EXECUTIVE SUMMARY

Introduction

USARAK proposes to construct and to operate two state-of-the-art, fully automated and instrumented combat training facilities on U.S. Army training lands in Alaska. This involves the construction and operation of a Battle Area Complex (BAX) and a Combined Arms Collective Training Facility (CACTF). This Final Environmental Impact Statement (FEIS) is the result of U.S. Army Alaska's (USARAK) review of comments received on the Supplemental Draft Environmental Impact Statement (SDEIS) for the construction and operation of the range facilities. The Army's preferred alternative is to construct and operate a BAX and CACTF range on training lands within Eddy Drop Zone at DTA East.

The BAX and CACTF would support training that involves a wide range of training exercises. These facilities would support training under realistic rural (BAX) and urban (CACTF) combat conditions for up to 1,000 personnel and 165 combat vehicles per training event. The BAX would support the use of live ammunition ranging from individual Soldier weapons (5.56mm rounds) up to 105mm inert rounds fired from the Stryker Mobile Gun System or other lesser direct-fire weapons that could be deployed to the BAX. The CACTF would support the use of training ammunition including blanks (no ball or tracer rounds), Short Range Training Ammunition, lasers and simunitions (paint ball-like ammunition).

The BAX requires approximately 3,500 acres and the CACTF requires 1,100 acres of land suitable for the construction and operation of these ranges. In addition, a combined area of approximately 25,000 acres is needed for surface danger zones for both the BAX (rural environment) and CACTF (urban environment). While these ranges can be used separately to train specific skills, their ability to be used together to provide the flexible training required to prepare USARAK's forces for diverse combat missions is vital to wartime preparedness. During wartime situations, battles will transition between rural and urban environments. It is necessary to provide a range complex where all of these skills can be practiced in a demanding and realistic environment.

The National Environmental Policy Act of 1969 (NEPA), 40 CFR Parts 1500-1508, and 32 CFR Part 651, *Environmental Analysis of Army Actions* (AR 200-2) require the Army to assess the environmental impacts of construction and use of the proposed BAX and CACTF ranges. This EIS describes the purpose and need for the proposed action, decision to be made, issues of concern, comparison of alternatives, environmental consequences, and reasonable and practicable mitigation measures.

Purpose and Need

USARAK requires a facility in Alaska that allows its assigned military units, other Army units, and other Department of Defense (DOD) services to conduct live-fire combat training that will raise and sustain their war-fighting skills to higher levels than can be achieved using current facilities. These combat skills must be raised to levels required for USARAK combat units to

effectively conduct combat operations in the current Global War on Terrorism, support other worldwide contingency operations, and remain prepared for future global combat operations. The design of Army combat training facilities such as the BAX and CACTF has taken into account the quickly evolving nature of modern warfare and its increased emphasis on realistic training for combat.

The purpose of the proposed action is to provide year-round, fully automated, comprehensive, and realistic training and range facilities which, in combination, would support company (200 Soldiers) through battalion (800 Soldiers) combat team training events. Current training facilities do not provide the same high level of training realism and effectiveness required to sustain the requisite high level of combat readiness for deploying USARAK Soldiers. The proposed action involves the construction and operation of a BAX and CACTF necessary to support these required higher levels of realistic combat training in both urban and rural environments. These facilities will incorporate state-of-the-art technology to support all phases of training, from ground maneuver and target engagements to the After Action Review (AAR) (training feedback) phase.

This support and timely feedback are critical to effective training. The Army is obligated to ensure that Soldiers go into battle with the best possible assurance of success and survival. Rigorous and realistic training on facilities such as the BAX and CACTF, conducted to standard, will fulfill this obligation. The BAX and the CACTF will ensure Soldiers are capable of maintaining unit readiness and availability in recognition of the threats facing our nation and the world today. An Army fighting force that emphasizes training first and foremost will be a much more capable response force when alerted for action at its home station. This higher level of training readiness will support the more rapid deployment of USARAK combat forces to a particular area of operations.

The BAX would be designed to support company-sized (200 Soldiers) mounted (training using vehicles) and dismounted (training on foot) live-fire operations on a fully automated, collective live-fire range. The BAX is primarily designed for offensive operations using vehicles in a support role. The range could also challenge the unit with an automated counter-attacking force, requiring the unit to quickly transition to defensive operations. A unit using the range may also conduct joint operations allowing training exercises or operations with other DOD organizations or in combination with the nation's allied forces.

The CACTF would be designed to support battalion-sized (800 Soldiers) force-on-force training using blank ammunition, Short Range Training Ammunition (SRTA) rounds, lasers or other simulated munitions in an urban environment. This training facility would support the combat team and realistically train to develop vital skills needed for effective urban combat on today's battlefield.

The BAX and CACTF are designed to allow units to train simultaneously on both ranges. By co-locating the two ranges, a single unit can use both facilities to train on tactics for transitioning between a rural and an urban environment.

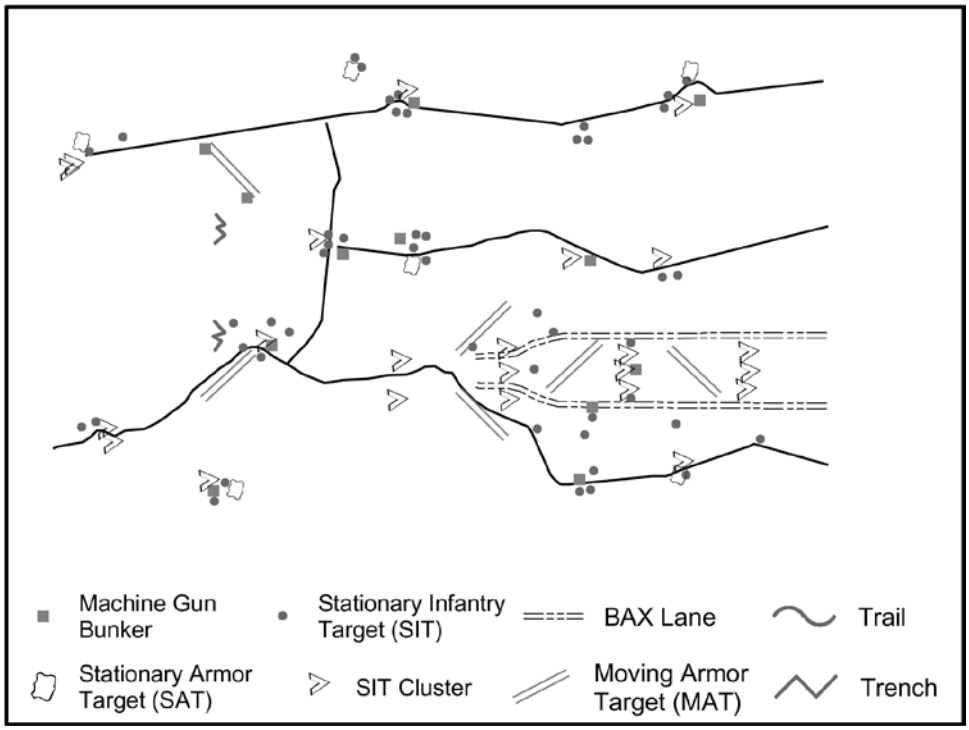
Battle Area Complex

Building the BAX requires approximately 3,500 acres of constructible and maneuverable land. The BAX would support fully automated, collective direct live-fire operations. A live-fire operation is defined as a training event that uses service (or real) ammunition as opposed to blank ammunition. The BAX would support a variety of weapons, including the 105mm Stryker Mobile Gun System, which would utilize inert warheads. These systems require a firing distance of approximately seven miles and a triangular-shaped surface danger zone of approximately 24,000 acres. The size of a surface danger zone is designed to accurately contain ricochets and establish a safe impact area for all projectiles. This area is large enough to contain projectiles fired at an optimal elevation and ensures that the energy of the fired projectile is totally depleted within the surface danger zone. The BAX provides a tactical collective live-fire training facility for Brigade Combat Teams, mounted (by vehicle) or dismounted (on foot), to test their ability to detect, identify, engage and defeat stationary or moving combined arms targets in both open and urban terrain environments. The complex also supports tactical live-fire operations independently of, or simultaneously with, support vehicles in free maneuver. The BAX would include mounted qualification lanes to train and test gunnery skills. The BAX will also support individual and crew gunnery qualification. Approximately 200 Soldiers and up to 25 vehicles would utilize the BAX during unit training events.

The training environment within the BAX must replicate possible or probable combat conditions, complete with topographic variance and vegetation to provide overhead protection, concealment and realism. Thus, the proposed BAX location would not be completely cleared of vegetation or hardened for construction of roads or trails. The average construction footprint of the BAX, which includes structures, targetry, and roads, covers approximately 15 percent (510 acres) of the total area required for a BAX. This area might potentially be cleared of vegetation, but it is the Army's intent to retain as much natural vegetation as possible to replicate a realistic battlefield. The remaining 3,000 acres would be utilized during maneuver operations within the BAX complex. The associated surface danger zone would not be cleared of vegetation.

The BAX design includes two hardened course roads (with the ability to freely maneuver between the two), stationary and moving targets, machine gun bunkers, breaching obstacles, and indirect fire simulation devices (Figure ES.a). All targets would be fully automated and would be computer-operated and scored from a centralized control facility. The range operating system would be fully capable of providing an instrumented AAR and requires electricity and fiber optic communications to operate necessary equipment. In addition to the range, the BAX complex would include an ammunition breakdown building with a loading dock, an operations and storage building, restroom facilities, an enclosed observation area, a covered cooking area, building information systems, a well, and storm drainage features.

Figure ES.a Schematic of the BAX as Illustrated in Army Training Circular 25-8, *Training Ranges* [1].



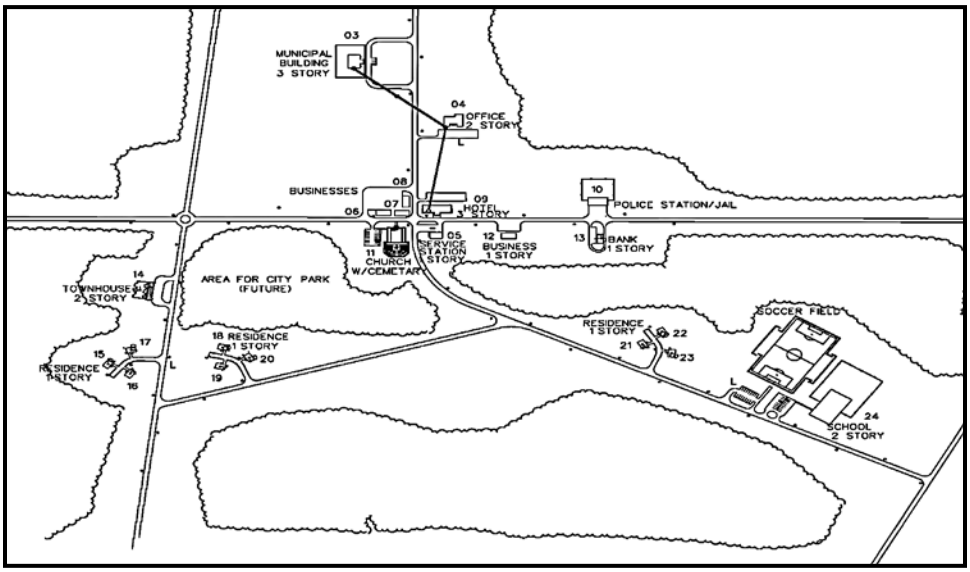
[1] This diagram is illustrative in nature. The actual range design would be unique to the potentially selected site.

The BAX and CACTF would share range support facilities, reducing the overall construction footprint when possible. In addition, training at these facilities will allow a using unit to simultaneously accomplish other collective training events. A Soldier does not fire his weapon alone in battle. The Soldier's entire squad, platoon, company, and battalion must coordinate their efforts to prevent any friendly fire accidents as well as to accomplish their tactical mission. This skill must be practiced on large-scale ranges that realistically portray a combat environment before going to war. The BAX is the rural range that trains Soldiers how to fight from "tree to tree" and "hill to hill."

Combined Arms Collective Training Facility

The CACTF is an urban combat training facility that contains over 20 structures replicating a "city" designed to provide a high level of urban combat training realism and effectiveness to sustain required combat readiness for Soldiers (Figure ES.b). This facility would support mounted (by vehicle) and dismounted (on foot) training operations for up to 800 Soldiers and 140 vehicles. The CACTF requires approximately 1,100 acres of land suitable for construction of buildings and support features. In addition, a surface danger zone associated with the CACTF would require an area of approximately 1,300 acres with a firing distance of approximately 2,300 feet (the maximum range of the training ammunition used on the CACTF). The surface danger zone would completely surround the CACTF along its outer limits and would be large enough to ensure that the energy of the fired Short Range Training Ammunition (non-lethal projectile) is totally depleted within its boundary.

Figure ES.b Schematic of the CACTF as Illustrated in TC 25-8, *Training Ranges* [1].



[1] This diagram is illustrative in nature. The actual range design would be unique to the potentially selected site.

The CACTF is designed to support a full spectrum of urban operations training. The CACTF would accommodate force-on-force (Soldier vs. Soldier) and force-on-targetry (Soldier vs. target) operations. The proposed CACTF would include a Military Operations in Urban Terrain (MOUT) range support facility, control tower, ammunition breakdown facility, electrical service, restroom facilities, site improvements, and data information systems. A total of 24 structures would be constructed as part of the CACTF. Improved roads, sidewalks, and an underground tunnel system would also be constructed (Figure ES.b). The CACTF is the urban range that trains Soldiers how to fight from "street to street" and "building to building."

Use of the Battle Area Complex and the Combined Arms Collective Training Facility

The BAX would be used to train and to test combat teams and dismounted infantry companies (or smaller units) on the necessary skills to detect, identify, engage and defeat stationary and moving infantry and armor targets in a rural setting. This complex would also support direct live-fire operations, either independent of supporting vehicles (such as the Stryker or High Mobility Multipurpose Wheeled Vehicles [HMMWV]) or simultaneously with supporting vehicles. This complex would accommodate a variety of training munitions and/or laser training devices.

The CACTF is designed to train up to battalion-sized elements on the skills and unit teamwork necessary to conduct clearing, breaching, and offensive and defensive operations in an urban setting. This urban setting would be fully automated with digital review capability. Training scenarios will mimic real-world situations as closely as possible.

As the BAX and CACTF would be located in Alaska, the primary users of the training facility would be units assigned to USARAK. Other users include institutional groups (field and live-fire requirements of Soldiers attending the Non-Commissioned Officer Officers Academy or the Northern Warfare Training Center), non-tenant organizations (units not assigned to USARAK but

who historically utilize USARAK training facilities, including Army National Guard and Army Reserve), DOD organizations, and weapons testing groups. Companies from the 172nd Infantry Stryker Brigade Combat Team and 4th Brigade, 25th Infantry Division Airborne Brigade Combat Team are required to train on the BAX. The maximum potential throughput or use of the BAX per year would be approximately 238 days. The minimum throughput of the BAX would be approximately 106 days.

Training events on the BAX would vary in length based on the training needs and strategy of each unit as determined by the Commander. Training events involving use of the BAX can require scheduling the facility for anywhere from 3 to 45 days. Although this is a wide range, the events would typically occur for approximately two weeks in length. In addition to actual training days, there would also be days required for set up, reset between iterations, and maintenance. Both day and night operations would be conducted on the BAX and CACTF.

The CACTF can be used separately from the BAX to train specific skills. However, the ability for the two range facilities to be used together to train combat teams on synergism, flexibility, and diversity is vital to wartime preparedness. During wartime situations, battles will rapidly transition between rural and urban environments, over all lengths and types of distances. It is necessary to provide range facilities where all of these skills can be practiced collectively. During training events, the BAX and CACTF would likely be used together.

Units would leave their home station (either Fort Wainwright [FWA] or Fort Richardson [FRA] or other DOD installations), arrive at the BAX and CACTF, and then simultaneously use several training venues. The largest collective training event at the BAX and CACTF range complex would involve a brigade-sized unit (approximately 3,400 Soldiers [or four battalions]) training its assigned battalions over an approximate 45-day period.

The BAX would support fully automated, collective direct live-fire operations. A live-fire operation is defined as a training event that uses service (or real) ammunition as opposed to blank ammunition. A direct fire operation occurs when ammunition is delivered on target by sighting directly on the target using the weapon system's sighting equipment. All training at the BAX would be direct fire. During a direct live-fire event, Soldiers maintain an unimpeded direct line-of-sight between their location and the targets while shooting real bullets at those targets.

The BAX supports both mounted (using vehicles) and dismounted (on foot) operations. The mounted portion of the BAX would support a variety of weapons, including the 105mm vehicle-mounted gun, which would utilize non-exploding (inert) warheads (Table 2.c). Typical weapon systems such as this that would be used at the BAX are mounted on Stryker combat vehicles, HMMWVs, or other ground vehicles. Laser devices would typically be used for evaluating target distances and to designate specific targets. Weapons used on the dismounted portion of the BAX include machine guns and shoulder-mounted anti-tank weapons (Table 2.b). Multiple Integrated Laser Engagement System (MILES) equipment could also be utilized during both live and non-live fire events at the BAX.

Units training at the CACTF would employ a variety of simulated training munitions and laser training devices. Direct, line-of-sight operations would occur on the CACTF. Blank ammunition (no ball or tracer rounds), Short Range Training Ammunition, lasers, and simunitions (paint

ball-like ammunition) would be utilized during training activities. Simunitions are non-lethal and contain non-toxic color marking compounds designed to function as realistically as actual live ammunition. These types of ammunition allow Soldiers to conduct realistic and interactive force-on-force combat training engagements in a safe and protected environment.

The CACTF would support both mounted and dismounted training operations. A variety of weapons utilizing simulated training munitions (Table 2.g) would be used at the CACTF. These weapons are also mounted on vehicles such as the Stryker and HMMWV. Laser devices would typically be used for evaluating target distances and to designate specific targets. MILES equipment would also be utilized during training events at the CACTF. MILES equipment provides non-live fire but realistic combat engagements through the use of laser emitters and detectors that are either worn by Soldiers or mounted on vehicles. Simunitions also provide realistic non-live fire capabilities.

During training, Soldiers would transition from rural (BAX) to urban (CACTF) environments. Vehicles within the Army inventory, including the Stryker, would utilize unimproved off-road terrain, hardened roads and trails established as part of the proposed action. Soldiers would also maneuver on foot, both on and off-road. While targets would be placed along roads and trails, their locations would not restrict movement to an established route and would allow a commander to freely maneuver within the range complex. Vehicles and Soldiers would have the ability to freely maneuver on all acreage within the BAX and CACTF to perform offensive and defensive exercises. However, military vehicles used at the BAX would travel primarily off road, and vehicle travel at the CACTF would primarily be on established roads and trails within the range complex. The training environment within the CACTF must simulate a realistic scenario, complete with buildings, a sewer system, and debris. Soldiers must maneuver through buildings that simulate a town, with buildings that resemble homes, stores, a school and a church. The buildings include furniture to illustrate the intent of the structure (i.e., couches in homes, display shelves in the stores, etc.) with hidden, moveable targets for the Soldiers to shoot at once they are exposed. The buildings will also contain cameras to document training events and to provide immediate feedback and recording capabilities for the AAR.

The effective integration of Army, Air Force, Navy, and Marine Corps combat power (joint operations), along with the addition of combat power from our allies (combined operations), has always been a crucial underpinning to our nation's combat doctrine. Army air assets consist of attack helicopters, troop assault helicopters and equipment/supply helicopters (AH-6, AH-64A/D, CH-47D/E, OH-58D, MH-60L/DAP and UH-60). Air Force, Navy, and Marine Corps air assets include equipment or personnel delivery aircraft (C-130, C-17 to either parachute or land), high performance jets that perform close air support (attack enemies on the ground) (F-16, A-10, etc.), and other large aircraft (AC-130 gunship). In general, these assets would play a close air support role, including such actions as attacking enemy/suppressing targets, providing marking, cover and concealment, reconnaissance, and firing of weapons through an "off-set" or virtual training process, where close support aircraft would actually operate within a separate range which would be within restricted or special use airspace located outside of the BAX and CACTF area. Transport fixed-wing aircraft and helicopters would perform actual troop and equipment transport and delivery actions in or near the BAX and CACTF. All branches of the military have the potential to participate in joint/combined flying training and major flying exercises (MFEs) using existing Alaska Military Operations Areas (MOA) and restricted airspace.

Use of smoke obscurants for training at the BAX and CACTF is required to ensure Soldier proficiency in smoke employment concepts. This includes the use of permitted fog oil smoke generators, involving both stationary and vehicular-mounted units, smoke grenades, and smoke pots.

Location

The lands that would be affected are located in the state of Alaska. The proposed location for construction and use of the BAX and CACTF is DTA East. DTA is located approximately 100 miles southeast of Fairbanks and lies within the Tanana River Valley. Lands within DTA have been withdrawn from the Bureau of Land Management for military training for 25 years under Public Law 106-65. These lands have been used for military training purposes for over 50 years. Acquisition of additional non-DOD lands for construction and use of the BAX and CACTF was not considered due to an existing DOD moratorium on land acquisitions.

Cooperating Agency

The U.S. Army Corps of Engineers, Alaska District Regulatory Branch is serving as a cooperating agency in the continued preparation of the EIS. Wetland delineation and general functional assessment information presented in this Final EIS was supported by the U.S. Army Corps of Engineers.

Identification of the Preferred Alternative

The Army's preferred alternative is to construct and operate a BAX and CACTF range on training lands within Eddy Drop Zone at DTA East.

Alternatives Analyzed in Detail

The following alternatives are analyzed in this EIS. Alternative 5 has been added since the release of the initial Draft EIS in 2004. These locations are shown in Appendix, Figures 2.c and 2.d.

- **Alternative 1 (No Action)** – USARAK would not construct and operate a BAX and CACTF range on training lands in Alaska.
- **Alternative 2** – Construct and operate a BAX and CACTF range on training lands within the Eddy Drop Zone area at DTA East.
- **Alternative 3** – Construct and operate a BAX and CACTF range on training lands within the Donnelly Drop Zone area at DTA East.
- **Alternative 4** – Construct and operate a BAX and CACTF range on training lands within the North Texas Range area at DTA East.
- **Alternative 5** – Construct and operate a BAX range on training lands within the North Texas Range area and a CACTF range on training lands within the Eddy Drop Zone area at DTA East.

Alternatives Considered and Eliminated

All Army training lands within the state of Alaska were considered for siting of the proposed action. Possible locations that were considered and eliminated from detailed evaluation for the construction and use of a BAX and CACTF include Tanana Flats Training Area, DTA West,

Yukon Training Area, Gerstle River Training Area, Black Rapids Training Area, and Fort Richardson. All of these sites are shown in Appendix, Figure 2.c. Each location was evaluated to determine its capability to meet project criteria.

Tanana Flats Training Area, Fort Wainwright – This proposed site is located in the lowland area near MacDonald Creek in the southeastern portion of the FWA Tanana Flats Training Area, just southwest of the Tanana River. This potential location is unacceptable, given the lack of reasonable access to necessary electrical power and communication lines, extended time frame needed to overcome physical barriers (approximately 3.5 additional years for construction of access roads and bridges), limitations on communication frequency use, and substantially greater construction costs (approximately $75 million for the access bridge alone) than construction at a more accessible site. In addition, aero medical evacuation would be precluded under emergency situations during inclement weather. For these reasons, the Tanana Flats Training Area was eliminated from further consideration as a reasonable alternative.

West Donnelly Training Area – This proposed site is located in the lowland and lake area north of the Kansas Lakes Impact Area, near 100-Mile Creek in the northern portion of DTA West. The extensive road clearance required for access, a bridge to cross the Delta River, and the likely need to clear unexploded ordnance all serve to greatly increase construction time and cost. Project developers estimate that it would take approximately 3.5 additional years to build a bridge and access road from the Richardson Highway. For these reasons, this location was eliminated from further consideration as a reasonable alternative.

Yukon Training Area, Fort Wainwright – Yukon Training Area, which is part of FWA, lies in the Yukon-Tanana Uplands, which is characterized by rounded, even-topped, unglaciated ranges with gentle side slopes and valley floors. Ridges and high domes can reach elevations of 5,000 feet. Limiting topographic conditions at Yukon Training Area, including steep terrain characterized by numerous valleys and ridges with elevation differences of up to 5,000 feet, create the inability to obtain an adequate (and safe) line-of-sight between a Soldier firing a weapon and the intended target, to construct trafficable maneuver corridors (roads) without steep grades, and to obtain sufficient contiguous maneuver space (a large enough area not interrupted by valleys and ridges) required to locate the two ranges in close proximity to one another (co-locate). This location was eliminated from further consideration as a reasonable alternative.

Gerstle River Training Area – Gerstle River Training Area lies in a relatively flat region north of the Alaska Range and is located to the east of DTA East, approximately five miles south of the Alaska Highway. The Gerstle River Training Area site cannot accommodate the required surface danger zone for the BAX and CACTF because of limited training area size. The Gerstle River Training Area is approximately 20,000 acres, which is too small to accommodate the construction footprint, maneuver area, and surface danger zone. The combined size requirement of the proposed facility and surface danger zone is approximately 25,000 acres. This location was eliminated from further consideration as a reasonable alternative.

Black Rapids Training Area – Black Rapids Training Area is located south of DTA and lies within the Alaska Range. Black Rapids is approximately 2,780 acres and the range maneuver area cannot accommodate the required surface danger zone for the BAX and CACTF. Black Rapids Training Area is also predominately mountainous terrain and limited in its ability to

provide adequate line-of-site and maneuver corridors. This location was eliminated from further consideration as a reasonable alternative.

Fort Richardson – FRA is located near Anchorage and lies in an alluvial plain bordered by the Chugach Mountains and Cook Inlet. Currently, training lands within FRA are fully utilized, and sufficient space to accommodate additional collective live-fire facilities and the necessary surface danger zones does not exist. The Glenn Highway bisects FRA. Neither of the portions (north or south of the highway) is large enough to accommodate the BAX and CACTF. Only 4,000 acres of trainable land on North Post and 3,000 acres of trainable land on South Post are available for construction of the proposed facilities. This location was eliminated from further consideration as a reasonable alternative.

Issues of Concern

Verbal and written comments were received from Alaska Native tribes, the public, and agencies as part of the issue scoping process for this EIS in 2004. The input was used to help identify specific issues of concern and to frame the analysis of the initial Draft EIS. Potential issues were addressed in the EIS if they (1) fell within the scope of the proposed action, (2) suggested different actions or mitigations, or (3) influenced the decision on the proposed action.

In addition, the comments received on the Draft Environmental Assessment (EA) (previously obtained through public meetings in Delta Junction in February and June of 2003) are incorporated into this analysis. Based on tribal, public, and agency comments, and consistent with the goals of NEPA, this EIS concentrates primarily on the major or controversial issues of concern identified during meetings held in Delta Junction and Fairbanks. These issues include:

- **Issue 1:** Site criteria or selection of the site
- **Issue 2:** Permafrost impacts resulting from vegetation removal
- **Issue 3:** Flooding and hydrology, particularly with respect to winter ice overflow (aufeis) at Jarvis Creek
- **Issue 4:** Risk of wildfires
- **Issue 5:** Noise impacts
- **Issue 6:** Safety, as relating to the use of munitions and large convoys traveling on highways
- **Issue 7:** Seasonal moose movement and springtime migratory bird and waterfowl migration
- **Issue 8:** Impacts to cultural/historical/grave sites
- **Issue 9:** Airspace use and compatibility of range operations with other airspace users
- **Issue 10:** Army commitments to mitigations

Major or controversial issues of concern identified during the public comment period on the initial Draft EIS in 2004 (which were incorporated into the Supplemental Draft EIS), in addition to those mentioned during the scoping process, include:

- Opposition to placing range facility at Eddy Drop Zone due to close proximity to Delta Junction
- Airspace use and compatibility of range operations with other airspace users (was added to primary issues list above)

- Modifications to public access and recreation at DTA East
- Bison movement and calving near North Texas Range
- Effects of range operation on the Cold Region Test Center's mission and infrastructure
- Identification of additional wetland data informational needs for adequate submission of Clean Water Act Section 404 permit application

All but the requests for additional wetland analysis continued to be major or controversial issues identified during the Supplemental Draft EIS public comment period. These issues have been considered in detail within the Final EIS. Chapter 9 contains a summary of USARAK's responses to comments received on the Supplemental Draft EIS. Reproductions of comment letters and verbatim transcripts from the public hearings are not included in the Final EIS; however, they can be found on the USARAK Conservation website at http://www.usarak.army.mil/conservation.

Major Conclusions: Discussion of Four Alternatives Considered in Detail

Environmental Consequences

This EIS focuses primarily on those resource areas and associated issues that were identified as major concerns during the scoping and public comment processes during the development of the original EA, the initial 2004 Draft EIS, and the Supplemental Draft EIS released in 2006. It also addresses community concerns as expressed in the litigation that prompted this EIS process. The primary resources include: soil resources, surface water, fire management, noise, human health and safety, wildlife and fisheries, cultural resources, and airspace use. While this document focuses on those issues identified through public participation, the remaining resource categories are also included in the EIS: air quality, groundwater, wetlands, vegetation, threatened or endangered species and species of concern, socioeconomics, subsistence, public access and recreation, environmental justice, and cumulative effects analysis.

Initial scoping indicated that none of the proposed alternatives would have any effect on geologic resources. Thus a discussion of impacts on geology has been excluded in this document.

Analysis of the effects of the proposed action on the human environment is divided into three activity areas for each location alternative: construction footprint, maneuver area, and surface danger zone. Soldier training functions described as part of the proposed action (e.g., construction, training, and live fire) would remain constant at each alternative location.

Soil Resources (Issue 2) – Soil and permafrost would be impacted by construction and use of the BAX and CACTF at all alternative sites. Construction of these facilities would result in removal of soil, overlaying existing soils with fill for roads, targets, utility lines and structures, and short-term soil loss due to wind and water erosion during construction. Military vehicles used at the BAX would travel primarily off road and vehicle travel at the CACTF would primarily be on established roads and trails within the range complex. The potential for soil compaction as a result of off-road vehicle maneuvers exists in soils with fine sandy or silty loam surface layers. In combination with existing and proposed mitigation measures, impacts to soil compaction, storm water runoff and aquifer recharge within the maneuver area would be expected to be minor.

The majority of soils on Eddy Drop Zone are considered trafficable and able to support year-round training with military vehicles. However, soils at Alternative 3, 4 and 5 are considered not trafficable and unable to support year-round training with military vehicles without major site modification. Impacts could include soil compaction and erosion and damage to permafrost. Alternative 3 (Donnelly Drop Zone) would require the greatest amount of fill to accommodate minimum throughput and maneuverability requirements and the impacts are considered moderate. Impacts would be moderate within the maneuver area and minor within the construction footprint under all alternatives.

Impacts to permafrost would be greater at Donnelly Drop Zone and North Texas Range as these locations have higher probabilities of containing permafrost, making avoidance during construction and maneuver more difficult. Impacts from military vehicle use, even in winter, regardless of frost depth, may damage vegetation (due to low or inadequate snow cover), thus altering ground surface thermal regimes and causing thermokarst (thawing and settling of ice-rich permafrost) in sensitive permafrost areas. Initiation of thermokarst can cause soil erosion and increased sediment additions to streams and water bodies.

Surface Water (Issue 3) – Impacts to most surface water resource issues are localized and minor when compared at the watershed level. However, selection of either Alternative 2 (Eddy Drop Zone) or Alternative 3 (Donnelly Drop Zone) could result in moderate impacts to the floodplain within the BAX construction footprint and maneuver area. Construction of the BAX under Alternative 2 would be within the delineated Jarvis Creek 100-year floodplain, but facilities would be constructed so as not to impede water flow. Under Alternative 3, stream crossings of Jarvis and Ober creeks would be required. Prior to construction, pursuant to Executive Order 11988 – *Protection of Floodplains*, a determination must be made that there is no practicable alternative to constructing the project within a floodplain and that adverse impacts of doing so would be minimized (see the appendix for Draft Finding of No Practicable Alternative).

Training activities would have the potential to affect water quality from sediment additions. Sedimentation from stream crossings, bridge construction and overland travel at Ober Creek would have a moderate impact to water quality under Alternative 3. No impacts are anticipated from activities within the surface danger zones. Erosion and sediment delivery to local waterways could result from construction and use of the BAX and CACTF, regardless of which alternative is selected. Vehicle maneuver and general training activities could increase erosion into waterways, as well as increase the potential for pollutants to enter waterways. The exclusive use of training and inert munitions in all proposed locations would result in only trace deposition of munitions residues, such as propellants. The components of propellants are immobile or not persistent in the environmental conditions of DTA (low solubility, low precipitation, and frozen soil conditions). Metals would not be expected to dissolve and be mobile via surface waters or groundwater at any of the alternative locations.

Fire Management (Issue 4) – Training can cause fires through the use of incendiary devices, field burning, vehicle use, trash burning, warming fires, or other inadvertent Soldier activity in the area. The overall risk of fire starts (ignition) would increase due to the operation of the BAX and CACTF, regardless of which site location is selected. The area within Alternative 2 has been classified as being a high fire behavior hazard by the Alaska Fire Service. A severe impact would be expected as a result of operation of the BAX and CACTF at this location. High fire hazard, in combination with the location of the proposed range complex closer to Delta Junction,

would create a severe fire hazard/risk. The Donnelly Drop Zone area was assigned a moderate fire behavior hazard rating. In addition, the range would be located further from Delta Junction. Impacts would be moderate. A low to moderate fire behavior hazard rating was assigned to North Texas Range. Both Alternatives 4 and 5 would result in minor to moderate impacts at the North Texas Range location. The CACTF area within Alternative 5 has been classified as being a high fire behavior hazard by the Alaska Fire Service. Several mitigation measures have been suggested to reduce the risk of wildfire impacts to protect community residents and reduce and/or eliminate adverse impacts.

Noise (Issue 5) – Construction activities would contribute to temporary and localized increases in noise levels. The primary noise source from training would result from use of munitions. Even though the use of the 105mm Mobile Gun System and demolition in support of operations at the BAX and small arms firing at the CACTF would cause an increase in the total acreage of noise contours, it would stay within the training areas, and the land use noise restrictions are compatible with federal noise guidelines. However, this does not guarantee that training noise will not be heard in areas outside of the military boundary. The Stryker, other military vehicles, and aircraft would also contribute to increased noise levels. Any effects would be local (within the installation boundaries) and short term.

The overall impact of construction and use of the BAX and CACTF on noise at all alternative locations is minor, as average noise levels would not be heard beyond the installation boundary. Single event noise originating at Donnelly Drop Zone (typically blast noise from higher caliber weapons) would be heard by residents outside the DTA East boundary approximately 50 percent of the time during adverse weather conditions. This would be a severe impact. Single event noise would be heard less than 10 percent of the time during adverse weather conditions at the Eddy Drop Zone and North Texas Range alternatives, resulting in a moderate impact. While noise levels would increase in the areas of the proposed BAX and CACTF, they would not negatively impact noise-sensitive areas either on or off of the installation. No residential areas, schools, or hospitals would by impacted by severe noise levels.

Human Health and Safety (Issue 6) – Construction and use of the BAX and CACTF would require greater quantities of vehicular petroleum, oils, and lubricants (POL) to be used, which may lead to inadvertent releases of these substances regardless of which alternative is chosen. Deployments would require greater convoy use of highways leading to moderate traffic impacts under all alternatives. Existing range safety programs and regulations would continue to protect Soldiers and civilians from potential harm by the use of munitions during training. In addition, Army regulations require that surface danger zones (location where a preponderance of munitions will land) be contained within military installation boundaries. No unexploded ordnance would be used or produced as a result of this proposed action.

Wildlife and Fisheries (Issue 7) – Impacts to most priority mammal species are localized and minor when compared at the population level within DTA East or Game Management Unit (GMU) 20D. Direct loss of habitat would primarily occur within the construction footprint and maneuver area due to proposed range infrastructure. The impacts within the surface danger zone would be dispersed and not extensive since direct loss of habitat due to construction of buildings, roads, and targets would not occur in this area. Lanes of tall-standing vegetation within "dispersion areas" would be impacted within the surface danger zones, possibly converting some formerly forested areas to tall shrub, scrub-shrub, or early seral habitats. Selection of

either Alternative 4 (North Texas Range) or Alternative 5 (North Texas Range/Eddy Drop Zone) could result in a severe impact to the Delta bison herd. Construction of the ranges and subsequent training could cause a significant change in distribution patterns leading to increased crop depredation on the Delta Agricultural Project (located northeast of DTA East). In addition, training activities would have the potential to affect the population dynamics of the herd. Restrictions imposed by Army regulations and agreements with the state of Alaska for the protection of the Delta bison herd obligates the Army to cease firing operations in the direction of bison, if present. The need to protect the bison herd has the potential to limit, if not prevent, firing operations at the BAX and CACTF any time bison are present (generally between mid-February and mid-August of each year).

Likewise, the impacts to most priority bird species would be minor for each alternative. However, sandhill cranes and trumpeter swans could be moderately impacted by selection of either Alternative 4 (North Texas Range) or Alternative 5 (North Texas Range/Eddy Drop Zone). Sharp tail-grouse would be moderately affected by range construction and training activities at Eddy Drop Zone, thus there would be moderate impacts with the selection of Alternative 2 and Alternative 5.

Impacts to fisheries would be minor, but locally moderate impacts could occur to wood frog habitat with Alternative 2 (Eddy Drop Zone), locally severe impacts with Alternatives 3 (Donnelly Drop Zone) and 4 (North Texas Range), and locally minor impacts with Alternative 5 (North Texas Range/Eddy Drop Zone Combination).

Cultural Resources (Issue 8) – The inherent nature of cultural resources makes any impact potentially irreversible and the data that is lost irretrievable. The construction of the BAX would have an impact on one cultural resource eligible for the National Register of Historic Places. The construction of the CACTF would have no impact on cultural resources as no sites are located within the construction footprint. Use of the BAX and CACTF would cause degradation and disturbance to cultural resources. Vehicle traffic could disturb unprotected sites at Donnelly Drop Zone, with the potential to impact 5-10 percent of total archaeological sites within DTA East. This would be a moderate impact. Less then 5 percent of the total sites would be impacted at Eddy and North Texas, resulting in a minor impact. Severe impacts would be expected within both the Eddy Drop Zone and Donnelly Drop Zone surface danger zones due to target location and a greater number of archaeological sites. Both surface and subsurface sites would be adversely affected by the surface impact of a fired munition. The degree of impact to archaeological sites within the surface danger zone would vary with the size and type of munition. Disturbance to subsurface sites would be more likely with the use of larger sized munitions, as they create larger impact craters. Eligible sites that may be impacted once the range is in use would require appropriate mitigation.

Airspace (Issue 9) – No changes to current airspace and airfield restrictions at DTA are proposed as a part of this action. Procedures established for existing restricted airspace would continue to apply to all aircraft, including Unmanned Aerial Vehicle operations. No additional restricted airspace areas are proposed as part of the construction and use of the BAX and CACTF. During training at the BAX and CACTF under Alternatives 2 (Eddy Drop Zone) and 3 (Donnelly Drop Zone), a Controlled Firing Area (CFA) or a Small Arms Range Safety Area (SARSA) would be designated and activated prior to conducting any activity over 45 meters above ground level (to include ricochet ordnance). Responsibilities during use of a CFA or SARSA require the Army

to provide for the safety of persons and property at ground surface and for the safety of aircraft transiting through these areas. A CFA or SARSA does not prohibit an aircraft from crossing the area. Firing would be suspended whenever an aircraft approaches the area in order not to impede general aviation traffic. The military unit using the range complex has the obligation to ensure the safety of the general public. Under the North Texas Range and Combination alternatives (4 and 5), training and closure of the restricted airspace would be more frequent, but within existing evaluated parameters.

Air Quality – Construction of the BAX and CACTF and the operation of stationary and mobile emission sources during training could affect air quality. Dust generation resulting from construction would be temporary and localized and would not result in any long-term impact to ambient air quality. The Regional Haze Rule regulates impacts to visibility and prohibits impacts to Class I areas. Although DTA is within a Class II area, it is in close proximity to a Class I area (Denali National Park). Use of the BAX and CACTF at the Eddy Drop Zone alternative would have the least impact to the Class I area. The Donnelly Drop Zone alternative has more visibility impacts to Denali National Park than Eddy Drop Zone but less than North Texas Range. Impacts would be moderate under each alternative. These impacts are only predicted to occur on best visibility days, depending on prevailing wind directions. However, direct visibility of Denali National Park is not possible from DTA East.

Emissions from mounted training exercises were modeled, and all pollutant concentrations were below the National Ambient Air Quality Standards (NAAQS) at both the Eddy Drop Zone and Donnelly Drop Zone alternatives. Initial modeling indicated that the 24-hour PM_{10} NAAQS would be violated at the North Texas Range alternative. A more complex model would be used to refine the analysis and determine more accurately if the standard would be violated. Impacts from fog oil and obscurant smoke utilization will vary slightly for each alternative because of their proximity to the installation boundary and other sensitive areas.

Groundwater – Construction of the BAX and CACTF may affect groundwater resources. Construction that does not occur on previously disturbed or paved areas would increase the amount of direct runoff to surface waters, increasing the surface flow and possibly diverting flow from local groundwater, or reduce percolation and groundwater recharge. However, impacts to groundwater flow would be minor. Ongoing use of the BAX and CACTF has the potential to degrade groundwater quality, possibly through inadvertent release of chemicals that could leach into groundwater. Isolated alterations of permafrost may lead to decreases in water levels of local perched ponds, which are reliant on groundwater recharge. The impact would be minor and expected to occur in areas with higher amounts of permafrost.

Wetlands – Wetlands would be impacted by construction and use of the BAX and CACTF at all alternative locations, as it would be impossible to locate the proposed ranges to completely avoid wetlands and still meet established range design, siting, and operational criteria. Prior to the potential construction of the range facilities, USARAK would submit an individual Clean Water Act, Section 404 permit application, detailing exact amounts of wetlands to be filled, acres affected, and proposed mitigation measures. Impacts to wetlands would be localized when compared to all wetlands within DTA East. However, selection of Alternatives 3 or 4 could result in severe impacts to higher function wetlands within the BAX construction footprint. Severe adverse impacts would be obvious and would occur on greater than 10 percent of higher function wetlands within the range maneuver area. Much of Alternatives 3, 4, and 5 maneuver

areas contain wetlands and are unable to support minimum military vehicle throughput and maneuverability requirements. Filling of wetlands would be required and impacts would be moderate to severe. Clearing and fill of wetlands could result in removal of flood storage, filtration and habitat functions, disturbance of natural drainage patterns, and loss of floodplain area.

Impacts as a result of off-road vehicle maneuvers can also be anticipated, and would likely be localized near targets, roads, and trails. The exact locations of maneuver impact cannot be predicted. As a result, a worst case scenario predicting wetland disturbance throughout the entire maneuver area was used in this analysis. Maneuver (operation) impacts could be destruction of vegetation and soil structure from foot and vehicle traffic, with resulting erosion and potential melting of permafrost and draining of wetland soils and long-term vegetation manipulation (mowing and firing lane maintenance). In combination with existing and proposed mitigation measures, including wetland avoidance, maneuver impacts to wetlands would be expected to be lower than predicted. Wetlands would be considered in the final engineering plans and layout of all range components and would be avoided to the greatest extent possible. No impacts are anticipated from activities within the surface danger zones as no fill or damage is expected to occur.

Vegetation – Construction of the BAX and CACTF would eliminate all vegetation in limited, well-defined locations. Less than 1 percent of the total vegetative cover at DTA East would be removed as a result of the proposed action (between 350 and 800 acres impacted, depending on site location) within the construction footprint (a minor impact). Areas directly affected by construction would be re-seeded with native grass and would eventually become re-vegetated by other species, unless specifically maintained as grass by frequent mowing. Maneuver impacts would be dispersed, temporary, and ultimately mitigated through Army environmental programs. Less than 5 percent of the total vegetative cover at DTA East would be impacted within the maneuver area (a minor impact). Areas continually affected by range use would most likely convert from a forested area to a shrub-scrub dominated landscape. Subsequent range use would most likely eliminate the tree component that remains in a larger area, defined by firing lanes around targets within the range complex and the surface danger zone.

Threatened or Endangered Species and Species of Concern – No federal or state threatened, endangered or proposed plant or animal species are found within or near lands used by USARAK. Although the American peregrine falcon was delisted as an endangered species in 1999, the U.S. Fish and Wildlife Service (USFWS) requests consultation on any projects that may hinder their recovery. The installation is within their breeding range, and they have been known to nest at one location along the east bluff of the Delta River (Mason 2005). Proposed activities will have no effect on the recovery of the peregrine falcon in this area.

Several species of concern are found on DTA. No significant adverse impacts are expected to occur to species of concern. Moderate impacts may occur to white-winged crossbill, Townsend's warbler, and blackpoll warbler due to localized loss of habitat and increased disturbance rates under Alternatives 2 and 3. Moderate impacts to Townsend's warbler and blackpoll warbler could occur under Alternatives 4 and 5.

Socioeconomics – Positive short-term monetary, construction and operational impacts would occur as a result of the construction and operation of a BAX and a CACTF, and would be beneficial to the Delta Junction community. Impacts from construction of the ranges consist of short-term employment and income effects, depending upon the skills required and the ability of the local economy to provide them. After completion of the construction phase, impacts would be attributable to the employment of staff (full-time, part-time, or contractor) operating the ranges, the military (Soldiers) utilizing the ranges, and local procurements for supplies and services. The impacts to the local quality of life would be beneficial overall due to increased employment and monetary contributions to local economy, although some negative impacts can be expected from recreational access restrictions.

Subsistence – Range construction may affect local wildlife species: moose could benefit from clearing, but forest species and bison may be negatively affected. Training closures would limit resource harvest on USARAK lands. This impact is expected to be minor because alternate areas within DTA and other adjacent, accessible federal lands would still be available for access to subsistence resources, including wildlife, fish, and plants.

Public Access and Recreation – Construction and use of the BAX and CACTF could affect local game populations and could reduce recreational opportunities or areas. Impacts to time availability, hunting, fishing and trapping would occur on USARAK lands. In order to meet necessary training and maintenance needs, and protect equipment and facilities and ensure public safety, a permanent closure of the BAX and CACTF construction footprint and maneuver area to the public would occur. The associated surface danger zone would be closed to public access for approximately 238 days. These closures would be a moderate impact (a portion of the range would be closed between 34 percent and 65 percent of the year [121 to 240 days]). The remaining portions of DTA East would be available for public access and recreation when military training is not occurring. Several access roads would be closed under each alternative, reducing the amount of recreational area available to the public. Under Alternatives 4 and 5, closure of Meadows Road would likely cause ADF&G to stop stocking popular local fishing ponds, causing recreational expansion into other already heavily used wild stock and stocked fisheries in the area.

Environmental Justice – Moderate environmental justice impacts to minority and Alaska Native populations near DTA could occur. Moderate impacts include those to local tribes associated with cultural sites. Possible impacts may result to wildlife populations, migration patterns, and to the accessibility of USARAK lands for subsistence activities. Overall impacts are minor to low-income communities and moderate to Alaska Native communities. No impacts are expected to minority communities and children.

Cumulative Effects Analysis – Cumulative effects analyses (CEA) were conducted using methodology suggested by the Council on Environmental Quality. The CEA evaluated each environmental resource or issue discussed in this EIS. Based on a series of "Quick Look" questions for each resource or issue, three levels of CEAs were used depending on the potential significance of the direct, indirect, and cumulative effects: detailed analysis, analysis and discussion, and quick look. Fire management, wildlife and fisheries, wetlands, and public access and recreation were given a detailed analysis. The CEA for surface water, cultural resources, vegetation, and subsistence included the quick look questions plus a discussion of the cumulative

effects. Finally, soil resources, noise, human health and safety, airspace, air quality, groundwater, threatened and endangered species and species of concern, socioeconomics, and environmental justice were evaluated with quick look questions and a short summary of the cumulative effects, as no potentially significant cumulative effects were predicted.

The fire management CEA concluded that human activities could increase the risk and intensity of wildfires. In addition, the potential severity and extent of wildfire effects could be extensive and far-reaching from both regional development and population growth and from military activities at DTA. The CEA for wildlife and fisheries concluded that significant cumulative effects could impact the distribution and management of the Delta bison herd, as well as management of the stocked lakes along Meadows Road. Moderate cumulative effects could occur to higher function and other wetlands on DTA East. Finally, the CEA for public access and recreation indicated a significant impact to fishing at the stocked lakes along Meadows Road. However, no significant cumulative effects were expected to other recreational activities, including hunting and fishing at other locations. Mitigation (discussed in the respective sub-sections of Chapter 4) could alleviate the severity of the significant cumulative effects.

Conclusion

The NEPA process requires the Army to consider the environmental impacts of the construction and operation of a proposed BAX and CACTF range complex. As part of the NEPA process, the FEIS explains the purpose and need for the proposed action, decision to be made, issues of concern, comparison of alternatives, environmental consequences, and reasonable and practicable mitigation measures. While initially considering nine sites within the entire Army training-land inventory in Alaska, further analysis suggested that three alternative sites were feasible, acceptable, and supportable for Army training needs. After a detailed review of environmental conditions and potential impacts, only one site (Eddy Drop Zone) proved practicable. A fifth alternative, *No Action*, is also analyzed. The analyses of alternatives takes into account Army training requirements and input from Alaska Native tribes, citizens, and public agencies. The Commander will use the specific public, agency, and Alaska Native tribe input on the five alternatives to assist him in making a decision best supporting Soldier training while also considering and mitigating environmental impacts.