS. Hazardous Air Pollutants (HAP) concentrations would contribute little to the background concentrations already found in residential areas. There are no predicted adverse effects to visibility expected to occur because of TAPS. Some of the projects identified as contributing to cumulative impacts would occur in or adjacent to areas where wildland fires could occur.

The cumulative military projects are expected to contain mitigation measures to minimize potential environmental impacts involving wildfires that can also contribute to air quality impacts. The FRA, FWA or Fort Greely Fire Department provides the initial response for wildfire suppression. Cumulative fire management impacts to the region would mainly result from the

addition of new firing ranges, and expansion of existing or development of new maneuver areas, and population growth in the forested areas bordering installations.

Stationing additional CS, CSS, or Fires Brigade units in Alaska would produce greater emissions of carbon dioxide and other greenhouse gasses from both the use of explosives and the operation of vehicle engines and maintenance and repair facilities. Dust generated from travel on unpaved roads would cause temporary and spatially isolated impacts. Fugitive dust may be mitigated through the use of best management practices during construction activities and training convoys. In addition to addressing fugitive dust, the Army is proactively working to reduce its overall consumption of energy and fossil fuels at all of its installations. As a result, the Army anticipates the cumulative effect of military and nonmilitary actions to be less than significant.

4.2.2 Airspace Resources

Increasing aircraft operations may create cumulative affects to airspace under these stationing scenarios, especially under the Fires Brigade stationing scenario. Reasonably foreseeable future actions identified near FRA, FWA, and DTA may cause direct and indirect effects that could overlap in time and space with the affects of this alternative. Upgrades and expansion at Elmendorf AFB near FRA, Eilson AFB near FWA, and at DTA may result in impacts that could also cumulatively contribute to airspace effects. Existing procedures established for managing restricted airspace would not require changes in connection with the training and support operations connected with DTA's BAX/CACTF ranges, including Unmanned Aerial Vehicle operations. No additional restricted airspace areas are required to support these range operations.

If constructed at DTA as planned, the C-17 landing strip would increase the number of flights in DTA's airspace. In addition, upgrades and expansions are expected for Elmendorf and Eielson AFBs. Depending upon the specifics of these upgrades and expansions, they could cause cumulative impacts when their effects are combined with the airspace impacts of this alternative. Appropriate coordination and planning among the Air Force, Army, and Federal Aviation Administration is expected to keep any cumulative effects to a level that is less than significant.

4.2.3 Cultural Resources

Historic properties and other cultural resources can be impacted by both military and non-military activities, which can lead to cumulative impacts. The nature of many of these cultural resources can make many impacts potentially irreversible or irretrievable. Some of the most common impacts include direct impacts caused by vehicular traffic over a site, construction activities (either new construction or demolition), visual impacts.

Many of the past activities on USARAK lands, such as range construction and modification, creation of roads and trails, and maneuver training, that may have impacted cultural resources at both FRA and FWA occurred prior to current laws that are in place to protect these resources. It is necessary now however to evaluate activities and the effects they have as a whole.

Given the low number of prehistoric sites found on FRA, this impact has probably been minor. Unsympathetic uses of the buildings and structures that make up the unlisted eligible historic district that encompasses part of the FRA cantonment area would also have impacted cultural resources.

Cumulative effects at FWA's main post are anticipated under all stationing scenarios to be significant but mitigable to less than significant. The Ladd Field National Historic Landmark and the Ladd Air Force Base Cold War District are located on the main post of FWA. Individual construction projects have the potential to impact cultural resources on the installation. These impacts can be caused by construction, modification, or demolition. As the installation continues to coordinate with the State Historic Preservation Office (SHPO), NPS and other stakeholders, these potential effects will be mitigated to less than significant.

Continued archaeological and cultural resource surveys add to the capabilities of USAG FRA and USAG FWA 's successful land management. As projects and training scenarios are proposed, known sites can be protected by avoidance and for sites that can not be avoided consultation with stakeholders can be entered into for data recovery or mitigation to mitigate the potential cultural resource impacts. There is the possibility that unknown cultural resources may be encountered and a strong outreach program is necessary to teach the proper etiquette for situations that arise the in field. In the case of inadvertent discoveries activities are stopped and the Cultural Resource Manager is immediately notified.

Impacts from Eielson or Elmendorf AFB, if any, will probably have already occurred with construction of those installations. Eielson AFB is located between the Yukon-Tanana Uplands and Tanana River, and it is possible that the site may contain or may have contained prehistoric cultural sites; however, most of Eielson is considered wetlands and are less likely to contain such sites. Similarly, development of the Space and Missile Defense system also had the potential to impact undocumented cultural resources.

Past non-military activities such as the 60,000 acre Delta Agricultural Demonstration project that occurred from the late 1970's to the 1980's is likely to have damaged or destroyed cultural resources. Activities such as oil and natural gas exploration and extraction, development of transportation and communication corridors, timber harvesting and mining, and the growth and development of communities, would cumulatively impact the regional cultural resource base. For example, regular maintenance along the TAPS may impact cultural resources. Highway development of the Richardson and Alaska Highways, and construction of 80 miles of new railroad line may also lead to regional effects to cultural resources. Current recreational activities associated with off-road recreational vehicles are also likely to have direct effects to documented and undocumented resources.

4.2.4 Noise

Cumulative noise impacts would result from both non-military and military actions in the area. Noise contributed by the local community includes transportation, construction, and recreation activities in the vicinity of Army installations.

Noise caused by current and future military training includes firing and detonation of munitions, low-flying aircraft, construction activities and general troop maneuvers (both mechanized and pedestrian). Numerous studies have indicated that the introduction of noise into previously undisturbed areas can initially cause behavioral changes and stress in some species of wildlife. However, over an extended period of time, these effects wane as wildlife becomes accustomed to the recurring disturbance. Observations of wildlife support this general statement that noise is of little significance. Impacts from noise on wildlife do not appear to adversely affect wildlife populations (CEMML 2004 and 2007).

Construction of mission-essential projects in the FRA and FWA cantonment areas would result in increased noise levels, but the effects would be short-term and highly localized. These projects include a variety of structures to support the expansion of the Airborne Task Force to an Airborne Brigade Combat Team and replacing and upgrading Family housing. There would be no long-term noise effects from these projects.

Construction of mission-essential projects to support changes in training at FRA and FWA would result in temporary increased noise levels and potentially add to increased cumulative effects. These projects include the MOUT complex, the sniper range, the multipurpose training range and the Battlefield Area Complex. The proposed expansion of winter-only weapons proficiency training at Eagle River Flats to year-round training could increase the amount annual noise effects. The growth and expansion of the Aviation Task Force will include temporary construction effects and increased helicopter training related noise. Three anticipated projects at DTA (namely the drop-zone expansion, trail network upgrades and hardening bivouac sites) would generate short-term and localized noise effects.

Under fire brigade stationing scenarios at both FRA and FWA, firing activities would be conducted at DTA and limited training would add to cumulative impacts of noise in the region of influence surrounding FRA and FWA.

Activities by the U.S. Air Force and the Alaska Air National Guard contribute to adverse noise effects in the Anchorage area. For instance, Elmendorf AFB receives off-post noise complaints (U.S. Air Force 1995). However, the military has taken steps to ease the impact (e.g., flight scheduling) (U.S. Air Force 1995).

Non-military noise generating activities would result from proposed projects including the Alaska Railroad expansion (extension of a passenger and freight line into Delta Junction), the Tanana River Bridge replacement and the Alaska-Richardson Highway expansion. Noise effects would be temporary during construction, with the potential for some infrequent increase in railroad and train noise.

Overall, the cumulative noise effects for stationing additional Soldiers at USARAK Garrisons would be less than significant to significant but mitigable

4.2.5 Soil Erosion

Soldier growth is likely to contribute to cumulative impacts from soil erosion near Fairbanks and Delta Junction, which includes DTA, YTA, and TFTA. The major historic influences on soil erosion in the area include the disturbance of soils, modification of slopes and drainage features, and loss or disturbance of vegetation due to agricultural conversion, military activities, fires, roads, modification of slopes and drainage features, and other development. The historic levels of soil erosion and/or loss experienced on Army lands has been curbed in recent years by implementation of the INRMP and by better management of disturbed lands and application of BMPs. However, activities that disturb or remove vegetative cover are presently occurring and will likely occur in the reasonably foreseeable future, which will continue to result in greater soil erosion and loss. Use of the training ranges will likely result in continued enhanced wind soil erosion, as well as compaction, rutting, and damage to permafrost in some areas. These effects are expected to be locally significant but mitigable. However, at the regional level, the effects are not expected to be significant compared to natural rates of erosion and the cumulative impacts caused by other activities in the region

FRA has recently experience impacts stemming from previous stationing actions and the construction of several new buildings and infrastructure, including barracks, brigade, battalion, and company headquarters; vehicle maintenance shop, dining facility, classroom, medical clinic, and heavy drop rigging facility. Additionally construction includes new ranges at FRA, including the MOUT facilities, and Multi-Purpose Training Range. Although Eagle River Flats' environmental conditions have improved in the past decade, the shift to conduct training activities year-round will likely cause increased erosion and soil loss in that region. However, these impacts can be managed by diligent monitoring of the impacts and the modification of training activities as needed to prevent irreparable degradation of the soils.

Contributing to cumulative impacts at FWA are the recent construction of several new buildings and infrastructure, including barracks, a Soldier community building, classrooms, library, Alert Holding and Pallet Facility, and two battalion headquarters buildings. These impacts would mainly be short in duration during the construction of the facilities. Additionally, the construction of new ranges at FWA, including MOUT facilities and a Sniper Range, contributed to short term soil loss on those sites.

Soil resources in interior Alaska are likely to be impacted from other military activities associated with USARAK, U.S. Air Force, Cold Regions Test Center, and the Space and Missile Defense System. These activities have the potential to contribute to increased soil erosion, compaction, and rutting, as well as damage to permafrost. USARAK mission-essential range improvement and upgrade projects could cause negative impacts to soils at DTA (CEMML 2004). Current USARAK maneuver training has involved stream crossings on DTA (CEMML 2004). DTA river crossing training occurs in winter, which prevents direct sedimentation impacts due to streambed disturbance. However, erosion at the crossing points may lead to soil erosion and subsequent sedimentation through runoff, as well as damage to permafrost. DTA East Mobility and Maneuver Enhancement projects would help minimize some of the erosion impacts through the installation of an all-season crossing of Jarvis Creek, the hardening of bivouac sites, and upgrading of networked trails and firebreaks to provide sustainable trail and area use. In addition, weapons training involving explosive munitions may also have had impacts to soils through ordnance impact and residual chemical contamination (CEMML 2004). Most other planned military projects will occur on already disturbed areas, such as the cantonment area or impact areas. These projects are sufficiently separated in time and location from routine training activities to prevent additive or synergistic impacts to soil and the construction of the BAX and CACTF at DTA,

Non-military infrastructure projects, including the Alaska, Richardson, and Parks Highways, the TAPS and Northern Intertie project, and the Alaska Railroad Expansion, could contribute to surface runoff and subsequent soil erosion and sedimentation. Future permafrost melting from road construction and use is expected in the region. Impacts would be localized and not result in synergistic regional effects. Future natural gas pipeline construction would disturb area soil and permafrost. Other gas and oil exploration projects would also negatively impact soil resources. Additionally, some resource extraction, such as timber harvesting and mining, can also contribute to increased soil erosion and subsequent sedimentation. Fort Knox, True North, and Pogo gold mines all have an increased potential to disturb local surface soils.

Community development can also affect soil resources. Community growth in the Delta Junction and Big Delta areas could lead to increased overland water runoff soil erosion and subsequent sedimentation from areas downflow of the impervious surfaces. These impacts are considered long-term due to the ongoing nature of such impacts. Use of ORRVs has impacted area soils and permafrost in the form of erosion and rutting.

Soil resources management on FRA is achieved through prevention activities and actual restoration of disturbed areas by implementing BMPs in agreement with industry standard installation storm water prevention techniques. Disturbed areas are restored by both erosion control and streambank stabilization activities, which control installation sources of dust, runoff, silt, and erosion debris to prevent damage to land, water, and air resources; equipment; and facilities (including those on adjacent properties). Relevant BMPs used at FRA are detailed in the INRMP (USAG Alaska 2007) and in the ITAM Five Year Management Plan (USAG Alaska 2005).

Overall, cumulative impacts to soils associated with Army growth are expected to be moderate.

4.2.6 Biological Resources

The projects identified as contributing to cumulative impacts would impact biological resources. The cumulative projects are expected to contain mitigation measures and SOPs to minimize potential biological impacts. In light of historic, ongoing, and reasonably foreseeable future actions, the cumulative impacts involving vegetation, threatened and endangered species, and wildlife and habitat are expected to be less than significant.

Prior activities on Army lands have impacted vegetation, primarily through maneuver training exercises, and construction of ranges and cantonment buildings. Total cantonment area acreage includes approximately 10,230 acres of USARAK Garrison lands. Vegetative structure within the cantonment has been heavily altered to accommodate construction of buildings, roads, and other infrastructure. In addition, training ranges on interior Army lands occupy approximately 6,500 acres, which require ongoing vegetative modification. Drop zones and assault strips occupy approximately 4,900 acres on interior lands. These areas must remain free of high-standing vegetation, which prevents the areas from progressing through successive stages.

Training requirements for proposed Army growth stationing, in conjunction with training identified in the 2004 Transformation document (SBCT), and Airborne Task Force (Airborne BCT) training would increase wear on vegetation; training noise exposure to wildlife.

USAG FWA and USAG FRA ITAM programs institute standard operating procedures and best management practices for 23 FRA projects, 37 FWA, and 35 DTA projects. The ITAM program is responsible for keeping training lands in a consistent and natural state. Impacts to vegetation from training, for example, are not considered serious due to guidance for on-road/off-road maneuver, travel, the implementation of BMPs for minimization of soil (and thus vegetation) erosion, and guidance that covers winter training such as 6 inches of snow-pack in maneuver areas what help insulate soils and vegetation against considerable and irreversible damage.

Wildlife on Army lands in Alaska has been exposed to military activity for decades. USARAK Garrison mission-essential construction projects planned may affect certain individuals or groups of urban wildlife, but probably would not affect any priority species at the population level. Likewise, the activities planned would not impact priority species. There are no threatened or endangered species residing on Army lands in Alaska. Even so, increased exposure to live-fire training and maneuver noise may disturb the reproductive (breeding and calving), foraging, and nesting behaviors of several varieties of wildlife. Many animal species are likely to habituate to the increase in training disruption, as these impacts have been incremental and most activities do not occur on a daily basis. Many animals are habituated to

the human-dominated environment; and recent NEPA documentation indicates that training levels are not detrimental to overall species success. Aircraft overflights may be more disruptive to sensitive noise receptors, however, these noise types are intermittent and temporary.

Of the priority species, range improvement projects at FWA and DTA would not impact grizzly bear habitat, but could compromise about one percent of the preferred habitats of wolverines, wolves, and olive-sided flycatchers. Although one to two percent of current moose habitat could be impacted, range construction could create additional habitat. Range development could compromise approximately three percent of trumpeter swan habitat in these areas.

The range improvement projects and subsequent artillery firing at DTA could negatively affect bison that migrate through the battle area complex area, but maintenance of the battle area complex in an early seral state may also benefit bison. The noise could impact waterfowl and other birds in nearby ponds, but the effect of such training is not known. Development and use of the collective training range could affect portions of grizzly bear and sandhill crane habitat in North Texas Range. This area is already used for weapons training. No additional impacts are expected from use of this range to grizzly bears, sandhill cranes, or other species of wildlife. Ongoing USARAK Garrison activities could potentially negatively impact fisheries primarily due to habitat degradation or loss of water quality. Overall, cumulative impacts to general wildlife and habitat would be less than significant.

The actions associated with this SPEIS are likely mitigable with continued implementation of the INRMP, use of BMPs, and institutional programs such as ITAM. Range improvement projects would occur within the footprint of existing ranges. No new range areas are anticipated. Training that would occur in these areas are considered incremental over existing training conditions. No new weapons systems would be introduced under any of these stationing scenarios.

Range and cantonment expansion/modernization under the proposed stationing scenarios, in conjunction with construction of facilities and ranges in support of Transformation of the Airborne Task Force and the SBCT would affect vegetation and wildlife resources, the impacts to the natural environment is anticipated to be less than significant

The increase in construction projects will have little to no impact on subsistence and recreational hunters as well as recreational outdoor activities for the public. Certain additional areas may be designated off limits due to safety issues and military regulations.

Some of the projects contributing to cumulative impacts would occur in or adjacent to areas where wildland fires could occur. Military projects are expected to contain mitigation measures to minimize potential environmental impacts involving wildfires. The importance of fire for the Alaskan interior ecosystems is recognized but due to safety and other concerns military fires are usually quickly controlled. The FRA, FWA, or Fort Greely Fire Department provides the initial response for wildfire suppression, which has traditionally been confined to areas behind the SAC. Cumulative fire management impacts to the region would mainly result from the addition of new firing ranges, and expansion of existing or development of new maneuver areas, and population growth in the forested areas bordering installations. The proposed Eagle River Flats action would allow units to train year round at FRA and receive necessary weapons proficiency training. This proposed action is not expected to have an impact on the life cycles of wildlife.

There will be some negative additive wildfire impacts expected from the USARAK Garrison mission-essential projects planned for both FRA and FWA. At FRA, the multi-purpose training range, infantry squad battle course, infantry platoon battle course locations were all assessed as wildfire risks. At FWA, the multi-purpose training range and infantry squad battle course, which would be located between Main Post and the Tanana River, are described as having risk due to the availability of fuels and past fire behavior. The ranges are expected to represent an additive cumulative impact to fire management in the area.

In June 2006, the Final EIS was released for the BAX/CACTF. The selected location for the BAX and CACTF facilities was the Eddy Drop Zone in DTA. The SBCT currently stationed at FWA will train at the DTA BAX and CACTF once they are operational.

Overall, stationing of a Fires Brigade, or other CS or CSS units at FRA or FWA (with Fires Brigade live-fire ordnance training at DTA) would contribute significantly to cumulative wildfire risk to the region. High-risk areas would be treated to reduce the spread of fire, and training would follow established training protocols. Live-fire training could potentially increase the frequency of wildfires. Several fire mitigation measures are being implemented throughout the Garrison on existing ranges and would be continued under all stationing scenarios.

The potential Alaska railroad expansion project, which includes construction of approximately 80 miles of new rail line that will connect the Eielson Branch line and the Chena River Overflow Structure and extend to Delta Junction, is anticipated to have little effect on migrating wildlife.

Non-military actions that would have cumulative effects on species and vegetation management would be continued development and expansion due to human population increases. As the boroughs surrounding FRA, FWA, and DTA continue to grow, wildlife species may be affected through a change in migration patterns, the reduction of quality habitat (which may impact species health and survival), and increased interaction and habituation to anthropogenic activity (for example, more human encounters with Black bears and Grizzly bears). These impacts are not expected to be significant. Due to the vast tracks of land in Alaska, there is likely adequate habitat available to maintain species success. Continued subsistence and hunting activities may have beneficial influences on species management.

4.2.7 Wetlands

Wetland permitting, which is regulated by the USACE, would be required if construction were to impact wetlands. U.S. Army range improvement and upgrade projects could cause negative impacts to wetlands at DTA, FWA, and/or FRA. In light of historic, ongoing, and reasonably foreseeable future actions, cumulative impacts to wetlands could be less than significant to significant depending on the specific project and time of year. In accordance with EO 11990, installations are required to avoid impacts of destruction or modifications of wetlands unless there is no practicable alternative and the proposed action includes measures to minimize harm. The Army continues to apply for and operate under permits for actions taken by the garrison that may impact wetlands on Army lands.

Cantonment projects at FWA are sited in previously disturbed, non-wetland areas. Range expansion projects in the small arms training complex could potentially impact wetland areas or surface waters. The removal of vegetation from clearing activities could result in wetland degradation due to increased sediment loading during rain events while construction is taking place. Established procedures and BMPs will be followed to minimize impacts.

The effects from maneuver training would be less harmful in winter, due to the frozen nature of the wetlands, and the snowpack that protects vegetation.

The proposed Eagle River Flats action would allow units to train year round at FRA and receive necessary weapons proficiency training. Direct and indirect effects could include decreased volume of water flowing to wetlands during low flow seasons; loss of stream bank stability, loss of organic matter and habitat that would result in lower productivity.

With proper planning, the installations would site ranges and their firing points away from documented wetland areas to avoid potential impacts. Limited impacts to wetlands would be anticipated, however, impacts could occur on the range area in the form of munitions constituent loading and sedimentation in those located on Army firing ranges. DTA specifically, could experience increased sediment loading around the BAX training site when wet conditions and off-road maneuver would contribute to sediment loading of surface waters. Training may be averted to TFTA or other areas where more maneuver land would be available (due to a lower presence of wetlands). The availability of training land increases during the wintertime because everything freezes and land that was once impassible, becomes easily traversed.

4.2.8 Water Resources

USARAK unit maneuver training has involved stream crossings on YTA, DTA, and TFTA. TFTA training occurs mainly in winter, which helps to prevent direct sedimentation impacts due to streambed disturbance, direct impacts to permafrost, and other protective measures. However, erosion at the crossing points may have led to sedimentation through runoff. In addition, weapons training involving explosive munitions may also have had impacts to surface water quality. However, water quality tests have shown no detectable quantities of munitions constituents in recent studies. This indicates that any impacts would be ephemeral at the point and time of impact. Localized contamination from inadvertent chemical releases, such as petroleum, organics, and lubricants, may also have occurred. At DTA, a proposed all-season crossing of Jarvis Creek would be installed. While not part of this proposed action, this structure would help minimize the sedimentation that may occur during vehicle crossings.

Past impacts to groundwater on Army lands have occurred due to weapons training. Explosive munitions training on the TFTA and YTA impact areas has led to the presence of unexploded ordnance on USAG FWA impact areas. Chemical constituents from unexploded ordnance have the potential to leach through the soil into the aquifer, thereby affecting groundwater quality. However, studies (Houston 2002; Ferrick et al. 2001) indicate that ambient conditions sharply curtail the probability of groundwater contamination from munitions constituents.

Water resources in interior Alaska are likely to be impacted from military activities including those conducted by USAG FWA, USAG FRA, U.S. Air Force, Cold Regions Test Center, and the Space and Missile Defense System. These activities have the potential to alter surface water quality. The Cold Regions Test Center Automotive Test Complex would be designed to avoid impacts to Jarvis Creek and its floodplain. In addition, some resource extraction, such as timber harvesting and mining, can alter surface flow or increase sedimentation. These impacts are generally short-term.

Construction by any of these can alter groundwater recharge regimes, and such impacts are local and long-term. In addition, disturbance and loss of permafrost can also alter local groundwater flow by increasing connectivity to lower groundwater sources. Military activities also have the potential to affect groundwater quality through munitions practice. These impacts

can be long-term. The development and use of the Cold Regions Test Center Automotive Test Complex would not impact groundwater quality, although two wells (approximately 400 feet deep each) would be drilled.

Infrastructure projects, including the Alaska, Richardson, and Parks Highways and the Northern Intertie project, can affect surface flow by channelizing flow patterns or altering surface runoff rates by installing impermeable surfaces such as roadways. They can affect groundwater flow long-term by altering permafrost or altering surface recharge rates. The Tanana River Bridge replacement effort would likely have a short term affect on water quality when the supporting structures are installed during the construction phase of the project.

Oil and gas exploration, extraction, transport, and mining and timber activities also have long and short-term impacts to groundwater resources. The TAPS and Pogo gold mines both have an increased potential to affect local surface and groundwater quality and can alter groundwater flow and recharge. Some management practices do improve surface waters, such as managing for fish and game, or for public recreation.

Overall, cumulative impacts to water resources associated with Army growth at USARAK Garrisons would be expected to be significant but mitigable to less than significant.

4.2.9 Facilities

Army growth at USAG FRA and USAG FWA would result in less than significant impacts to facilities, including public services, infrastructure, and utilities. Continued impacts to facilities are expected in the areas surrounding USARAK installations as the result of projected population growth and development. Ongoing USARAK Garrison activities, including training and range construction and expansion, are expected to continue. A variety of capital improvement projects are planned or currently underway on installation cantonment areas. In addition, future range construction and improvement projects are planned on USARAK lands.

Population growth due to non-military activities is anticipated to influence the need for more infrastructure, land, and development. Highway upgrades outside of Anchorage and surrounding the FNSB will allow for greater access to previously undeveloped land. These needs are currently being met through future development projects and residential community initiatives.

4.2.10 Energy

Army growth at USARAK Garrisons is expected to result in less than significant impacts to energy consumption. Ongoing USARAK Garrison activities, including training and range construction and expansion, are expected to continue to impact energy resources. A variety of capital improvement projects are planned or currently underway on installation cantonment areas. The cumulative effects will be less than significant because proposed capital improvement projects would mitigate additional energy requirements. Privatization of USAG FRA and USAG FWA utilities occurred in August 2008. DU continues to upgrade power feeders and transmission lines, and will implement new technology in power generation facilities that will all for cleaner and more efficient use and distribution of power sources and energy.

More sustainable technology coupled with the efficiencies gained from technology upgrades is anticipated to allow Doyon to accommodate the energy needs of both garrisons and other customers while maintaining extra capacity to handle surges in power requirements. Therefore,

the impacts of stationing additional units in USAG FWA and USAG FRA (among a growing civilian community population) is anticipated to be less than significant.

4.2.11 Public Access and Recreation & Human Health and Safety

Continued population growth and development in the region are expected to create more pressure on existing land use and recreation over time.

Past, ongoing, and planned military activities would continue to impact public access and recreation or subsistence activities on USARAK lands. Past military activities have impacted public access for recreation or subsistence activities because of permanent and temporary closures of some areas of USARAK lands. Construction of roads and trails on Army properties has resulted in beneficial impacts to public access by increasing the amount of Army lands feasibly accessible for recreational purposes.

Within the military mission priority, USAG FRA and USAG FWA strive to allow public access to military lands, providing both civilians and military personnel with recreational and educational opportunities. Ongoing USARAK Garrison activities, including training and range construction and expansion, are expected to increase the impact to public access and recreation activities. Planned FRA range projects include a MOUT site, sniper range and multi-purpose training range. Each project will be constructed within or adjacent to existing range footprints, and will share existing impact areas. At FWA, the expanded UAC will affect less than three additional acres and will restrict access to that specific parcel of land. At DTA the BAX (3500 acres) and CACTF (1000 acres) will share a surface danger zone of 25,000 acres and is expected to be in use between 106 – 238 days per year. This will have some impact on access to the affected lands. Two of the three Donnelly East Mobility and Maneuver Projects may restrict access (expansion of the drop zone from 434 to 2474 acres, and hardening the bivouac site) while improving the East Trail Network will potentially improve access.

Some areas may be permanently closed to public access due to specific military activities associated with that area. Impact areas must remain permanently off-limits to public access. For live-fire ranges, SDZs may be closed for up to 280 days per year, which would have a significant impact to public access. USARAK has defined five primary categories of public use areas on its lands. These categories are Open Use, Modified Use, Limited Use, and Off-Limits areas. Because alternate areas on USARAK lands would still be available for public access, cumulative impacts would be less than significant.

A variety of capital improvement projects is planned or currently underway within the FRA and FWA cantonment area. Range construction and improvement projects are planned on USARAK lands. Other military activities may also impact land use, public access, and recreation activities in the area.

Ongoing and planned nonmilitary activities would also contribute to cumulative impacts on USARAK lands. Ecosystem-level inventory and planning would promote long-term sustainability of public access and recreation or subsistence opportunities within Alaska. Cumulative impacts to land use and recreation resources are expected to be less than significant.

Additionally, Army growth on USARAK Garrisons is expected to have less than significant impacts to both access for subsistence activities and availability of subsistence resources. Much of the proposed activities would be located within previously disturbed areas. While there

may be an increase in access closures and some less than significant effects on the availability of subsistence resources for some areas at either of the stationing locations, an adequate amount of land would still be accessible for subsistence activities. Subsistence resources may be cumulatively affected because of other regional activities including military activities, resource extraction, and community growth. Impacts to subsistence in the interior Alaska region of interest are expected to be less than significant. As a result of the ever increasing urbanization of south-central Alaska and the affects of federal and state regulations on subsistence in the interior region, Army growth is expected to result in less than significant impacts on subsistence.

The Alaska Railroad expansion, 80 miles of new railroad line running to Delta Junction may impact access and subsistence activity, and will be addressed in that project's own NEPA analysis.

4.2.12 Hazardous Materials and Hazardous Waste

Inadvertent releases of hazardous materials, primarily petroleum products and solvents, have resulted in contaminated sites on USAG Alaska lands. Stationing of additional Soldiers at USARAK Garrisons would result in increased risk of inadvertent releases of hazardous materials and wastes. Cumulative effects would occur as a result of training increases due to recent Transformation, Air Force training exercises, and training associated with the Airborne Task Force.

Transformation and training associated with the Airborne BCT, and stationing of Stryker vehicles, equipment, and weapon systems associated with the SBCT have increased hazardous waste generation at training areas. Hazardous materials and wastes used and generated on USARAK lands would typically include explosive munitions, UXO, fuels, oils, and lubricants.

Air Force air-to-ground training also occurs at DTA and adds to the UXO present on Army lands. However, all UXO would be contained within designated impact areas, which are off-limits to public and most military access.

In addition, fuel spills may occur as a result of maneuver training or leaking from USTs/ASTs. The continued implementation of spill prevention, control, and countermeasure plans in conjunction with proper monitoring and replacement of aging equipment would mitigate those impacts. Continued implementation of USARAK Hazardous Waste Management policies (USAG Alaska PAM 200-1) establish guidelines to protect against fire, explosion, spills, threats to health, and other serious consequences of improper hazardous materials/regulated waste management. Cumulative impacts to human health and safety are expected to be less than significant to significant but mitigable to less than significant.

Similarly, fuel and oil spills associated with private/public vehicles, fueling stations, or other public facilities are often localized and therefore not anticipated to contribute to significant impacts.

4.2.13 Traffic

A variety of capital improvement projects are planned or currently underway on installation cantonment areas at FRA and FWA, which are anticipated to improve traffic flow and reduce bottlenecks. The FRA Main Gate is planned to be rebuilt, which will improve the flow of traffic during peak hours. Other military activities may also impact traffic and transportation resources

in the area. However, because of the wide distribution of the potential cumulative activities over time and space, cumulative impacts to traffic and transport resources are expected to be moderate.

As a result of planned and recently completed highway improvement projects along the Alaska and Richardson Highways, particularly the addition of a number of passing lanes, the historical impacts of military convoys traveling between FWA and DTA and FRA and DTA on local traffic congestion are anticipated to be substantially reduced.

4.2.14 Socioeconomics

Individually, military and civilian actions potentially affecting FRA or FWA would result in less than significant and mostly beneficial impacts to socioeconomic resources. Collectively, continued socioeconomic impacts are expected in the areas surrounding USARAK Garrisons as the result of projected population growth and development. Long-term direct and indirect beneficial cumulative effects are expected because of increased sales volume and employment in the local area under all. The beneficial economic effects (i.e., increased spending, employment, and income) of these actions are expected to last for the duration any construction projects. A lasting economic benefit will result from increased expenditure of discretionary income of Soldiers and their Families.

The Whole Barracks Renewal program and the FWA Residential Communities Initiative and Family housing projects have had a positive impact on socioeconomic cumulative impacts. Improving unaccompanied Soldier and Family housing and encouraging Soldiers and Families to remain on-post will reduce competition of and stress on off-post housing.

The proposed action is anticipated to have a less than significant cumulative impact to population, employment, income, housing, and schools. Army and community growth is expected to add employment opportunities for low-income Families.

No construction projects or training exercises would take place near schools, daycares, or other areas with large populations of children. No cumulative adverse effects to the health and safety of children are expected under this alternative.

Access to public lands for recreation is important to the Alaskan community and USARAK Garrisons will continue to provide access to military lands in accordance with Sikes Act requirements to the extent that such activities are compatible with mission priorities of the various installations and training areas.

4.2.14 Wildland Fire Management

Past activities have had adverse impacts to fire management through inadvertent fire starts, both on and off installation lands, and aggressive fire suppression. However, military fires are usually quickly controlled. The importance of fire to Alaskan ecosystems is recognized and decisions to control a fire or let it burn are made on a case-by-case basis (USARAK 2004). The establishment of cooperative agreements between the Bureau of Land Management's Alaska Fire Service has improved fire management on USARAK lands.

All current and planned training activities have the potential to adversely impact fire management through increased risk of fire. The ITAM program would help minimize this potential through ensuring fire danger is considered when training plans are created, reducing

fire danger through reduction of fuel loads and construction of fuel breaks, preventing occurrence of accidental fire starts, and monitoring for fire-prone areas. The overall cumulative impact to fire management resulting from ITAM activities under the proposed action would be beneficial.

4.2.15 Invasive Species

The projects identified as contributing to cumulative impacts would impact invasive species management. The cumulative projects are expected to contain mitigation measures and SOPs to minimize potential invasive species management impacts. In light of historic, ongoing, and reasonably foreseeable future actions, the cumulative impacts involving invasive species are expected to be less than significant.

Training requirements for proposed Army growth stationing, in conjunction with training identified in the 2004 Transformation document (SBCT), and Airborne Task Force (Airborne BCT) training, would increase the opportunity for invasive species growth.

Vehicle tracks and tires, as well as soldiers' boot treads, can serve as vectors for the distribution of invasive species' seeds. Such distribution, especially in conjunction with soil disturbance activities, increases the likelihood that they will become established. Wildfire suppression crews, tourists, and hunters, can also contribute to the introduction of invasive species. Wildfire and other events (i.e. engineer training, off-road vehicle maneuvers) that result in the removal of native vegetative cover can serve to create favorable conditions for the establishment of invasive species.

Engineer unit training generally results in an increased level of impact as compared to other CS/CSS units. As a result, engineering activity (i.e digging fighting positions, creating and clearing battlefield obstacles, clearing roads and bivouac areas) represents the majority of the potential increase in soil disturbance, which can lead to increased presence of invasive species.

The RTLA program conducts annual natural resources monitoring on training lands and monitors and documents vegetation and invasive species during surveys. USAG Alaska lands have few faunal invasive species and the primary invasive species, numerically speaking, are vascular plants. These species are managed using integrated pest management techniques, whereby chemical control is minimized.

Overall, the most important control mechanism for invasive species is the range of temperatures and meteorological conditions at USAG-AK, coupled with the inhospitable climate during the winter months, which inherently favors native species adapted to such conditions and ultimately serves as a check on the successful spread of many potential invasive species.

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5.0 U.S. ARMY PERSONNEL CONTACTED

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Haddix	John	DTA	Wildlife
Mills	Derek	DTA	Transportation
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Berta	Brandon	FRA	ITAM Program
Bryers	Mike	FRA	RTLP Technician
Deardorff	Therese	FRA	
Deters	Doug	FRA	Air Program Manager
Fitz-Enz	Dave	FRA	RTLP Manager
Garner	Chris	FRA	Natural Resources
Graham	Lisa	FRA	Cultural Resources Specialist
Haas	Don	FRA	Water Resources Manager
Larsen	Gary	FRA	Environmental Chief
McKee	Chris	FRA	Natural Resources
Monie	Chuck	FRA	Master Planner
Patterson	Dave	FRA	Range Safety Officer
Petersen	Tom	FRA	Family Housing
Shaw	Wayne	FRA	Master Planning
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Buzby	Josh	FWA	ITAM Program
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Municipality of Anchorage Mayor Mark Begich P.O. Box 196650 Anchorage, AK 99519 Mayor@ci.anchorage.ak.us	**U.S. Army Corps of Engineers, Regulatory Branch, Fairbanks** Attn: Ms. Terri Stinnett Herczeg Deputy Chief US Army Corps of Engineers Regulatory Division Post Office Box 6898 Elmendorf AFB, Alaska 99506-0898
Palmer Soil and Water Conservation District Attn: Eric Wade 259 S. Alaska Street Palmer Alaska 99645 Palmerswcd@alaska.com	**U.S. Army Garrison Fort Greely** Attn: IMPA-FGA-PW (C. BOERST) P.O. Box 31310, Fort Greely, AK 99731-1310 Christine.boerst@us.army.mil
Salcha-Delta Soil and Water Conservation District Attn: Jeff Durham P.O. Box 547 Delta Junction, AK 99737 Jeffswcd@wildak.net	**U.S. Fish and Wildlife Service** *Assistant Regional Director* LaVerne Smith 1011 East Tudor Road, MS 361 Anchorage, AK 99503 Laverne_smith@fws.gov
Alaska Native Tribal Governments to be contacted:	
Dot Lake	Tanacross
Eagle	Tetlin
Healy Lake	Tyonek
Northway	Chickaloon
Knik	Eklutna

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8.0 ACRONYMS

ACSIM
Army Chief of Staff for Installation Management

ADEC
Alaska Department of Environmental Conservation

ADFG
Alaska Department of Fish & Game

ADNR
Alaska Department of Natural Resources

AFB
Air Force Base

AFS
Alaska Fire Service

AKDOT
Alaska Department of Transportation

APE
Area of Potential Effect

ASV
Armored Security Vehicle

AWWU
Anchorage Water and Wastewater Utility

BAX
Battle Area Complex

BCT
Brigade Combat Team

BDE
Brigade

BLM
Bureau of Land Management

BMP
Best Management Practice

BN
Battalion

BOF
Battalion Operations Facility

BRAC
Base Realignment and Closure

CAA
Clean Air Act

CACTF
Combined Arms Collective Training Facility

CALFEX
Combined Arms Live-Fire Exercise

CEQ
Council on Environmental Quality

CERCLA (Superfund)
Comprehensive Environmental Response, Compensation and Liabilities Act

CFFDRS
Canadian Forest Fire Danger Rating System

CFR
Code of Federal Regulations

CHPP
Central Heating and Power Plant

CO
Carbon Monoxide

COF
Company Operations Facility

CPQC
Combat Pistol Qualification Course

CS
Combat Support

CSS
Combat Service Support

CWA
Clean Water Act

CZMA
Coastal Zone Management Act

DLA
Defense Logistics Agency

DoD
Department of Defense

DPW
Department of Public Works

DRMS
Defense Reutilization and Marketing Service

DTA
Donnelly Training Area

DU
Doyon Utilities

EA
Environmental Assessment

EIS
Environmental Impact Statement

EJ
Environmental Justice

EO
Executive Order

EPA
United States Environmental Protection Agency

ESA
Endangered Species Act

ESF
Event Severity Factor

FM
Field Manual

FNSB
Fairbanks North Star Borough

FNSI
Finding of No Significant Impact

FRA
Fort Richardson, Alaska

FTX
Field Training Exercise

FWA
Fort Wainwright, Alaska

FWS
United States Fish and Wildlife Service

GIS
Geographic Information System

GMU
Game Management Unit

GTA
Grow the Army

HAP
Hazardous Air Pollutant

HMA
Housing Market Analysis

HMMWV
High Mobility Multi-Wheeled Vehicle

HQ
Headquarters

ICRMP
Integrated Cultural Resources Management Plan

INRMP
Integrated Natural Resources Management Plan

ITAM
Integrated Training Area Management

JLUS
Joint Land Use Study

KD
Known Distance

LEED
Leadership in Energy and Environmental Design

LRAM
Land Rehabilitation and Maintenance

MBTA
Migratory Bird Treaty Act

MCC / MCT
Movement Control Center / Movement Control Team

MEB
Maneuver Enhancement Brigade

MGD
Million Gallons per Day

MILCON
Military Construction

MIM
Maneuver Impact Mile

MOS
Military Occupational Specialist

MOUT
Mission Operations on Urbanized Terrain

MPMG
Multi-Purpose Machine Gun

MRF
Modified Record Fire

NAAQS
National Ambient Air Quality Standards

NCO
Non-Commissioned Officers

NEPA
National Environmental Policy Act

NESHAP
National Emissions Standards for Hazardous Air Pollution

NHPA
National Historic Preservation Act

NRCS
Natural Resources Conservation Service

NRHP
National Register of Historic Places

NWI
National Wetlands Inventory

O_3
Ozone

ORRV
Off-Road Recreational Vehicle

PA
Public Access

PAH
Polycyclic Aromatic Hydrocarbons

PCB
Polychlorinated Biphenyl

PDO
Property Damage Only

PM
Particulate Matter

POC
Protection of Children

POV
Privately Owned Vehicle

PSD
Prevention of Significant Deterioration

ROD
Record of Decision

ROI
Region of Influence

RONA
Record of Non-Applicability

RTLA
Range and Training Land Assessment

RV
Recreational Vehicle

SAC
Small Arms Complex

SBCT
Stryker Brigade Combat Team

SHPO
State Historic Preservation Office

SIC
Standard Industrial Classification Code

SIP
State Implementation Plan

SOP
Standard Operating Procedure

SPEIS
Supplemental Programmatic Environmental Impact Statement

T&E
Threatened and Endangered

TAPS
Trans-Alaska Pipeline System

TC
Training Circular

TCP
Traditional Cultural Properties

TEMF
Tactical Equipment Maintenance Facility

TFTA

TOC
Tactical Operations Center

UAC
Urban Assault Course

UAC
Urban Assault Course

UP
Utilities Privatization

UPH
Unaccompanied Personnel Housing

USACE
United States Army Corps of Engineers

USAEC
United States Army Environmental Command

USAEC
United States Army Corps of Engineers

USAG
U.S. Army Garrison

USAG FRA
United States Army Garrison Fort Richardson

USAG FWA
United States Army Garrison Fort Wainwright

USARAK
United States Army Alaska

USARTRAK
United States Army Recreational Tracking System

UST
Underground Storage Tank

UXO
Unexploded Ordnance

VCF
Vehicle Conversion Factor

VEC
Valued Environmental Component

VMT
Vehicle Miles Traveled

VOF
Vehicle Off-Road Factor

VSF
Vehicle Severity Factor

YTA
Yukon Training Area

APPENDIX A. COMPARATIVE ANALYSIS OF AIR QUALITY IMPACTS

Comparative Analysis of Air Quality Impacts of the preferred alternative in the *Transformation of U.S. Army Alaska, Final Environmental Impact Statement*, 2004 to the preferred alternative in the 2008 Army Growth in USAG Alaska, Final Environmental Assessment, 2008.

FWA lies within a serious maintenance area for Carbon Monoxide (CO). As a result, all federal actions must go through a conformity review. The total CO emissions threshold that triggers the requirement for a full conformity analysis is 100 tons per year.

The 2004 Stryker EIS thoroughly analyzed the potential air quality impacts associated with transforming the 172nd SIB into a SBCT. Alternative 4 was the preferred alternative, which was ultimately implemented. The detailed analysis can be found in Section 4.2 and Appendix F of the 2004 Stryker EIS. The increases at FWA as a result of transformation included the construction of a Company Operations Facility (COF), the addition of a 1,013 Soldiers and a net gain of 470 tactical vehicles. Through detailed calculations utilizing AP-42 *Emissions Factors,* MOBILE6, the EPA SCREEN 3 Air Dispersion Model, The Industrial Source Complex Short Term Model (ver. 3), and the EPA VISCREEN model, it was determined that the increased stationary and mobile source emissions associated with Transformation were well below the conformity threshold of 100 tons per year. A Record of Non-Applicability (RONA) was prepared.

If implemented, the proposed action under GTA would result in the construction of three structures, a COF, a 93-person barracks, and a Unit Operations and Admin Facility, in the cantonment area as well as a number of smaller support facilities in the small range complex. There would be no new combustion units added to the FWA inventory from these construction projects, either in the form of boilers or generator units. Increased vehicle emissions associated with construction equipment would be of a temporary nature. All new construction would be connected to the existing steam and electric utility infrastructure. Substantial upgrades to the utility infrastructure as a result of Utilities Privatization, which was completed on 15 August 2008, are likely to result in net reductions in air emissions. This is discussed in more detail in chapters 2 and 3 of this document.

Table A-1. Comparison of Ground Vehicles as Part of Stryker and GTA Stationing Actions

Vehicles	Transformation			GTA
	FWA No Action End state	FWA Alternative 4 End state	Net Gain Under Transformation	Net Gain Under GTA Preferred Alternative
Stryker	0	322	322	0
SUSV	170	30	-140	0
HMMWV	396	598	202	82
FMTV	207	239	22	26
Heavy Equip/Other	111	161	50	37
Totals	884	1354	470	145

The proposed action would also add 425 Soldiers and approximately 145 tactical vehicles. Table A-1 above compares the increased number of vehicles at FWA as a result of Transformation to the number of vehicles proposed to be added as part of Grow the Army. Table A-2 below shows a more detailed breakout of Soldiers, vehicles and other equipment included as part of the preferred alternative that could potentially contribute to air emissions at FWA.

Table A-2. Fort Wainwright GTA Units, Soldiers, and Key Equipment

Unit	Soldiers	HMMWV (wheeled)	FMTV (wheeled)	Other Wheeled Vehicles	Heavy Equipment	Generators	Weapons Individual	Weapons Crew Served
472nd MP CO	170	46	4	1	0	8	368	44
1/25th SBCT (Driver + Augmentees)*	16	0	0	0	0	0	18	1
559th Horizontal EN CO*	161	8	17	11	25	18	170	4
65th Ordnance CO*	44	18	4	0	0	4	62	4
1/25th MP PLT Augmentees*	42	12	1	0	0	2	95	11
Deactivation of 20th PA	-8	-2	0	0	0	-1	-8	0
Totals	425	82	26	12	25	31	705	64

* Estimated equipment allocation based on comparable units

As table A-1 shows, the Stryker action comprised a much larger action than is proposed as part of GTA, resulting in the addition of more than three times the number of vehicles including 322 Stryker vehicles. Based on the detailed emissions analysis and the conclusions reached in the 2004 Stryker EIS, it is determined that this GTA action will not exceed the conformity threshold of 100 tons per year of CO. A RONA has been prepared for this project to demonstrate compliance with the General Conformity Rule and can be found in Appendix B.

APPENDIX B. GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY

Project/Action Name: (68854), Permanent Facilities for EN Co and MP Co, Fort Wainwright, Alaska
Project/Action Point of Contact: TBD
Begin Construction Date: March 2009
End Construction Date: March 2011

Project/Action Name: (68856) Barracks Complex for EN and MP Personnel, Fort Wainwright, Alaska
Project/Action Point of Contact: TBD
Begin Construction Date: April 2009
End Construction Date: July 2010

Project/Action Name: (68853) Permanent Facilities for EOD Company, Fort Wainwright, Alaska
Project/Action Point of Contact: TBD
Begin Construction Date: April 2009
End Construction Date: October 2010

Project/Action Name: Stationing of additional CS/CSS units in Alaska to support Army Growth and Pacific Theater Operations

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General Conformity under the Clean Air Act, Section 176 has been evaluated for the projects described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable because:

____ The project/action is an exempt action under 40 CFR 153(c) or (d), (SPECIFY APPLICABLE EXEMPTION CATEGORY AND REGULATORY CITATION).

OR

__X_ Total direct and indirect emissions from these projects/actions have been estimated, and are below the conformity threshold value established at 40 CFR 93.153(b) of 100 tons/year of Carbon Monoxide (CO);

AND

The projects/actions are not considered regionally significant under 40 CFR 93.153(i).

Supporting Documentation and emissions estimates appear are

( ) Attached

(X) Appear in the following NEPA documentation: 1) Army Growth in Alaska Environmental Assessment, USARAK Garrisons, 2008 and 2) Transformation Environmental Impact Statement, US Army Alaska, 2004

( ) Other _____

_____

Gary Larsen,
Chief, Environmental Compliance

APPENDIX C: DOYON UTILITIES LETTER

Response to May 2008 Supplemental Programmatic EIS

Jimmy Huntington Building
714 Fourth Avenue, Suite 201
Fairbanks, AK 99701

DOYON UTILITIES LLC

(907) 455-1500
(907) 455-6788 Fax
PO Box 74040
Fairbanks, AK 99707

June 11, 2008

Public Affairs Office
US Army Environmental Command
BLDG E4460
ATTN: IMAE-PA5179
Hoadley Road
Aberdeen Proving Grounds, MD 21010-5401

RE: UTILITY PRIVATIZATION

To Whom It May Concern:

This document is written in response to the utility portions of the draft supplemental programmatic environmental impact statement for army growth and force structure realignment, U.S. Army Pacific dated May 2008.

The federal government has privatized all utility systems on Ft. Wainwright, Ft. Richardson and Ft. Greely. The awarding contract was signed 27 September 2007, and a Notice to Proceed (NTP) was issued to Doyon Utilities, LLC on 1 November 2007 and the end of the Operations Transition Period (OTP) is 15 August 2008, when full ownership transfers.
As a result of the result of the utilities privatization in Alaska, Twelve (12) separate systems will be privatized and transferred to private ownership. Doyon Utilities is purchasing the utility infrastructure and will be issued a fifty (50) year license to operate the systems. Land does not transfer under the privatization program.

DU will be regulated by the Regulatory Commission of Alaska (RCA). DU will maintain, operate, and own all utilities on these three installations and be fully capable of and responsible for expansion to serve new facilities and needs as required.

All Permits to include necessary Titles V and I air permits will be in DU's name and DU will be responsible for compliance. (Separation from Army permits and issuance in DU's name is expected by 15 August 2008.)

During the OTP, DU is preparing for the first 50 years of its contract by building three operations depots and installing over 7000 secondary meters,
building two new substations, (an additional substation will be constructed in early 2009 at FWA) rebuilding failing electrical feeders and much more as we invest over $40 million by August 15, 2008. Characterization or assessment studies under way on a variety of issues will give us a road map to follow as we move forward. These studies are also expected to provide the most comprehensive condition assessment of the utility infrastructure since they were constructed.

During the first five years of operation, all electric facilities at all three posts will be completely rebuilt. Feeders will have 50% extra capacity, three new substations (one at each post) are being constructed in the first 18 months with completion at Ft. Wainwright scheduled for June 1, 2009. These stations will have 50% excess capacity (or more) and can be expanded by simply adding an additional transformer. (All electrical circuits and supply systems are being constructed with 50% extra capacity and loop feed capabilities to accommodate future growth.)

At no time during the course of a year does the Ft. Wainwright CHPP utilize more than 50% of its capacity to produce steam for heat. DU will be installing approximately 13 to 18 mw of additional turbine capacity to utilize excess steam. This will make Ft. Wainwright totally energy self sufficient within the next two to three years and allow energy wheeling to Ft. Greely or other posts. DU will be ceasing installation of utilidors in favor of more efficient and competitive direct bury for water, wastewater, and heat systems. Additional heat and electric energy loads will be served without increases in quantity of coal consumed or degradation of air quality. Additionally, (although with changed air quality parameters DU will have to seek changes to its permits) the use of technology to control boiler and turbines will actually lower emissions.

DU has, in fact, accelerated projects from 2009 and out years into the OTP for reasons explained and shown below. (DU as a privately regulated utility seeks to solve problems and not simply react as problems occur.) The result will be a more efficient and economical utility system for the federal government.

Utility Privatization

Utility Privatization contracts for FWA, FRA, and FGA were signed September 28, 2007, awarded October 1, 2007 and notice to proceed was issued November 1, 2007, Due to complexity and magnitude of the contract documents, the schedule slipped over a year from that originally envisioned by the solicitation.

The original bid documents, which were updated at least once for changed fixed asset inventory and deficiencies, indentified deficiency projects for year one and

operational transition projects. These were based on conditions at the time the UP was proposed. In order to provide equal bidding information to all proposers, all changes to bid documents stopped in November 2006. As with any caps contract of this magnitude utility infrastructure was continually added to the army inventory, therefore, significant contract modifications will be required for at least the first year of contract performance by DU.

The prevailing attitude as a UP looms for O&M or some less glamorous capital projects is "let it slide, the UP will handle it". This is neither unusual nor is there any thing untoward in this approach. The only problem is that the extra one year plus delay in award exacerbated many deficiencies and O&M problems, i.e., some first year projects should have been done in the operational transition period and some additional projects should and would have been identified as deficiencies.

The following is a partial listing of projects or portions thereof that DU has identified and accelerated at no additional cost to Army and the reason for same:

1. 20 kVA transformer at Fort Richardson (FRA) substation. The original bid was for year 3-5, moved up because of severe overload of existing 10kVA.
2. Black Rapids power generation. Original bid to upgrade in 2009. Moved to operational transition period because lack of routine O&M by skilled technicians had rendered PLC automatic operation impossible, one of the three (3) each 125 kw CAT generator sets capable of auto operation had been removed and a 350 kw Cummins set substituted. Generation had become totally unreliable. DU will replace the existing generators with properly sized generators capable of automatic operation.
3. Fort Greely (FGA) Feeder 5 original bid to upgrade in 2009 accelerated to operation transition period because of severe overload and low voltage at AAAF. (Avionics do not work properly and when fire supply pumps run, lights dim and go off at airfield.)
4. FGA feeder 9 to Bolio Lake original bid to upgrade in 2009. Accelerated to operational transition period because of unreliability, new loads and ultimately double the demand load from a 7.5 mw to 15 mw capacity – due to discovery of both existing and additional new loads.
5. FGA substation, a new project proposed in December 07 to resolve multiple electric capacity, reliability and severe service issues, originally proposed for completion in 2009. Accelerated to December 2008 (with a little bit of luck!) to resolve these serious issues prior to winter of 08/09 and to stop peak shaving and attendant costs one year earlier. All peak shaving at FGA is performed using fuel fired generators. The new substation is expected to substantially reduce the amount of fuel the CHPP will use during the winter season.
6. FGA 20 kVA transformer – same as #5 above.

DU has the following specific comments to the SPEIS dated May 2008.

1. Page V

   Air Quality (top of page Scenarios 1 & 2): Comment on "**The use of boiler units**..." Excess heat capacity exists; new troops can be added without adding to Title V issues. All required boilers are installed already.

   Air Quality (bottom of page – Scenarios 3 & 4): Comment on "**The use of boiler units and generators, coupled with increased steamload or coal consumption at the installations' power plant would considerably contribute to the installations' overall air pollutant emissions, further degrading air quality**". This isn't correct; the plant is permitted for more coal than is presently used. New electric generating facilities replacing older facilities will increase efficiency which will decrease consumption of coal for the same amount of heat and electricity produced.

2. Page VI

   Facilities (continued from page V at top of page): Comment on last sentence "**Due to the amount of construction that would be required**..." The utility systems have been privatized and all coordination is done by DU, which is a regulated utility.

   Socio-Economic (second paragraph): Comment on "**There may also be a shortage of off-post housing, although there may be vacant buildable space available.**" RCI is addressing this. Change last sentence: **Beneficial effects would be expected as additional Soldiers and Families would have some...**

   Air Quality (Scenario 5 bottom of page) Comment on "**Given regional air quality**...' Any air quality issue is primarily in winter. Additionally, as more modern and efficient equipment is installed in the privatized utility, air quality will improve.

3. Page 263

   4.7.12.1: Entire First Sentence. Beginning of paragraph "FRA obtains its energy from the Railbelt Transmission Grid – Presently they are purchasing from Anchorage Municipal Light and Power. **...12 MW.** DU is installing new substations and feeders starting in 2008. No overloads will exist after October 2008. **Sentence: Doyon also plans to install new substations and transformers, and add a new standby generating facility** with a minimum of 7.5 mw **to replace...**the obsolete 6.5 mw facility.

   Line 44 – Sentence: "**Studies by Doyon are proposed which explore the use of alternative**..."

4. Page 282

   Scenario 3 Cantonment Construction: Comment on "**Power, sewage water lines and roads would need to be extended**..." These utilities

would be provided by DU. In the privatized scenario routine capacity upgrades and improvements are planned in advance as the requirements change.

Increased housing needs (except for utilities which will be provided by DU) will be addressed by RCI / ACTUS which assumes control of Ft. Wainwright housing on January 1, 2009.

5. Page 285

   "**Facilities could not be sited in the current cantonment area and power, sewage lines, water lines and roads would need to be extended to the expansion location for the new cantonment area. This area would consist of between 75-120 acres of land to the north of the Chena River and the current cantonment area.** For the 75-120 acres available for development north of the Chena River, power can and will be easily provided by DU. Water and wastewater service has been extended to housing constructed in 2007 and 2008 by Golden Heart Utilities. Natural gas for heating is being provided by Fairbanks Natural Gas.

6. Page 288

   CSS (1000, CS (1000) Comment on entire paragraph 2 "**Long term effects from stationing**..." The current boiler capacity and permitting can serve substantial additional loads – DU would provide new units as required as well as required permitting changes if needed.

7. Page 289

   Fires Brigade (1600) Comment on entire first paragraph "**Cantonment Construction** - last two sentences. See previous comments. Comments on second paragraph "**Long term effects from stationing these units**..." Additional generation can be added without increasing air quality problems. By installing a back pressure turbine with a higher efficiency more power can be generated while supplying steam without increasing emissions or, in fact, coal consumption. DU will upgrade generating systems to reduce emissions by heat rate and other technology improvements.

8. Page 334

   First paragraph – Comment on Cantonment Construction: Sentence "**These facilities would be tied in to existing utilities**..." The utility systems that have been privatized are being systematically upgraded – overhead distribution and substantial portions of the power system will be completely replaced by 2010. A new electrical substation scheduled for completion in June of 2009, and other upgrades, will handle 50% more load that currently exist.

   Last section – Fire Brigades (1600) Comment on sentences beginning "**Construction would involve all new facilities**...Ending next page with "**Additional family housing**..." Electrical systems will be

completely replaced with higher capacity systems by the end of 2010 by Doyon Utilities. Heat systems may be extended, but no new capacity will be required.

9. Page 335

   4.8.12.1 Affected Environment. Comment on entire first sentence at "...**steam heat for the installation**" and Ft. Greely. Comment on last sentence: "~~**Many**~~ **Some** plans are underway by DU to install additional generation so the facility need not rely on GVEA."

   FWA has a central coal-fired power plant that produces electricity and steam heat for the installation and is responsible for approximately 95% or more of the energy capability throughout Ft. Wainwright. The new turbine will allow wheeling to Ft. Greely, et al. Seasonal maintenance of the power generation facility will not create a 5 mw shortfall as maintenance is routinely performed only in the summer months.

10. Page 336

    Last full sentence / paragraph top of page "**Power needs at DTA are supplied via a combination of the GVEA, the power plant at Ft. Greely**..." (Delete remainder of this sentence and replace with "**the power plant at Ft. Wainwright by wheeling**".

If you have any questions please feel free to call me at 455-1500.

Sincerely,

George E. Gordon
President/CEO

G:\Admin\Correspondence\Outgoing Corr 2008\DU PRIVATIZING ALL UTILITIES.doc

- Continued provision of portable containment systems for use at in-field refueling points that would be capable of containing potential fuel releases from fuel tanker vehicles. This would minimize the risk of area contamination from inadvertent petrochemical release.
- Continue convoy-permitting processes with Alaska Department of Transportation and Public Facilities.
- Consideration of alternate travel routes and methods for military convoys, including line haul, airlift, and rail, if available to help avoid traffic risks and impacts.
- Splitting of convoys into smaller vehicle groups and staggering of departure times, per USAG Alaska Regulation 55-2, *Transportation Operations and Planning in Alaska*, to ease traffic congestion problems.
- Continue public notification of imminent convoy activity, including specific days of convoy activity. This allows the public to avoid highway travel concurrent with military convoys.

Conclusion: Based on review of the information and analysis contained in the EA, the respective Commanders of U.S. Army Garrisons Fort Richardson and Fort Wainwright have determined that the implementation of the Preferred Alternative would not significantly affect the quality of the environment within the meaning of NEPA Section 102(2)(C). The preparation of an EIS for this action is not required.

Points of Contact: For further information, please direct requests to Ms. Jessica Garron, Attn: IMPC-FWA-PWE (Garron), 1060 Gaffney Road #4500, Fort Wainwright, Alaska 99703-4500 or via email: jessica.garron@us.army.mil. The final EA and FNSI are available at http://www.usarak.army.mil/conservation/NEPA_home.htm.

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