Executive Summary

Introduction

This Environmental Impact Statement (EIS) evaluates the environment effects of the U.S. Army (Army) proposal to station and train a new aviation unit in Alaska. The new unit would be created by reorganizing and augmenting existing Army aviation assets in Alaska to create a front-line aviation unit with increased capacity. This action would involve the stationing of additional Soldiers and helicopters, constructing a number of facilities at Fort Wainwright (FWA), and increasing aviation training on Army lands and within airspace in Alaska.

U.S. Army Alaska (USARAK) is home to the 1st Stryker Brigade Combat Team (SBCT), 25th Infantry Division (1/25 SBCT), and the 4th Brigade Combat Team (Airborne) (ABCT), 25th Infantry Division (4/25 ABCT). The 1/25 SBCT is stationed at FWA and the 4/25 ABCT is stationed at Fort Richardson (FRA). In 1999, the Army initiated a service-wide transformation process to restructure and transform its active duty forces to respond more rapidly to modern enemy threats. USARAK has been at the forefront of Army transformation, converting its light infantry unit (the 172nd Infantry Brigade [Light]) into the 1/25 SBCT and converting its airborne assets into the 4/25 ABCT.

The proposed expansion of USARAK's aviation assets and capabilities to support both integrated training and deployment abroad would continue the process of Army transformation in Alaska. Aviation units are expected to fight and train as members of combined-arms teams. The new aviation unit in Alaska would enhance the integrated training of the 1/25 SBCT and 4/25 ABCT to achieve proficiency in the execution of combined-arms, joint, and coalition operations under realistic and challenging conditions.

Purpose and Need for Action

The purpose of the Proposed Action is to enhance USARAK aviation capabilities, improve training opportunities for existing USARAK forces, and improve the Army's ability to support worldwide military operations. The Proposed Action would further support the Army and the U.S. Department of Defense (DoD) mission requirements, transformation goals, and future combat missions.

The types and numbers of aviation assets currently available to USARAK are not sufficient to employ the full range of integrated tactical combat support options, or to provide the full complement of integrated tactical training needs required by the modern Brigade Combat Team (BCT). A front-line aviation unit would provide the needed local capability for integrated training and the needed force capacity for deployment abroad with the type of Army aviation assets and units that support BCTs in an actual combat environment.

EIS Study Area

The study area for this EIS includes USARAK lands and installations in Alaska, and other lands and airspace in Alaska that could be affected by implementing the Proposed Action.

The military installations included in the study area are FWA, FRA, and Eielson Air Force Base (AFB). The study area includes the Cantonment and training areas associated with each of these installations to include the Tanana Flats Training Area (TFTA), Yukon Training Area (YTA), Donnelly Training Areas (DTA) East and West, Gerstle River Training Area (GRTA), and the Black Rapids Training Area (BRTA). Eielson AFB is included as a potential location for some stationing alternatives under the Proposed Action.

Alternatives

Alternatives Screening Criteria

The Army considered the following criteria when developing alternatives that could meet the purpose and need for the Proposed Action:

1. Furthers transformation of USARAK
2. Supports integrated training needs and requirements of BCTs in Alaska
3. Has infrastructure or the potential for new infrastructure construction to accommodate helicopter basing, maintenance, and storage at a reasonable cost, adjacent to an operational military airfield, and in accordance with relevant installation planning documents
4. Has civilian infrastructure capable of providing lifestyle needs of Soldiers and dependents

These criteria relate to the primary needs of the Proposed Action: training and stationing of increased Soldiers and equipment. They apply to potential spatial and infrastructure constraints of cantonment and non-cantonment areas.

Alternative 1: No Action

Under the No Action alternative, Army aviation assets would not change. No additional Soldiers or helicopters would be permanently stationed in Alaska, and no new facilities would be constructed. Existing aviation assets would continue to use current training locations and transportation corridors, and aviation training would continue at the levels that occurred prior to the temporary assignment of aviation personnel and assets at Fort Wainwright.

Alternative 2: Aviation Task Force

Alternative 2 would form an Aviation Task Force (ATF) by augmenting USARAK's existing aviation assets with 40 additional helicopters and 710 additional Soldiers. The ATF would be stationed at FWA. Construction of new facilities at the FWA Main Post and operation of additional generators and vehicles would be required. Training would occur on current USARAK training lands and use existing flight corridors. Training from FWA would occur year-round with some restrictions on season, time, altitude, and location. A majority of the training is projected to occur between February and May, although the timing of training could vary depending on mission requirements and world conditions. Airfield operations at Ladd Army Airfield (AAF) would more than double. Airspace structure would not change

but restricted areas would be activated more frequently. Alternative 2 is the Army's Preferred Alternative.

Alternative 3: Combat Aviation Brigade

Alternative 3 would form a Combat Aviation Brigade (CAB) by augmenting USARAK's existing aviation assets with 84 additional helicopters and 2,360 additional Soldiers. Most (60 percent) of the CAB would be stationed at FWA, with the remaining Soldiers distributed evenly between FRA and Eielson AFB. Aircraft also would be distributed among the three installations.

Construction of all the facilities required for Alternative 2, as well as some additional facilities, would be required for Alternative 3. All construction would occur on the FWA Main Post. The CAB would operate more vehicles and generators to support training.

Training would occur on all USARAK training lands and use existing flight corridors. Implementing this alternative would provide USARAK with the capability to train up to three full brigades simultaneously. Flight activity around Ladd AAF would be the same as for Alternative 2 but activity would occur at FRA and Eielson AFB.

Alternatives Eliminated from Further Consideration

The Army considered seven additional alternatives to the Proposed Action. Alternatives ranged from conducting training outside of Alaska or from different military installations in Alaska to alternative stationing of assets and infrastructure outside of FWA. None met all of the screening criteria, and each was dismissed from further evaluation.

Public, Agency, and Tribal Outreach

The Army invites participation in the National Environmental Policy Act (NEPA) process. To identify the issues addressed in this EIS, the Army conducted public, agency, and tribal scoping outreach early in the project development. A Notice of Intent (NOI) to prepare an EIS was published in the *Federal Register* on April 4, 2007.

Agency and public scoping meetings were held April 10-19, 2007. The agency scoping meetings were held in Anchorage and Fairbanks, while the public scoping meetings were held in Anchorage, Fairbanks, and Delta Junction. Individuals and organizations provided written and verbal comments during the scoping period. Comments included: requests for more detail about training activities and coordination of airspace use with general aviation; potential disturbance of existing hazardous waste sites and management of hazardous substances; potential disturbance of historic and archaeological cultural resources; potential noise effects on both human and wildlife populations; potential disturbance of marine mammals, particularly beluga whales, in the Cook Inlet; and potential disturbance of big game such as bison and moose. In addition, the public asked the Army to clarify the Proposed Action and alternatives including the need to explain clearly the increase in personnel, the use of certain installations for stationing, construction details, and aerial training activities under each alternative. The EIS addresses each of these issues.

USARAK consulted with Alaska Native Tribes and tribal organizations in accordance with the requirements of Executive Order (E.O.) 13175, *Consultation and Coordination with Indian*

Tribal Governments, and E.O. 13007, *Indian Sacred Sites* (FR, 1996), to avoid adversely affecting the physical integrity of sacred sites, and with the DoD *American Indian and Alaska Native Policy: Alaska Implementation Guidance* (DoD, 2001). The Army provided letters, maps, and supplemental information to 11 federally recognized tribes notifying them of its intent to prepare an EIS. The letters also provided information about the scoping meeting times and locations. Tribes were offered the opportunity to enter into government-to-government consultation. During the scoping period, the Army did not receive any verbal or written comments from tribes. In addition, the Army presented information on the Proposed Action during four quarterly meetings with the Upper Tanana Inter-Tribal Coalition between 2006 and 2009, and provided updates on the Proposed Action via newsletters between 2007 and 2009.

The Draft EIS was made available in May 2009. The Army published a Notice of Availability for the Draft EIS in the *Federal Register* on May 1, 2009, and the U.S. Environmental Protection Agency filed notice of its receipt of the EIS in the *Federal Register* on May 8, 2009. Notices announcing the Draft EIS availability and the public meetings were published in the *Anchorage Daily News*, *Fairbanks Daily News-Miner*, and *Delta Wind* newspapers four times each between the Draft EIS release and the public meetings, and a final notice was published in each newspaper prior to the end of the comment period. Notices also were mailed to 129 agency and tribal representatives as well as private individuals or organizations that expressed interest in the EIS. Copies of the Draft EIS were provided to local libraries, and the Draft EIS files were posted to the U.S. Army Garrison Alaska Conservation website (http://www.usarak.army.mil/conservation/).

Agency and tribal meetings were held in Anchorage and Fairbanks on May 18 and May 20, 2009, respectively. Public meetings were held in Anchorage on May 18, 2009, in Fairbanks on May 20, 2009, and in Delta Junction on May 21, 2009. The purpose of these meetings was to brief agencies, tribes, and members of the community on the Army's Proposed Action and findings of the Draft EIS, and to collect comments on the Draft EIS. The meetings were held in an open house format and included a verbal presentation by Army representatives. A court reporter transcribed the agency and tribal meetings, and took formal comments at the public meetings. A majority of the comments received were related to airspace management, air quality, wildlife, environmental justice, and subsistence and recreation. Comments generally included the following:

- Concern over increased numbers of aircraft and potential conflicts with other users
- Support for notification procedures
- Provided clarification on specific information
- Requested clarification on specific information
- Program used for modeling mobile source emissions
- Requested clarification of values used to prepare the emissions estimates
- Requested clarification of the calculated number of operations per year
- Requested documentation in the EIS regarding the affects of current and proposed activities on moose

- Concerns that increased activities in DTA will increase disturbance to calving grounds of the Delta Bison Herd along the Delta River
- Concern that administrative activities, access for management and research purposes, as well has prescribed fire, will be restricted
- Concern that increased pressure on subsistence species because of increased military and support personnel
- Concern that new military and support personnel would not be aware of, or respect the importance of tribal values and culture

Comments submitted were thoroughly considered, and responses to those comments are presented in Chapter 9 of this Final EIS.

Environmental Consequences and Proposed Mitigation Measures

This EIS evaluates the environmental consequences that may result from implementation of the reorganization and expansion of aviation assets in Alaska. The EIS evaluates impacts to valued environmental components (VECs), which are the resources, ecosystems, and human communities of concern. The Army developed and applied a deliberate process to rank the VECs according to their potential to be affected by the Proposed Action. This approach, which was supported by input from the scoping process, concentrates the environmental analysis on VECs that could be significantly affected by the Proposed Action, and provides consideration of other less (or not) affected VECs at an appropriate level of detail. Resources that had a medium to high potential for impacts were included for a detailed impact assessment, while those that had low or very low potential to be affected were considered but not analyzed in depth. Resources analyzed in depth in this EIS include airspace management, cultural and visual resources, noise, hazardous materials/hazardous waste, wildlife and fisheries, air quality, socioeconomics, soils and permafrost, water resources, and subsistence and recreation. An analysis of cumulative effects is also included in this EIS. Impacts in the EIS are presented according to the main components of the Proposed Action: aviation personnel, aviation assets, facilities construction and demolition, and military training. These aspects of the Proposed Action have differing effects on the VECs; for some resources, facilities construction has the greatest potential for effect, while others are largely unaffected by facilities construction but are affected by training activities. The key findings of the EIS impacts analysis are summarized below. Mitigation measures identified to reduce impacts also are presented.

Airspace Management: Under **Alternative 1**, there would be no change in helicopter basing or operations at Alaska military installations. Army helicopter operations would continue to have the potential to interact with general aviation (GA), particularly near airfields and in the visual flight rule (VFR) corridors. **Alternative 2** would add 40 helicopters to FWA, and takeoffs and landings from Ladd AAF would double (averaging 40 takeoffs and landings daily). Restricted areas would be activated more frequently. This increased activity would increase the potential for interaction with GA. Under Alternative 3, the same helicopters and activity would occur at FWA as with Alternative 2, but **Alternative 3** would add 20 helicopters to FRA and 24 helicopters to Eielson AFB. At FRA, an average of 20 USARAK

airfield operations would occur daily. At Eielson AFB, four airfield operations would occur daily, on average. Alternative 3 would have the highest level of flying activity and, thus, the highest potential to affect GA. Under all alternatives, however, the military's existing programs would continue to be used to coordinate with local civilian aviation interests and the U.S. Air Force (USAF) to reduce potential conflicts in corridors that both military and civilian air traffic use heavily. Both Alternative 2 and Alternative 3 would have a less-than-significant, adverse impact on safety and no effect on the predictability or accessibility of Alaskan airspace for either military or civilian users. To ensure that airspace is not adversely affected, USARAK would continue its coordination with local civilian aviation interests and the USAF to reduce potential conflicts in corridors used heavily by both military and civilian air traffic. The overall impact to airspace would be adverse but less than significant.

Cultural and Visual Resources: Under **Alternative 1**, there would be no impacts to cultural or visual resources from construction or training activities. The impacts to historic and visual resources for **Alternatives 2 and 3** are the same. Under both alternatives, there would be significant adverse effects to the World War II-era National Historic Landmark (NHL) at FWA from infill development of facilities, viewshed obstruction from the infill development, and the potential for change in use of Hangars 2 and 3, which contribute significantly to the NHL's historic significance. To mitigate these effects, the Army has proposed a number of actions to minimize effects to the NHL. The Army proposes to involve National Historic Preservation Act (NHPA) Section 106 consulting parties in the procurement process for design and construction of new facilities within the NHL, as well as follow the *Fort Wainwright Army Installation Design Guidelines* for design of the new facilities, particularly new helicopter hangars, to ensure they are "sympathetic" to the historical setting of the NHL. For Hangars 2 and 3, the Army proposes prepare a study to investigate potential future uses of these buildings following construction of new helicopter hangars and complete Historic American Buildings Survey documentation. To increase public education and access to the historic resources at FWA, the Army also proposes to construct a viewing platform for visitors; prepare a context statement for the Cold War in Alaska; prepare design guidelines for renovations, maintenance, and new construction within the NHL; and prepare a context study for cold weather research in Alaska with its beginnings at FWA. In coordination with the State Historic Preservation Office and the other NHPA Section 106 consulting parties, the Army completed a Programmatic Agreement (see Appendix F of the EIS), which is anticipated to be signed in August or September 2009. SOP 12 of the Army's *Integrated Cultural Resources Management Plan* provides procedures for inadvertent discoveries and emergency actions. SOP 12 addresses the process for tribal coordination, when appropriate. No impacts to cultural or visual resources are expected to occur at FRA or Eielson AFB under Alternative 3 because no new construction is proposed. The overall impact to this resource would be adverse, with most of the impacts considered to be significant.

Noise: Currently, the noise zone (NZ) II contour at FWA extends into a residential area, and the primary source of noise in this location is airfield operations. NZ II is generally considered incompatible for noise-sensitive land uses, including residential areas. Within NZ II, the Army would expect 15 to 39 percent of the population to be annoyed by noise from military activities. USARAK receives a few noise complaints each year, most of which are related to weapons training rather than flight operations. **Alternative 1** would not change the noise sources or conditions at FWA. Under both **Alternatives 2 and 3**, noise at

FWA would increase from construction and operation of facilities and increased activity in airfields and flight corridors. These activities are not expected to change NZs around the installation. Alternative 3 would also increase flying operations at Bryant AAF and Eielson AFB. Although noise-generating activities would occur more frequently, NZs would not change around these installations. The frequency of noise annoyance would be expected to increase proportionally to the increase in flight operations. No additional mitigation is proposed to address the noise impacts because the NZs would not change from existing conditions under any of the alternatives. Because noise events would occur more frequently, thus resulting in an adverse effect, the Army will continue to implement existing measures and guidelines for minimizing and collecting noise complaints. The overall impact to this resource would be adverse but less than significant.

Hazardous Materials/Hazardous Waste: Under **Alternative 1,** there would be no change in the use of hazardous materials or generation of hazardous waste. Contaminated sites on FWA would continue to be managed according to agreements and consultation with the U.S. Environmental Protection Agency and Alaska Department of Environmental Conservation. Under both **Alternatives 2 and 3**, some facilities construction and demolition activities are proposed to be sited within contaminated areas. Contaminated soil encountered during construction would be removed and properly disposed of in accordance with the appropriate State and federal regulations. For all facilities proposed under Alternative 2 that are sited in known contaminated areas, the Army has conducted pre-construction environmental surveys. The surveys recommend approval for construction without additional investigation for all but the following two areas:

- Additional investigation for the Aircraft Parts Storage Facility will be conducted in the summer of 2009 to delineate and characterize the location and concentration of any contaminants with respect to layout and foundation design. The site was recommended for approval for construction because of the nature of the contamination and the Garrison's capability to manage contamination that may be encountered during construction.

- Known minor contamination, potential contamination, and other recognized environmental conditions present a strong suspicion that contamination would be encountered during the demolition of Buildings 3011, 3475, and 3477 or subsequent construction of the Organizational Parking Area project. The extent of the potential contamination cannot be determined until demolition of Buildings 3475 and 3477 has occurred. It is expected that contamination is localized and within the capability of the project and Garrison to manage. The site was recommended for construction with the understanding that further investigation will be necessary to determine the presence or absence of contamination and required cleanup/remediation.

For construction of facilities in areas with contamination, the Army will consult with State and federal agencies pursuant to the Federal Facilities Agreement. This regulatory process could delay construction and add cost to the projects. Operation and maintenance (O&M) of new facilities and equipment would increase use of hazardous materials and generation of hazardous waste. **Alternative 3** has two more properties sited in contaminated areas than Alternative 2 and, therefore, could be more complicated and expensive to implement. Likewise, Alternative 3 involves a larger workforce and operation of more facilities that use

hazardous materials and generate hazardous waste. USARAK has existing management plans and programs to safely collect, store, and dispose of hazardous materials/hazardous waste, and has capacity to handle O&M waste associated with either Alternative 2 or Alternative 3. The Army would continue to manage its hazardous materials and waste in existing programs to be protective of human health and the environment. The Army is committed to continuing ongoing monitoring in areas where the presence of contamination is possible but has not been previously identified. The overall impact to this resource would be adverse but less than significant.

Wildlife and Fisheries: Wildlife species included in the impact analysis are those identified as being indicator species: moose, caribou, Dall sheep, bison, brown and black bears, beluga whales, migratory waterbirds, sandhill cranes, raptors (to include bald and golden eagles), neotropical migratory birds, and other sensitive species.

Under **Alternative 1**, the primary impacts to wildlife species occur from training exercises, which would continue to occur at current levels. Under **Alternatives 2 and 3**, the increased number of personnel stationed at FWA could increase hunting pressure on game mammals and could increase wildlife-vehicle collisions as traffic increases. These effects would be greater for Alternative 3 under which the personnel numbers are larger. Construction and airfield activities in the FWA Main Post would have little effect on wildlife under either alternative because little wildlife resides in this area.

Under both **Alternatives 2 and 3**, wildlife would be affected by increased military training, both in the increased use of flight corridors and the increased number of exercises at training areas. These effects would be greater under Alternative 3 because this alternative would involve more frequent use of flight corridors and training areas. Impacts to wildlife present along flight corridors and in training areas are described below.

- Along the flight corridors between FWA and the TFTA, YTA, and DTA, moose and bison are common but likely habituated to overflights. The increase in helicopter traffic is unlikely to have much of an effect on these species or on Dall sheep, which are not affected by higher-altitude overflights. Caribou and bears are limited in their distribution along the flight corridors between FWA and the TFTA, YTA, and DTA, and would likely be unaffected. Birds of all types would be potentially affected by increased helicopter traffic in the flight corridors, but the effects would be minimal because specific species either are not common along the flight corridors or use the flight corridors for only limited periods seasonally. Bald eagles are an exception to this because they nest along the flight corridors and have been shown to be sensitive to aircraft and helicopter noise. Because the increase in flight activity is relatively small, this impact is minimal. Alternative 3 would add the Eielson AFB-DTA corridor and would increase the number of helicopters flying along the Tanana and Delta rivers, which would increase effects to sandhill cranes, as compared with Alternatives 1 or 2.
- Wildlife present on the training areas is more susceptible to impact from increased training. This increased sensitivity is partially because helicopters using the training areas fly much lower to the ground and often hover. The effect is limited because helicopter use would still be relatively infrequent at these areas, particularly under Alternative 2. At the TFTA, which is a high-density calving area for moose, low-flying and hovering helicopters would have a moderate to severe effect to individuals near the

training exercises. While these effects are not likely to affect moose at the population level, they do cause substantial disruption, particularly if activities occur during calving season (mid-May). The Army restricts training during moose calving for this reason. Black bears den at TFTA and may be affected by noise during training. Brown bears, caribou, and bison are not common at the TFTA but all are common at DTA, and brown bears are also present at YTA. Caribou and brown bears have been shown to be sensitive to overflights by helicopters, particularly during the calving and post-calving season. While neither species is present on DTA in large numbers, they would be moderately affected if present during training exercises. Helicopters do not seem to affect the bison herd at DTA, which is habituated to noise except during calving when the Army restricts training when bison are present. Birds that nest or breed within the training areas could be affected by increased training activities. The trumpeter swan, which nests at TFTA and DTA, has been shown to be sensitive to noise. The sharp-tailed grouse, which has breeding areas in several drop zones at the DTA, could be moderately to severely affected if training occurred during breeding season (May); however, if training did not occur during this period, effects would be minimal. Training at FRA (only part of Alternative 3) would affect moose and brown and black bears, but the effects are limited because activity is limited.

To minimize effects to wildlife species, the Army will continue to impose restrictions on training activities during critical nesting or calving periods and will follow its existing guidelines to avoid disturbance, displacement, or mortality that could permanently affect populations. Existing wildlife protection measures include implementation of AR 350-2, which includes guidelines for the avoidance of harassment of wildlife. The Army will continue to restrict activities in the DTA as follows to protect bison: 1) minimize disturbance to bison calving areas on DTA between April 15 and May 31, if bison are present, and 2) minimize disturbance to bison pre-migration areas between July 1 and August 31, if bison are present. The Army will continue to halt ground-training activities or operations within 2,000 meters of any bison during any time of year. Additional mitigation measures are additional observations of moose herds and trumpeter swans, pilot advisories of the presence of sandhill crane roosting areas during spring and fall migration, development of a wildlife awareness program for pilots and Soldiers, and surveys of sites prior to construction to protect eagle nesting and feeding habitats. Beluga whales would not be affected by Alternative 2, but may be affected by noise impacts from training under Alternative 3. If the Army were to select Alternative 3 as its Preferred Alternative, it would need to consult with the National Marine Fisheries Service about effects to the beluga whale. The overall impact to wildlife species would be minimal to minor for several species but less than significant for all species.

Air Quality: The Fairbanks area, including FWA, is designated as a maintenance area for carbon monoxide (CO) and non-attainment for particulate matter less than 2.5 microns ($PM_{2.5}$). As a maintenance area, the region has an implementation plan in place to keep CO emissions in compliance with National Ambient Air Quality Standards (NAAQS). Fairbanks was recently designated as non-attainment for $PM_{2.5}$, and an implementation plan to reduce emissions is being developed. Under **Alternative 1**, FWA will continue to participate with federal, State, and regional officials to conduct its activities in a manner that does not contribute to air quality violations. FWA will continue to comply with the terms of its Title V permit. Under **Alternatives 2 and 3**, FWA also would continue these coordination

and compliance activities. To determine if **Alternatives 2 or 3** would contribute to violations of NAAQS, an air quality analysis was conducted. Although increased vehicle emissions and operation of new stationary sources that emit air pollutants would occur under both alternatives, the overall impact to this resource would be less than significant because emissions would all be below regulatory thresholds. Construction of new facilities would also generate emissions from dust and vehicle operations. These temporary emission impacts would be less than significant and would be below regulatory thresholds. Emissions would be greater under **Alternative 3** because the increase in the number of Soldiers and the associated facilities would be greater. Mitigation would include minimizing dust during construction and coordinating with regional efforts that address CO and $PM_{2.5}$.

Socioeconomics: Alternative 1 would not substantially change the population, housing, economic, or school conditions in communities surrounding FWA, FRA, or Eielson AFB. Shortfalls in available family housing at FWA and family and unaccompanied Soldier housing (barracks) housing at FWA and FRA would continue on these installations in the short term until new construction projects are completed. **Alternative 2** would result in a minor increase in population and economic activity in the area near FWA; increases would be within historical fluctuations. Alternative 2 would result in greater short- and longer-term shortages of military family housing as compared to Alternative 1. New military family housing would be constructed at FWA by 2014; however, even after this project is completed, 311 military families could not be housed on the installation. Housing could be accommodated in the Fairbanks area, but families living off FWA would have higher housing costs. Until additional housing units are completed in 2014, families could be in FWA temporary housing longer than desired. Civilian workers would not add greatly to the housing demand because most would be hired from the local area. Barracks housing would be short until 2011 when a new barracks is completed. Relocatable housing structures could be obtained or beds could be added to existing barracks in the short term to temporarily alleviate the shortfall. Enrollment at schools on FWA would increase nearly 5 percent, which could be managed through federal aid that would be provided to the school district. Overall housing and school impacts under Alternative 2 would be adverse but minor, and economic impacts would be beneficial and minor. No mitigation, other than the measures to reduce the impacts of the housing shortage mentioned above would be implemented. Under **Alternative 3**, family housing at FWA would be short 525 units, and barracks would lack more than 500 beds, even after completion of the new barracks. Soldiers stationed at Eielson AFB and FRA under Alternative 3 would not experience a shortage of family housing but unaccompanied housing at FRA would be an issue. There is an existing shortfall of 417 beds in barracks space at FRA, which would be exacerbated with implementation of Alternative 3. If Alternative 3 were implemented, the overall shortfall of beds at FRA would be 611, and no new barracks are planned at the installation. At both FWA and FRA, there would not be initial capacity in the schools to accommodate the expected number of school children; however, it is anticipated that the surrounding schools could absorb the enrollment with receipt of federal aid monies. The overall impact to housing and schools under Alternative 3 would be moderate and adverse, while the economic effect would be moderate and beneficial. If the Army had selected Alternative 3 as its Preferred Alternative, it would have conducted an additional housing analysis to verify the shortages and considered constructing additional housing.

Soils and Permafrost: There would be no construction under **Alternative 1** and, therefore, no disturbance of soils or permafrost during construction. Impacts from training would be the same as under current conditions. Construction of new facilities under **Alternatives 2 and 3** may result in direct short-term adverse impacts to top soils and permafrost as a result of the removal of vegetation and disturbance of soils and permafrost within the facility construction footprint. Temporary erosion impacts and melting of permafrost may occur as soils are exposed during construction. Implementation of established best management practices (BMPs) would reduce the potential for long-term adverse impacts to soils and permafrost. Training activities under **Alternatives 2, and 3** could affect soils and permafrost, but the effects would be limited because ground disturbance would be minimal, and training would use preexisting ranges and maneuver areas, including landing zones, refueling points, and impact areas. Existing range management practices would continue to be used to manage potential effects. The overall impact to soils and permafrost would be temporary and less than significant.

Water Resources: Implementation of **Alternative 1** would not increase water use because no facilities or personnel would be added to FWA. It also would not introduce pollutants into waters during construction because no construction would occur. Impervious surface area would not increase. Military training activities may lead to slight sedimentation from trail use and chemical decomposition of munition constituents within designated impact areas. Implementation of existing BMPs would reduce these impacts. Under **Alternatives 2 and 3**, additional personnel stationed at FWA would increase water use. **Alternative 3** would also increase water use associated with new personnel at Eielson AFB and FRA. Construction of facilities at FWA under **Alternatives 2 and 3** could temporarily impact surface water resources and water quality, including in the section of the Chena River listed as impaired, as a result of erosion and sedimentation from land disturbance and increased potential for the accidental release of hazardous materials. Construction of new facilities also would increase impervious surfaces, increasing surface water runoff and creating less surface area for groundwater to recharge. The net increase of impermeable areas at FWA under Alternatives 2 and 3 is approximately 36 acres and 49 acres, respectively (no construction is proposed at FRA or Eielson AFB under either alternative). The effects would be greater under **Alternative 3** because more construction would occur. Under **Alternatives 2 and 3**, helicopter training exercises, including flight operation and maintenance, would utilize existing facilities and operating procedures; consequently, slight, if any, changes are anticipated in water quality and quantity from training. Implementation of requirements in storm water discharge permits for construction and facility operation, i.e., the anticipated renewal of the Multi-Sector General Permit and the pending issuance of a municipal separate storm sewer system permit, including storm water pollution prevention plans and BMPs, would reduce the potential for long-term adverse impacts to water resources under both **Alternatives 2 and 3**. Furthermore, the Army would coordinate with State and federal regulatory agencies to implement additional measures, as deemed necessary, to address issuance of a total maximum daily load limit for the Chena River (anticipated in 2010). The overall impact to this resource could be adverse but the effect is temporary and less than significant.

Subsistence and Recreation: Alternative 1 would not change access to military installations for subsistence or recreation. Land surrounding restricted areas would continue to provide access to hunting and other recreation activities. **Alternatives 2 and 3** would both increase

the amount of time that training lands are unavailable for subsistence or recreation. However, lands adjacent to the training facilities would continue to be available for subsistence and recreation activities during those periods when USARAK lands are unavailable or closed. Pressures on these surrounding lands would further increase from Alternative 1 conditions. There would be a greater frequency of closures with **Alternative 3** than with Alternative 2 because more training would occur under Alternative 3 that could conflict with public use of military lands. Alternative 3 would also bring more military personnel to the area who might engage in recreational hunting. With ongoing implementation of standard BMPs established by the USARAK for subsistence and recreation activities, as well as education of Soldiers on Alaska Native cultural awareness and diversity, including subsistence-user resources, the overall impact to this resource would be adverse but less than significant.

Cumulative Effects Analysis

The Army conducted a cumulative impact assessment to determine if the combined effects of the Proposed Action along with other projects occurring in the region might be significant. There would be no impacts from implementation of Alternative 1 because no action would be taken under this alternative. Therefore, Alternative 1 is not included in the cumulative effects analysis.

After review of other past, present, and reasonably foreseeable future projects occurring in the same region of influence as the Proposed Action, the Army determined that the following resources could be sensitive to cumulative effects: airspace management, cultural and visual resources, hazardous materials/hazardous waste, noise, wildlife, and subsistence and recreation. For cultural and visual resources and hazardous materials/hazardous waste, the geographic scope of analysis was limited to FWA since direct and potential cumulative impacts are related to facilities construction and demolition. For the other resources, the geographic scope included the flight corridors and USARAK training areas. Other past, present, and reasonably foreseeable future projects considered during the analysis comprise military construction, military training, military reorganizations, and military airspace proposals, as well as private rail and pipeline projects.

The EIS concludes that there would be cumulative effects to cultural resources, hazardous materials/hazardous waste, wildlife, socioeconomics, and subsistence and recreation. Effects to most of these resources are less than significant. With continued coordination among military and civilian airspace users, there would be no cumulative effect to airspace management. Near FWA and Eielson AFB, noise reductions resulting from USAF actions implementing base realignment and closure (BRAC) will offset increases in noise from increased helicopter training under the Preferred Alternative. Modification of World War II- and Cold War-era historic resources representative of Alaska's military legacy would likely continue as the military mission continues to evolve and these historic resources cannot be adapted to new missions. Other construction projects in contaminated areas on FWA could combine with the construction projects of the Proposed Action to further limit the availability of uncontaminated construction sites and increase the likelihood that future construction would be conducted on contaminated sites, requiring agency coordination and resulting in increased construction schedules and costs. Raptors and neotropical bird species may be affected by cumulative actions of military and rail projects along the Tanana River.

A proposed new rail line could possibly present a barrier to activities such as hunting which, when combined with diminishing availability of military lands due to increased training needs, would cumulatively affect public access, recreation, and subsistence.

Effects to housing at FRA under Alternative 3 only could present a significant cumulative effect with consideration of recent Army growth from Grow the Army that has or is projected to further strain housing resources in the short- and long-term. Grow the Army includes construction of new barracks; however, even with the new beds, the existing deficits and the demands of Grow the Army in addition to Alternative 3 of the Proposed Action would overwhelm military housing at FRA and require substantial expansion of facilities to meet needs.

Conclusion

After consideration of public, agency, and tribal input and comments on the Draft EIS, and review of the environmental impacts associated with the alternatives to the Proposed Action, the Army has decided that reorganizing and augmenting its aviation assets in Alaska as an ATF (Alternative 2) is its Preferred Alternative to meeting training needs. The final decision will be documented in a Record of Decision and take into account technical, economic, and political feasibility; environmental and social issues; and the ability to meet objectives of the USARAK mission and the overall Army mission. Alternative 2 would achieve the purpose and need for the Proposed Action and represents a lower cost for USARAK to implement and results in fewer environmental impacts than Alternative 3. Alternative 1 does not meet the Army's purpose and need.

THIS PAGE INTENTIONALLY LEFT BLANK.