Joint Pacific Alaska Range Complex

Environmental Impact Statement for the Modernization and Enhancement of Ranges, Airspace, and Training Areas in the Joint Pacific Alaska Range Complex in Alaska

Executive Summary

Final **June 2013**

How to Use This Document

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

2,4-DNT	2,4 dinitrotoulene
11th AF	11th Air Force
354 FW	354th Fighter Wing
AAC	Alaska Administrative Code
AADT	annual average daily traffic
AAF	Army Airfield
AAR	after-action review
AAW	Anti-Air Warfare
ABCT	Airborne Brigade Combat Team
ACMAC	Alaska Civil/Military Aviation Council
ACMI	air combat maneuvering instrumentation
ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection and Health
AGL	above ground level
AGM	air-to-ground missile
AHERA	Asbestos Hazard Emergency Response Act
AIRFA	American Indian Religious Freedom Act
AK	Alaska
ALCOM	Alaskan Command
AMHS	Alaska Marine Highway System
ANCSA	Alaska Native Claims Settlement Act
ANG	Air National Guard
ANILCA	Alaska National Interest Lands Conservation Act
AOHA	Alaska Office of History and Archaeology
APEX	Alaska Predator Ecosystem Experiment
AR	Army Regulation
ARTCC	Air Route Traffic Control Center
ASCG Inc.	ASCG Incorporated of Alaska
ATC	Air Traffic Control
ATCAA	Air Traffic Control Assigned Airspace
BASH	bird/wildlife-aircraft strike hazard
BAX	Battle Area Complex
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	best management practice
BRTA	Black Rapids Training Area
CAB	Combat Aviation Brigade
CACTF	Combined Arms Collective Training Facility
cal	caliber
CALFEX	Combined Arms Live-Fire Exercises
CAS	Close Air Support
CDNL	C-weighted day-night average sound level
CDP	census-designated place
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFA	Controlled Firing Area
CFR	Code of Federal Regulations
CH_4	Methane
CHA	Critical Habitat Area

CO	carbon monoxide
CO_2e	carbon dioxide equivalent
COA	Certificate of Authorization
COMSUBPAC	Commander Submarine Force, U.S. Pacific Fleet 2
CONOPS	Concept of Operations
CONUS	contiguous United States
Councils	Fishery Management Councils
CRMP	Cultural Resources Management Plan
CRTC	Cold Regions Test Center
CSP	Contaminated Sites Program
CUA	Controlled Use Area
CWA	Clean Water Act
dB	decibel
dB PK 15(met)	single-event peak level exceeded by 15 percent of events
DCED	Department of Commerce and Economic Development
DERP	Defense Environmental Restoration Program
DJMA	Delta Junction Management Area
DMPTR	Digital Multi-Purpose Training Range
DNL	day-night average sound level
DoD	U.S. Department of Defense
DODIC	U.S. Department of Defense Identification Code
DOI	U.S. Department of the Interior
DOPAA	Description of Proposed Action and Alternatives
DOT/AAHSTO	Department of Transportation/American Association of State Highway and Transportation Officials
DPS	Distinct Population Segment
DTA	Donnelly Training Area
DZ	Drop Zone
EA	environmental assessment
EB	Engineer Brigade
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EGMS	Enhanced Access to Ground Maneuver Space
EIAP	environmental impact analysis process
EIS	environmental impact statement
EISA	Energy Independence and Security Act
EN BDE	Engineer Brigade
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERC	Eielson Range Control
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
ETAP	Eastern Tanana Area Plan
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FCC	Federal Communications Commission
FHWA	Federal Highway Administration
FIA	forest inventory and analysis
Final Alaska MOA EIS	Final Environmental Impact Statement, Alaska Military Operations Areas
FL	flight level
FNSB	Fairbanks North Star Borough
FOF	Force-on-Force
FONSI	Finding of No Significant Impact
FOT	Force-on-Target
Fox 3/Paxon MOA	Fox 3 MOA Expansion and New Paxon MOA
FRTR	Full Range Training Round

FSO	Full-Spectrum Operations
FSS	Flight Service Station
FTX	field training exercises
GAP	Gulf APEX Predator-Prey Project
GBU	Guided Bomb Unit
GHG	greenhouse gas
GIS	geographic information system
GMU	Game Management Unit
GOA	Gulf of Alaska
GOA EIS/OEIS	*The Gulf of Alaska Navy Training Activities Final Environmental Impact Statement/Overseas Environmental Impact Statement*
GPS	global positioning system
Ground Maneuver	Enhanced Access to Ground Maneuver Space
GRTA	Gerstle River Training Area
Guidance	"DoD American Indian/Alaska Native Policy: Alaska Implementation Guidance"
GVEA	Golden Valley Electric Association
HAMMR	High Angle Mountain Marksmanship Range
HAP	hazardous air pollutant
HMX	High Melting Explosive
HTRW	hazardous, toxic, and radioactive waste
IBCT	infantry brigade combat team
ICDS	Improved Container Delivery System
ICRMP	Integrated Cultural Resources Management Plan
IFR	Instrument Flight Rules
INRMP	Integrated Natural Resources Management Plan
IR	Illumination Round
IRO	Installation Range Office
IRP	Installation Restoration Program (DoD)
ISB	Intermediate Staging Base
ISR	Intelligence Surveillance Reconnaissance
ITAM	Integrated Training Area Management
JAGIC	Joint Air–Ground Integration Complex
JBER	Joint Base Elmendorf-Richardson; combination of Elmendorf AFB and Fort Richardson
JCALF	Joint Combined Arms Live Fire
JDAM	Joint Direct Attack Munition
JIIM	Joint Interagency, Intergovernmental, and Multinational
JLUS	Joint Land Use Study
JPADS	Joint Precision Airdrop System
JPARC	Joint Pacific Alaska Range Complex
JPARC Master \ Plan	JPARC Master Plan, August 2011
JPARC Modernization and Enhancement EIS	*Environmental Impact Statement for the Modernization and Enhancement of Ranges, Airspace, and Training Areas in the Joint Pacific Alaska Range Complex in Alaska*
KAC	Knik Arm Crossing
km	kilometer
km^2	square kilometers
KTAS	knots true airspeed
kV	kilovolt
LAS	Land Administration System
LATN	low-altitude tactical navigation
lb	pound
L_{dnmr}	onset rate–adjusted day-night average sound level
LFE	large force exercise

LGB	laser-guided bomb
L_{max}	maximum noise level
LOS	Level of Service
LRAM	Land Rehabilitation and Maintenance
LUPZ	Land Use Planning Zone
LVC	Live-virtual-constructive
M	mach
MBTA	Migratory Bird Treaty Act
MDS	mission design series
MEA	Minimum Enroute Altitude
MFE	major flying exercise
MG	machine gun
MGS	mobile gun system
Missile Live-Fire	Missile Live-Fire for AIM-9 and AIM-120 in the Gulf of Alaska
MK	mark
mm	millimeter
MMPA	Marine Mammal Protection Act
MOA	Military Operations Area
MOCA	Minimum Obstacle Clearance Altitude
MOO	Mineral Opening Order
MOU	Memorandum of Understanding
MOUT	Military Operations on Urban Terrain
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act of 1976
MSL	(above) mean sea level
MTR	Military Training Route
MVA	megavolt ampere
MW	megawatts
MWe	megawatts electrical
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NCA	Northern Control Area
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NJT	Night Joint Training
NLR	noise level reduction
NM	nautical mile
NM^2	square nautical mile
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NORAD	North American Aerospace Defense Command
NOTAM	Notice to Airmen
NOTMAR	Notice to Mariners
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPFMC	North Pacific Fishery Management Council
NRCS	National Resources Conservation Service
OCRM	Office of Ocean and Coastal Resource Management
OEIS	Overseas Environmental Impact Statement
ORRV	off-road recreational vehicle
ORV	off-road vehicle
PA	Programmatic Agreement
PACOM	U.S. Pacific Command
PCB	polychlorinated biphenyl
PLO	Public Land Order
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
POL	petroleum, oil, and lubricant products
ppm	parts per million
PRMP/FEIS	Proposed Resource Management Plan/Final

	Environmental Impact Statement
PSD	prevention of significant deterioration
PUA	Public Use Area
R-	Restricted Area; e.g., Restricted Area 2202 (R-2202)
RCRA	Resource Conservation and Recovery Act
RDX	Royal Demolition Explosive
RF	radio frequency
RLOD	Realistic Live Ordnance Delivery
RMA	Resource Management Area
RMP	Resource Management Plan
RNAV	Area Navigation
ROD	Record of Decision
ROI	region of influence
RPA	remotely piloted aircraft
RS	Revised Statute
RST	(indicates a trail number)
RTLA	Range and Training Land Assessment
S&I	flare safe & initiation (device)
SBCT	Stryker Brigade Combat Team
SDB	Small Diameter Bomb
SDZ	surface danger zone
SEL	sound exposure level
SFR	State Forest
SHPO	State Historic Preservation Officer
SI	International System of Units
SO_2	sulfur dioxide
SOP	standard operating procedure
SP	State Park
SRA	State Recreation Area
SRC	State Recreation Center
SRR	State Recreation River
SRS	State Recreation Site
STC	Sound Transmission Class
STIP	Statewide Transportation Improvement Program
SUA	Special Use Airspace
SUAIS	Special Use Airspace Information Service
SWPPP	Storm Water Pollution Prevention Plan
TA	Training Area
TCP	traditional cultural property
TFTA	Tanana Flats Training Area
TFTA Access	Tanana Flats Training Area Roadway Access
TMAA	Temporary Maritime Activities Area
TNT	trinitrotoluene
TOW	tube-launched, optically-tracked, wire-command data link, guided missile
TPT	target practice tracer
TRACON	Terminal Radar Approach Control
TRI	Toxic Release Inventory
TRI-DDS	Toxic Release Inventory Data Delivery System
TSCA	Toxic Substances Control Act
U.S.C.	United States Code
UAS	unmanned aircraft system
UAV	Unmanned Aerial Vehicle
UAV Access	Unmanned Aerial Vehicle Access
UNK	Unknown
USACE	U.S. Army Corps of Engineers
USAGAK	U.S. Army Garrison-Alaska (now renamed USAG-FWA)
USAG-FWA	U.S. Army Garrison Fort Wainwright, Alaska
USARAK	U.S. Army Alaska
USARTRAK	Army Recreational Tracking System
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

USGS	U.S. Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
VFR	Visual Flight Rules
VMT	vehicle miles of travel
VOC	volatile organic compound
VORTAC	Fairbanks navigational aid
VR-	Visual Flight Rules Route
W-	Warning Area; e.g., Warning Area 612 (W-612)
WDZ	weapon danger zone
YTA	Yukon Training Area

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This *Environmental Impact Statement for the Modernization and Enhancement of Ranges, Airspace, and Training Areas in the Joint Pacific Alaska Range Complex in Alaska* (the *JPARC Modernization and Enhancement EIS*) is prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [U.S.C.] 4321 *et seq*.); the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500–1508); Executive Orders (EOs) 11514 and 11991; and the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 *et seq*.).

The U.S. Departments of Army and the Air Force are the joint lead Federal agencies for this Environmental Impact Statement (EIS). The Environmental Analysis of Army Actions (32 CFR 651) and the Air Force Environmental Impact Analysis Process (32 CFR 989) have been used to prepare this EIS, in addition to NEPA and CEQ regulations noted above. The Federal Aviation Administration (FAA) is a cooperating agency based in part on the U.S. Department of Defense (DoD) FAA Memorandum of Understanding (MOU) found in Appendix 7 of FAA Order 7400.2 that states, "When the DoD proposes that the FAA establish, designate, or modify SUA [Special Use Airspace], the FAA shall act as a cooperating agency for the evaluation of environmental impacts."

The Army and Air Force organizations in Alaska responsible for the preparation of this EIS include U.S. Army Alaska (USARAK) and the 11th Air Force (11th AF), as coordinated by the Alaskan Command (ALCOM). ALCOM is a regional military command of the United States Armed Forces focusing on the State of Alaska and is a sub-unified command of the U.S. Pacific Command (PACOM).

The Joint Pacific Alaska Range Complex (JPARC), is composed of the military land ranges, maritime training areas, and airspace that provide critical training and testing environment to the DoD Service units based in Alaska. Specifically, today, the JPARC is composed of approximately:

- 65,000 square miles of available airspace.
- 2,490 square miles of land space with 1.5 million acres of maneuver land.
- 42,000 square nautical miles (NM^2) of sea and air space in the Gulf of Alaska (GOA).

The DoD Services include the U.S. Air Force, Army, Coast Guard, Marine Reserves, and Navy. JPARC provides a realistic training environment and allows the Services to train for full spectrum engagements, ranging from individual skills to complex, large-scale joint engagements. Each year, thousands of people from the U.S. military Services; Federal, State and local agencies; allied nations; and nongovernmental organizations receive training in the JPARC.

Pursuant to guidance and philosophy found in DoD Directive 1322.18, *Military Training*, and in the Commander PACOM's Alaska Joint Training Program of Excellence, the ALCOM, as the DoD's regional joint headquarters in Alaska, has coordinated with the Services to develop a strategy to identify joint training opportunities in Alaska, maximize the utilization of training resources, and improve joint context training at all levels. The *JPARC Modernization and Enhancement EIS* will evaluate the potential environmental impacts for the reasonably foreseeable proposed projects associated with this strategy.

ES.2 PURPOSE AND NEED FOR THE PROPOSED ACTIONS

ES.2.1 Purpose of the Proposed JPARC Actions

As joint war fighting doctrine has developed since the end of the Cold War and after September 11, 2001, as new weapons systems and platforms come on-line, and as joint context training has evolved, JPARC, under its current configuration, can no longer fully meet the training and testing requirements for forces stationed in, and exercises occurring in and near, Alaska. The purpose of the JPARC proposed actions is to modernize and enhance JPARC in Alaska and to best support the military exercises in and near Alaska. JPARC modernizations and enhancements would enable realistic joint training and testing to support emerging technologies, respond to recent battlefield experiences, and train with tactics and new weapons systems to meet combat and national security needs.

ES.2.2 Need for Action

The JPARC modernization and enhancement proposed actions are needed to provide a training environment with the capacity and capabilities to fully support required training tasks for operational units participating in joint exercises. Four trends drive the need to modernize and enhance JPARC:

- Technological advances in military equipment and systems
- Advances in combat tactics and techniques
- A continued need for diversified, efficient, and realistic training
- The need to maximize the utility of scarce resources and increase joint training through common infrastructure

ES.3 JPARC OVERVIEW

JPARC consists of all air, land, and sea training capacity and assets in Alaska. This includes, but is not limited to, the ranges, training areas, restricted areas, and Military Operations Areas (MOA) associated with Fort Greely; Fort Wainwright; Joint Base Elmendorf-Richardson (JBER); Eielson Air Force Base (AFB); Donnelly, Tanana Flats, Yukon, Gerstle River, and Black Rapids Training Areas; and the U.S. Navy's Temporary Maritime Activities Area (TMAA) located in the GOA. MOAs are airspace designated to separate or segregate certain nonhazardous military activities from non-military aircraft and are not always in use. Restricted areas contain hazardous activities, therefore, flight within this airspace, while not prohibited, is subject to restriction.

JPARC supports local training for USARAK; the 3rd Wing, 673rd Air Base Wing, and 354th Fighter Wing of the Air Force; the Navy's Pacific Fleet; the Alaska Army and Air National Guards; the Coast Guard; and the Marine Reserves. It is home to Joint Chiefs of Staff Exercises NORTHERN EDGE and RED FLAG–Alaska, two large-scale and critically important tactical-level field training exercises (FTXs). JPARC also supports numerous Air Force units in their routine qualification training in conjunction with their deployment to Alaska to participate in RED FLAG—Alaska, the Army's Cold Regions Test Center and the U.S. Missile Defense Agency, along with other homeland defense missions and exercises such as Joint Chiefs of Staff Exercise ARCTIC EDGE.

ES.3.1 JPARC Master Plan

The *JPARC Master Plan* compiled all of the training and testing requirements for military units and DoD-sponsored exercises in the State of Alaska and provides a long-term 30-year strategy to coordinate

and deconflict military range and airspace developments. Based on these requirements, the August 2011 *JPARC Master Plan* identified 21 distinct objectives for the modernization and enhancement of JPARC. The objectives were then developed into the following 19 actions, which are existing planning efforts, new actions, or potential future actions that require additional planning. These actions fulfill capabilities needed immediately by the multiple military units and the exercises they conduct in the State of Alaska but are in different stages of planning. The *JPARC Master Plan* is a living document that will continue to respond to the evolving nature of military training and testing requirements.

- Fox 3 MOA Expansion
- Joint Combined Arms Live Fire (JCALF)
- Enhanced Ground Maneuver Space
- Tanana Flats Training Area (TFTA) Roadway Access
- Intermediate Staging Bases (ISBs)
- Urban Target Set
- Joint Precision Airdrop System (JPADS)
- Digital Range Connectivity
- Paxon MOA Addition
- Night Joint Training (NJT)
- Complex Urban Terrain
- Missile Live-Fire for AIM-9 and AIM-120
- Helicopter Gunnery
- Realistic Live Ordnance Delivery (RLOD)
- Unmanned Aerial Vehicle (UAV) Access
- Joint Air–Ground Integration Complex (JAGIC)
- Low-Altitude Tactical Navigation (LATN) Training
- Additional Dry Targets
- High Angle Mountain Marksmanship Range (HAMMR)

ES.3.2 Screening for National Environmental Policy Act Analysis

The Master Plan actions underwent a rigorous screening process to gauge which projects would be considered definitive and which would be considered programmatic for this EIS analysis. This screening process also identified projects independent from this EIS but important to analyze as cumulative impacts.

Because the proposed actions analyzed in this EIS are in various stages of development and have varying timelines for implementation, this EIS has two levels of decisions—programmatic and definitive. Programmatic decisions will be announced in the Record of Decision (ROD) for proposed actions that have adequate detail for analysis of a general capability, but have flexibility relative to location or level of use. Also, actions that are currently not identified for funding or that would take many years to implement will be evaluated programmatically. This class of decisions would form the basis for "tiering" future environmental analyses once actions are more fully defined or are closer to the time of

implementation. Definitive (i.e., specific, project-level) decisions will be included in the ROD for proposed actions that have sufficient definition to allow detailed EIS analysis. Decisions may incorporate specific mitigation measures identified in the analysis to avoid, reduce, or implement management actions to mitigate significant adverse impacts. This EIS will serve to support the decision for this class of actions.

This EIS does not include several objectives in the Master Plan that are not yet fully defined. While it is important to include all requirements (either known or conceptual) in planning the future vision for JPARC, it is premature to include projects in this EIS if there is not enough information to analyze their impacts. As these concepts gain more definition and development, they will undergo an environmental impact analysis process in the future. Other projects in the Master Plan, generally smaller in scope, are currently undergoing evaluation and will be considered in separate NEPA documents. These projects are considered in the cumulative impacts analysis in Chapter 4.0.

The following actions are in advanced stages of planning (See Figure 1-4). They will be analyzed in separate NEPA documentation but will be incorporated in the cumulative impact analysis of the *JPARC Modernization and Enhancement EIS*:

- LATN Training (Air Force)
- Urban Target Set (Army)
- Additional Dry Targets (Air Force)
- HAMMR (Army)
- Helicopter Gunnery (Army)

The following well-defined actions are ripe for decision and have been specifically addressed in the JPARC Modernization and Enhancement EIS as definitive actions by Army or Air Force proponents (See Figure 1-4):

- Fox 3 MOA Expansion (Air Force)
- Paxon MOA Addition (Air Force)
- RLOD (Air Force)
- Battle Area Complex (BAX) Restricted Area Addition (Army)
- Expansion of R-2205 to Include the Digital Multi-Purpose Training Range (DMPTR) (Army)
- NJT (Air Force)
- UAV Access (Army)

The following actions need additional planning or are preceded by independent actions and have been analyzed programmatically with as much detail as is available in the *JPARC Modernization and Enhancement EIS* (See Figure 1-4):

- Enhanced Access to Ground Maneuver Space (Army)
- TFTA Roadway Access (Army)
- Intermediate Staging Bases (ISBs) (Army
- JAGIC (Army)

- Missile Live-Fire for AIM-9 and AIM-120 (Air Force)
- JPADS (Air Force)

Final decisions with respect to NEPA on the programmatic actions will require subsequent tiered or supplemental environmental impact analyses.

The following actions have been considered as potential proposed actions, but have not been carried forward in the *JPARC Modernization and Enhancement EIS*:

- **Digital Range Connectivity.** Digital range connectivity is a general requirement rather than a specific action. It describes an objective that applies to all projects rather than a specific or programmatic decision for any single project or group of projects. Connections and infrastructure will be incremental, and will be included over time as needed to support ranges and new facilities.
- **Complex Urban Terrain.** The Army is only beginning to understand how to train for this critical challenge to current operations. As doctrine, funding, and risk mitigation are developed, this training will become central to deploying forces into combat. Until then, decisions on where to conduct this training are premature.

ES.4 DESCRIPTION OF PROPOSED ACTIONS AND ALTERNATIVES

The actions being proposed to achieve the vision for JPARC are briefly described below and more thoroughly described in Chapter 2.0 of the EIS. These actions are independent of each other and have standalone value for improving Army and Air Force training exercises.

NEPA implementing regulations provide guidance on the consideration of alternatives in an EIS. These regulations require the decision maker to consider the environmental effects of the Proposed Action and a range of alternatives to the Proposed Action (40 CFR 1502.14). The range of alternatives includes reasonable and practicable alternatives, which must be rigorously and objectively evaluated, as well as other alternatives that may meet the purpose and need of the *JPARC Modernization and Enhancement EIS*. To be "reasonable," an alternative must meet the stated purpose of and need for the Proposed Action. To be "practicable," an alternative must be able to be fully implemented as a JPARC modernization or enhancement project. For purposes of this EIS, the No Action Alternative serves as the baseline level of operations, representing the regular and historical level of JPARC training activity. Consequently, the No Action Alternative stands as no change from current baseline levels of training usage. The potential impacts of the current level of training (defined by the No Action Alternative) is compared to the potential impacts of activities proposed under each alternative. The purpose of including a No Action Alternative in environmental impact analyses is to ensure that the Army and Air Force compare the potential impacts of the proposed JPARC modernization and enhancement proposals to the known impacts of maintaining the status quo.

ES.4.1 Definitive Actions Evaluated in this Environmental Impact Statement

Fox 3 MOA Expansion and New Paxon MOA (Figure 2-1 and Figure 2-2): The Air Force proposes to expand the existing Fox 3 MOA and establish a new, adjacent Paxon MOA to provide the vertical and horizontal airspace structure needed to better accommodate low-altitude threat and multi-axis aircraft training mission requirements during JPARC training exercises. The Air Force intends to consider the following alternatives, as well as a No Action Alternative: **Alternative A** includes the proposed expanded Fox 3 MOA and the proposed new Paxon MOA with both the high- and low-altitude MOAs. The Fox 3 MOA would be stratified into low (500 feet above ground level [AGL] up to but not including 5,000 feet AGL) and high (5,000 feet AGL up to but not including FL180) sectors, while the Paxon MOA would be

stratified into low (500 feet AGL up to but not including 14,000 feet above mean sea level [MSL]) and high (14,000 feet MSL up to but not including FL180) sectors. **Alternative E (Preferred Alternative)** is the same as Alternative A, except the airspace structure for the Fox 3 MOA expansion coverage would be approximately 1.164 million acres (1,820 square miles) smaller in size, with the southern boundary moved approximately 20 NM to the north.

Realistic Live Ordnance Delivery (Figure 2-3 through Figure 2-5): As the range and lethality of modern Air Force fighter aircraft and ordnance increase, so do the amounts of training area, training time, and airspace required to safely and effectively train with these weapons. The current ranges and restricted airspace of JPARC are not capable of supporting realistic training with modern and emerging aircraft and ordnance. The Air Force proposes to establish a realistic air and ground training environment that would accommodate live ordnance delivery of modern and emerging fighter aircraft by considering the following alternatives, as well as a No Action Alternative: **Alternative A (Preferred Alternative)** proposes the use of existing targets in the Oklahoma Impact Area within Restricted Area 2202 (R-2202), with the expansion of this restricted airspace to the west to encompass the airspace and underlying lands for both live and inert ordnance delivery. **Alternative B** proposes that live ordnance delivery be conducted on existing targets in the Oklahoma Impact Area and that inert ordnance delivery be conducted in the Blair Lakes Impact Area, requiring a proposed new restricted area linking R-2211 and R-2202. This alternative proposes that the existing R-2202 be expanded to the west to encompass the weapons footprints, altitudes, and safety zones up to the unlimited ceiling of R-2202 D. The altitudes needed for RLOD would depend on the type of ordnance used and aircraft types and profiles delivering this ordnance. This proposed expansion would provide the optimum additional restricted airspace required to contain any hazardous conditions that may occur with the safety footprints for ordnance use within the impact areas. **Both Alternatives A and B** propose temporary impact areas and targets for inert ordnance delivery within Donnelly Training Area (DTA). When only these inert targets are active, restricted areas outside of military lands would not be required and ground access restrictions would be limited to within the existing R-2202 restricted area in DTA.

Battle Area Complex (BAX) Restricted Area Addition (Figure 2-6 and Figure 2-7): Use of the existing BAX Controlled Firing Area (CFA) is currently very constrained in terms of the types, levels, and intensity of training that can be undertaken. To fully support more realistic Army and joint training at the BAX, the action alternative proposed by the Army requires the addition of new restricted area of sufficient size to provide the protective airspace required for the hazardous air and ground activities and weapons safety footprints to fully accommodate training. The two Army action alternatives propose to establish a new restricted area over the BAX area within DTA-East, where 100 percent of the land is currently withdrawn by the military. Utilization of the expanded restricted airspace would be between about 106 to 242 days annually. The airspace could be active 12 hours per day, 7:00 a.m. to 7:00 p.m. local time, Monday through Friday, and other times as required and stipulated by NOTAM.

For each alternative, the airspace is proposed to be of sufficient area to encompass hazardous activities and weapons footprints for those types of munitions and ordnance to be used in this area. The Army intends to consider the following alternatives, as well as a No Action Alternative: **Alternative A** proposes to establish restricted area over the BAX and the Combined Arms Collective Training Facility (CACTF) and to subdivide the restricted airspace into two sectors: R-XXXXA (north) and R-XXXXB (south). The new restricted airspace would be stratified into three altitude levels as follows: surface up to 5,999 feet MSL; 6,000 feet MSL up to 17,999 feet MSL; and 18,000 feet MSL up to FL220. The majority of BAX activities (approximately 60 percent of training) would occur in the lower-altitude layer (below 6,000 feet MSL). **Alternative B (Preferred Alternative)** proposes to establish a larger expanded restricted area over the BAX, the CACTF, and the CACTF CFA and to subdivide the restricted area into three sectors: R-XXXXA (north), R-XXXXB (center), and R-XXXXC (south) with the use of this airspace being the same as Alternative A. This proposed restricted area would be stratified into three

altitude levels as follows: surface up to 5,999 feet MSL; 6,000 feet MSL up to 14,999 feet MSL; and 15,000 feet MSL up to FL220.

Expansion of R-2205 (Figure 2-9): This Army Proposed Action proposes to expand R-2205 to include the DMPTR area within the Yukon Training Area (YTA), as well as the airspace currently designated as the Combined Arms Live-Fire Exercise (CALFEX) north and south CFAs that overlie the YTA and are used for small arms firing, artillery, ground-launched antitank guided missiles, and mortars **(Preferred Alternative)**. The DMPTR is currently very constrained in terms of the types, levels, and intensity of training that can be undertaken. Restricted area is needed to be of sufficient size over these areas to provide the protective airspace required for the hazardous air and ground activities and weapons safety footprints to fully accommodate training. The restricted area would extend from the surface up to FL310, to support live-fire training (covering an area of 251,000 acres [392 square miles]). Currently the Yukon MOA overlies YTA. The restricted area would provide protective areas for the hazardous activities and weapons surface danger zones of sufficient size for the types of ordnance used within the area. The proposed action would subdivide the new restricted area into segmented blocks to allow restricted area use within Eielson AFB Class D airspace and integrate UAVs into training. The military would only activate those subdivisions and altitudes needed to support individual UAV and other mission requirements, mostly at lower altitudes during short periods for UAV transit between segments. Utilization of the expanded restricted airspace is between about 200 to 300 days annually. The airspace could be active 12 hours per day, 7:00 a.m. to 7:00 p.m. local time, Monday through Friday, and other times as required and stipulated by NOTAM.

Night Joint Training (Figure 1-1): Enemy forces frequently use the cover of darkness to hide their activity. Advanced night vision capabilities and equipment have been developed to support Air Force combat operations. Undertaking night flying operations, both during major joint flying exercises and routine training, is a critical training requirement. While night vision equipment capabilities have advanced, the available time to conduct such training has been reduced for the Air Force in Alaska due to the 2005 nationwide extension of daylight saving time into March and November. Currently, the JPARC MOAs close at 10:00 p.m., and due to the extension of daylight saving time, it is not dark enough prior to 10:00 p.m. during the months of October and March to conduct a night major flying exercise (MFE). This Air Force proposal would extend the hours JPARC MOAs are available for use from 10:00 p.m. to midnight, allowing a 2-week RED FLAG–Alaska with NJT to occur in March or October.

During the RED FLAG–Alaska night portion, the live and inert munitions currently dropped during the evening training period would be dropped after 10:00 p.m. Routine training (Alternative B) could include night bombing training outside of the MFE construct. This is not a change in the numbers of munitions dropped, just a change in time of day. These munitions would typically be released in the existing Stuart Creek Impact Area within R-2205 in YTA and the existing Oklahoma Impact Area in R-2202 in DTA-West. These areas are currently used by the Army for late-night munitions training.

The Air Force intends to consider the following alternatives, as well as a No Action Alternative: **Alternative A** proposes to extend the JPARC MOAs operating hours to allow Air Force tactical flight operations until midnight and landing by 1:00 a.m., local time, during March and October for MFEs in Alaska. This would allow night training during these months from a minimum of 1.5 hours to a maximum of 2.5 hours for each exercise. **Alternative B (PreferredAlternative)** proposes to extend the JPARC MOAs operating hours to allow Air Force tactical flight operations until midnight and landing by 1:00 a.m., local time, during all months of the year for MFEs and also for all Air Force routine training purposes.

Unmanned Aerial Vehicle Access (Figure 2-10 and Figure 2-11): UAVs have become critical aircraft in the conduct of reconnaissance, surveillance, and other activities; UAV access throughout the JPARC

ranges and airspace is critical to enhance Army and Air Force training and exercises at JPARC. *The following UAV corridors have been developed as individual, standalone proposed Army action alternatives:* Eielson AFB to R-2211; Eielson AFB to R-2205; Allen Army Airfield (AAF) to R-2202; R-2202 to R-2211; R-2205 to R-2202; Fort Wainwright to R-2211; and Fort Wainwright to R-2205. The Army intends to consider the following alternatives, as well as a No Action Alternative: **Alternative A (Preferred Alternative)** would establish new restricted airspace for each UAV corridor identified above; **Alternative B** would establish defined airspace having special operating provisions via a Certificate of Authorization (COA) for each UAV corridor identified above.

ES.4.2 Programmatic Actions Evaluated in this Environmental Impact Statement

Enhanced Access to Ground Maneuver Space (Figure 2-12): The Enhanced Access to Ground Maneuver Space proposal considers an Army proposed action alternative to provide year-round accessibility to JPARC ground training areas and a no action alternative. The Army currently lacks year-round accessibility, circulation patterns, and maneuver space in TFTA, DTA, and YTA.

Tanana Flats Training Area Roadway Access (Figure 2-13): The TFTA Roadway Access is an Army proposal to provide year-round roadway access to the TFTA to support its planned use as an Army and joint live-fire and maneuver training area. The road access study areas considered as part of the proposed action includes a general west-southwesterly path of the roadway from a point near the future Northern Rail Extension Tanana River Crossing into the training area proximate to the Blair Lakes Impact Area. The Army intends to consider various roadway access alignments and a no action alternative as a future NEPA action when this proposal is ready for a decision to be made.

Joint Air–Ground Integration Complex (Figure 2-14): The Army and Air Force require a facility to train and test air and ground combat units on skills necessary to detect, identify, and effectively engage targets while directing attack aviation as in actual combat. A modern facility designed to support this type of training currently does not exist at JPARC. The Army proposes to develop the JAGIC to provide this capability. The Army intends to consider a proposed action alternative and a no action alternative The study areas under consideration as part of the proposed action, include locating the JAGIC in the central area of DTA-West, proximate to the western boundary of the Oklahoma Impact Area within R-2202; near the Stuart Creek Impact Area within YTA within R-2205; or near the Blair Lakes Impact Area near the southern boundary of TFTA within R-2211.

Intermediate Staging Bases (Figure 2-15): Currently, Soldiers spend up to 6 hours traveling to and from ground training sites within JPARC. This travel reduces available on-range training time and increases risks of traffic accidents. The ISBs are intended for Army and joint use. The Army intends to consider a proposed action alternative and a no action alternative. ISBs are proposed at key points along the planned Alaska Rail Corridor close to the planned bridge crossings. The Army proposes to locate and construct one 1,000-Soldier and three 500-Soldier ISBs within existing JPARC ground training areas, including TFTA, YTA, and DTA-West, to reduce travel time, increase safety, and increase on-range training time. Each facility would be constructed on sites of approximately 110 acres. The no action alternative involves continuing the use of existing temporary "relocatable" ISB facilities.

Missile Live-Fire for AIM-9 and AIM-120 (Figure 2-16): The AIM-9 and AIM-120 missile systems are the main air-to-air armaments for Air Force fighter aircraft training in Alaska. For effective training to be conducted with these systems, live training shots need to be executed as part of both individual pilot training and joint training exercises with other air and ground units. The Air Force intends to consider a proposed action alternative and a no action alternative. The proposed action considers the use of the existing TMAA (300 NM long by 150 NM wide; surface to flight level (FL) 600; includes subsurface

operating areas), and Warning Area 612 (W-612) (surface to FL290) in the GOA for the missile live fire delivery of the AIM-9 and AIM-120 missiles by Air Force fighter aircraft.

JPADS Drop Zones (Figure 2-17): JPADS is a global positioning system (GPS)-guided precision airdrop system designed to deliver supplies and equipment to ground forces. JPADS is currently used on a very limited basis within JPARC. Alaska-based Airmen with the requirement to conduct JPADS training must currently travel to Yuma Proving Ground, Arizona, to conduct this training. The Air Force proposes to establish JPADS Drop Zones (DZs) as part of JPARC MFEs and other large training exercises at optimum operational capabilities. The Air Force intends to consider a proposed action alternative and a no action alternative. The study areas under consideration as part of the proposed action include potential JPADS operations conducted in R-2205 in YTA or JPADS operations conducted in R-2202 outside of dudded impact areas. The key distinction between the study areas is that R-2205 currently has more time and space available to accommodate JPADS DZ training exercises.

ES.4.3 Environmental Impact Analysis Process

The environmental impact analysis process (EIAP) is the Air Force process for ensuring NEPA compliance. The first step in this process is the preparation of a Notice of Intent (NOI) to develop an EIS. The NOI provides an overview of the proposed actions, alternatives, and the scope of the EIS. The NOI for this project was published in the *Federal Register* on December 8, 2010, and in six newspapers: *Anchorage Daily News*, *Alaska Star*, *Copper River Record*, *Fairbanks Daily News-Miner*, *Delta Wind*, and *The Frontiersman* (see Appendix A, *Public Scoping Summary*). The NOI and newspaper notices included information about the proposed actions, the scoping comment procedures, the project website (http://www.jparceis.com), and the dates and locations of the scoping meetings.

The Air Force and Army formally invited the FAA, the Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service (USFWS), and the Environmental Protection Agency (EPA) to be cooperating agencies in preparation of this EIS. The FAA officially became a cooperating agency on March 10, 2011. The BLM, USFWS, and the EPA have been involved as participating agencies, as applicable. ALCOM coordinated government-to-government consultation with Federally recognized tribes as part of the *JPARC Modernization and Enhancement EIS*, in accordance with DoD Instruction 4710.02, *Interaction with Federally Recognized Tribes* (2006), and the 2007 "DoD American Indian/Alaska Native Policy: Alaska Implementation Guidance" (Guidance) (ALCOM 2007). This policy is designed to enhance government-to-government working relationships between the DoD and the tribes in Alaska.

The scoping process is the next step in the NEPA EIS preparation phase. Scoping is an early and open public comment process that involves the public, communities, organizations, and Federal and State agencies via mailings, notifications, and scoping meetings. The purpose of scoping was to obtain public input on the proposed action and alternatives, as well as to gain a better understanding of the potential issues and concerns related to the proposals. This is the first major step to scope or identify the relevant issues to be analyzed in depth in the EIS and to eliminate issues that are not relevant. The Air Force and Army, with the support of ALCOM, conducted public scoping meetings between January 13 and 26, 2011, in the following communities likely to be affected by the JPARC proposed actions to solicit public and agency input: Anchorage, Glennallen, Delta Junction, Fairbanks, Healy, Talkeetna, and Wasilla, Alaska.

As a result of the scoping process, the Army and Air Force received comments from the public, as well as agencies, interested organizations, and Federally recognized Alaska Native Tribes and Nations, which were considered in the preparation of the draft EIS. Overall, agencies, government representatives, nongovernmental organizations, citizens, and Alaska Natives provided 770 website comments, letters, e-mails, phone comments, and faxes to ALCOM. In those 770 comments, commenters expressed over 2,000 concerns.

The actions and topics of greatest concern included the Fox 3 expansion, the new Paxon MOA, the lowering of the MOA to 500 feet, and related impacts on civil aviation, residents, recreation, hunting, wildlife (particularly caribou/moose migration and calving areas and trumpeter swan/migratory bird breeding grounds), subsistence activities, the tourism industry, and commercial aviation access. Specific areas of concern included Fairbanks International Airport access and the areas of Lake Louise, Copper Basin, the Talkeetna Mountains, and the Denali Highway corridor. Safety concerns mainly focused on airspace conflicts below 5,000 feet AGL, particularly the mix of high-speed aircraft with low-speed general aviation aircraft. Hazardous waste concerns mainly centered on the history and future potential of unexploded ordnance closing off access to public lands. Commenters were concerned about airspace proposed over the BAX and the impacts to air traffic in Isabel Pass. Several commenters expressed concern overall that these proposals negatively impacted the highly populated, highly used, road-accessible Alaskan beltway. Socioeconomic concerns related to the tourism, mining, and guiding industries.

Several commenters requested that training exercises avoid the summer and fall season due to the high tourism traffic during those times of year. Other major concerns related to impacts on personal freedoms and Alaskan values of solitude, peace, and quiet and utilizing nature for recreation as well as subsistence. Additional scoping issues are summarized in Table 1-8 of the EIS.

Pursuant to NEPA, the Air Force and Army prepared a draft EIS, incorporating public input from the scoping process by setting forth new or modified alternatives for some of the proposed actions. The comments also focused the EIS analysis on relevant issues required to be analyzed in depth and provided information to EIS preparers regarding potential impacts that had not been anticipated. During the draft EIS preparation process, ALCOM issued two newsletters to the public to provide updates, regarding the JPARC proposed actions and alternatives as a result of public and agency input.

The draft *JPARC Modernization and Enhancement EIS* described the JPARC purpose and need, explained the proposed action and alternatives, presented the existing conditions in the region potentially affected, and provided analysis of the environmental consequences of the proposed actions and each alternative, including the no action alternative for each definitive and programmatic proposal. Specifically, the EIS addressed environmental consequences to airspace management and use, noise, flight and ground safety, air quality, physical resources such as soils and permafrost, water resources and floodplains, hazardous materials/waste, biological resources, wetlands, cultural resources, land use, public access, and recreation, infrastructure and transportation assets, socioeconomics, subsistence, environmental justice and risks to children, and cumulative impacts. Cumulative impacts were evaluated to account for impacts that may occur when considering all aspects of the proposed actions and alternatives in a wider context, both local and regional, and in combination with other major past, present, and future actions in the region.

The draft EIS was made available for public review and comment on the detailed statement and analysis. The public review period for the draft EIS began on March 30, 2012, when the Notice of Availability was published in the *Federal Register* and concluded on July 9, 2012, after the public requested an extension of the normal 45-day draft EIS review period.

The draft EIS review process included a series of public hearings held by the Air Force and Army with the support of ALCOM during the review and comment period. Notices were placed in six newspapers: *Anchorage Daily News, Alaska Star, Copper River Record, Fairbanks Daily News-Miner, Delta Wind,* and *The Frontiersman*. Notification was also provided through the project website (www.jparceis.com), press releases, public service announcements, posted fliers in surrounding communities, and letters or mailers sent to entities on the project mailing list. Public hearings were held in the same geographic venues as the scoping meetings; however, in response to public input, three additional venues were added in Paxson (Dot Lake), Palmer, and Lake Louise, Alaska. Pursuant to the NEPA requirements and CEQ

regulations, public hearing objectives included providing the public and government agencies a copy of the draft EIS, a forum to learn more about the draft EIS and the proposal, and ample opportunity to comment on the draft EIS. Throughout the comment period the public had the opportunity to submit comments on the draft EIS orally or in writing at the public hearings, or any time via mail, phone, or the project website.

At the close of the draft EIS public comment period, the Army and Air Force prepared the final EIS. Preparation, coordination, approval, filing, and public notice of the final EIS is the same as the process undertaken for the draft EIS except that the public need not be invited to comment during the 30-day post-filing waiting period in accordance with Army and Air Force NEPA implementing regulations.

Once the draft EIS public comment period closed, the Army and Air Force conducted a thorough and rigorous review of all of the comments received on the draft EIS. A total of 269 comment submittals were received on the draft EIS. Each comment submittal was then broken out or "bracketed" into specific comments, which totaled 1,363 bracketed comments. The Army and Air Force reviewed and responded specifically to each comment in the final EIS. A more detailed summary of the draft EIS review process is contained in Appendix M, *Draft EIS Review Process and Public Hearing Summary*. Appendix N, *Draft EIS Comments and Responses*, contains copies of public and agency comments received during the draft EIS review process and responses to those comments.

ES.4.4 Environmental Requirements

The Services must comply with a variety of State and Federal environmental laws, regulations, and EOs. These are described in more detail in Appendix B, *Definition of the Resources and Regulatory Settings*, of the EIS and include the following:

- FAA Airspace Regulations (49 U.S.C. 40103)
- FAA Aviation Safety and Noise Abatement Act of 1979 (49 U.S.C. 47501–47507)
- U.S. Air Force Mishap Prevention Program (Air Force Instruction [AFI] 91-202)
- Aviation Flight Regulations (Army Regulation [AR] 95-1)
- Clean Air Act (42 U.S.C. 7401–7671)
- Federal Water Pollution Control Act (Clean Water Act) (33 U.S.C. 1251–1387)
- Rivers and Harbors Act (33 U.S.C. 401–426)
- Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 *et seq.*)
- Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11001–11050)
- Compensation and Liability Act of 1980 (42 U.S.C. 9601 *et seq.*), as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601–9675)
- Community Environmental Response Facilitation Act of 1992 (42 U.S.C. 9620)
- Energy Independence and Security Act (42 U.S.C 17001)
- Endangered Species Act (ESA) (16 U.S.C. 1531–1544)
- Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361–1407)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–711)

- Bald and Golden Eagle Protection Act (16 U.S.C. 668—668c)
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (66 *Federal Register* 3853, January 17, 2001)
- Sikes Act (16 U.S.C. 670)
- Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) for Essential Fish Habitat (EFH) (16 U.S.C. 1801–1891)
- National Historic Preservation Act (NHPA) (16 U.S.C. 470)
- Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3101–3233)
- Alaska Native Claims Settlement Act of 1971 (43 U.S.C. 1601–1629)
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 *Federal Register* 7269, February 16, 1994)
- EO 13045, *Environmental Health and Safety Risks to Children* (62 *Federal Register* 19885, April 23, 1997)

ES.4.5 Summary of Effects Analysis

Appendix B, *Definition of the Resources and Regulatory Settings*, of the EIS describes existing environmental conditions for resources potentially affected by the proposed actions and alternatives described in Chapter 2.0. Chapter 3.0 identifies and assesses the environmental consequences of the Proposed Actions and Alternatives. The affected environment and environmental consequences are described and analyzed according to the resource categories identified in Table ES–1.

Table ES–1 also shows the potential impacts of each proposed action in each of these resource areas. For proposals with multiple alternatives, the table reflects the overall findings for the highest potential change for each of the resource topics. The key at the bottom of the table shows that the lightest entries have no adverse impact and that the dark purple entries have the potential for significant adverse impacts that may require management actions or mitigations to avoid or reduce impacts. Entries in between have a potential for adverse impact, which may require management actions or mitigations to avoid or reduce impacts, but the impact is not significant.

Specific details regarding significance determinations associated with the color ratings for each resource area are provided in the EIS section specified in the table. For example, airspace management and use impacts for the Fox 3/Paxon MOA proposal are addressed in EIS Section 3.1.1.

Table ES–1. Comparative Analysis of EIS Proposed Actions and Alternatives

Resource	Definitive Proposals						Programmatic Proposals*					
	Fox 3 MOA Expansion and New Paxon MOA	Realistic Live Ordnance Delivery	Battle Area Complex Restricted Area	Expand Restricted Area R-2205	Night Joint Training	Unmanned Aerial Vehicle Access	Enhanced Ground Maneuver Space	Tanana Flats Training Area Roadway Access	Joint Air-Ground Integration Complex	Inter-mediate Staging Bases	Missile Live Fire for AIM-9 and AIM-120 in the Gulf of Alaska	Joint Precision Airdrop System Drop Zones
	Section Number											
Airspace Management and Use	3.1.1[a]	3.2.1	3.3.1[a]	3.4.1	3.5.1	3.6.1[a]	3.7.1	3.8.1	3.9.1	3.10.1	3.11.1	3.12.1
Noise	3.1.2	3.2.2	3.3.2	3.4.2	3.5.2	3.6.2	3.7.2	3.8.2	3.9.2	3.10.2	3.11.2	3.12.2
Safety - Flight	3.1.3[a]	3.2.3	3.3.3[a]	3.4.3[a]	3.5.3[a]	3.6.3[a]	3.7.3	3.8.3	3.9.3	3.10.3	3.11.3	3.12.3
Safety - Ground	3.1.3	3.2.3[a]	3.3.3[a]	3.4.3[a]	3.5.3	3.6.3	3.7.3	3.8.3	3.9.3	3.10.3	3.11.3	3.12.3
Air Quality	3.1.4	3.2.4	3.3.4	3.4.4	3.5.4	3.6.4	3.7.4	3.8.4	3.9.4	3.10.4	3.11.4	3.12.4
Physical Resources – Soils/permafrost	3.1.5	3.2.5[a]	3.3.5	3.4.5	3.5.5	3.6.5	3.7.5	3.8.5	3.9.5	3.10.5	3.11.5	3.12.5
Water Resources	3.1.6	3.2.6[a]	3.3.6[a]	3.4.6	3.5.6	3.6.6	3.7.6	3.8.6	3.9.6	3.10.6	3.11.6	3.12.6
Floodplains	3.1.6	3.2.6	3.3.6	3.4.6	3.5.6	3.6.6	3.7.6	3.8.6	3.9.6	3.10.6	3.11.6	3.12.6
Hazardous Materials & Waste	3.1.7	3.2.7	3.3.7[a]	3.4.7[a]	3.5.7	3.6.7	3.7.7	3.8.7	3.9.7	3.10.7	3.11.7	3.12.7
Biological Resources	3.1.8[a]	3.2.8	3.3.8[a]	3.4.8[a]	3.5.8[a]	3.6.8	3.7.8	3.8.8	3.9.8	3.10.8	3.11.8	3.12.8
Wetlands	3.1.8	3.2.8	3.3.8	3.4.8	3.5.8	3.6.8	3.7.8	3.8.8	3.9.8	3.10.8	3.11.8	3.12.8
Cultural Resources	3.1.9	3.2.9	3.3.9[a]	3.4.9[a]	3.5.9	3.6.9	3.7.9	3.8.9	3.9.9	3.10.9	3.11.9	3.12.9
Land Use – Land Management and Use	3.1.10[a]	3.2.10[a]	3.3.10[a]	3.4.10[a]	3.5.10[a]	3.6.10	3.7.10	3.8.10	3.9.10	3.10.10	3.11.10	3.12.10
Land Use – Public Access	3.1.10[a]	3.2.10[a]	3.3.10[a]	3.4.10	3.5.10[a]	3.6.10	3.7.10	3.8.10	3.9.10	3.10.10	3.11.10	3.12.10
Land Use – Recreation	3.1.10[a]	3.2.10[a]	3.3.10	3.4.10	3.5.10[a]	3.6.10	3.7.10	3.8.10	3.9.10	3.10.10	3.11.10	3.12.10
Infrastructure and Transportation	3.1.11	3.2.11	3.3.11	3.4.11	3.5.11	3.6.11	3.7.11	3.8.11	3.9.11	3.10.11	3.11.11	3.12.11
Socioeconomics	3.1.12[a]	3.2.12[a]	3.3.12[a]	3.4.12	3.5.12[a]	3.6.12	3.7.12	3.8.12	3.9.12	3.10.12	3.11.12	3.12.12
Subsistence	3.1.13[a]	3.2.13	3.3.13[a]	3.4.13[a]	3.5.13	3.6.13[a]	3.7.13	3.8.13	3.9.13	3.10.13	3.11.13	3.12.13
Environmental Justice	3.1.14	3.2.14	3.3.14	3.4.14	3.5.14	3.6.14	3.7.14	3.8.14	3.9.14	3.10.14	3.11.14	3.12.14

COLOR KEY:

No beneficial or adverse impact.	Section includes proposed management actions.
Potential for adverse impact, but not significant; may require management actions or mitigations to avoid or reduce impacts.	Section includes proposed management actions/mitigations.
Potential for significant adverse impacts; requires management actions or mitigations to avoid or reduce impacts.	Section includes proposed management actions/mitigations.

***** Analysis is based upon available data. Actual impacts have not been evaluated and mitigations have not been identified for Programmatic proposals.

a. Mitigations and/or management actions are proposed for this resource area under this proposal.

Table ES–2 through Table ES–7 summarizes the impacts for each definitive proposal by resource or impact area and the mitigation measures developed by the Army and Air Force to avoid, reduce, or provide management actions to mitigate significant adverse impacts. In cases where a resource or impact area is not affected by the proposal, "No Effect" is stated in the table.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
Airspace Management and Use	The annual number of aircraft sortie-operations would not increase significantly above baseline levels for both MFEs and other routine training. This baseline is inclusive of up to six annual MFEs, routine training operations, and the recent basing of six additional F-22s concurrent with the drawdown of F-15 aircraft at JBER. With the expanded Fox 3 MOA being closer to JBER, it is estimated that about half of the current Stony MOA fighter sorties would be conducted in the Fox 3 MOA/ATCAA if this proposal is implemented. With no significant increase in representative operational levels in this airspace, the higher density MFE aircraft sorties would be dispersed over a greater area on a daily basis than what currently occurs. The extent of airspace impacts would depend on the daily use of the expanded Fox 3 and new Paxon MOAs. (See Table 2-2.) May have moderate to significant impacts on airway IFR traffic and/or the airspace used by Anchorage ARTCC and/or Fairbanks TRACON. The FAA has expressed concerns that the Paxon MOA, when active, would result in the closure of three airways (V481, V515, and V444) forcing small or low flying aircraft to fly VFR between Gulkana/ Northway to Delta Junction/Fairbanks. May have minimal to moderate impacts on jet/RNAV routes.	Impacts are the same as Alternative A, with the following exceptions: The area of potential impact would be reduced by approximately 1.16 million acres. The federal airways to the west and south of the existing/proposed Fox 3 boundaries should be sufficiently distant and separated from those airways so as to have minimal effects on their use. The more northerly proposed boundary should also not have impacts on the terminal airspace used by the FAA to separate and sequence airport air traffic through this area. The adjusted Fox 3 MOA boundary proposed for this alternative is sufficiently distant from the jet routes in Alternative A. This alternative would have minimal impacts on the jet/RNAV route structure in this region. The southern boundary of this proposed MOA would be more distant from those areas between Glennallen and Anchorage where much of the VFR traffic typically operates and would be unaffected by this alternative. This alternative would be more distant from public airports and private airfields that would be potentially affected by the Alternative A.	This alternative proposes no changes to the current boundaries and altitudes of the existing Fox 3 MOA. As no significant increases in the current military flight operations are projected for the future, the No Action Alternative would not affect the current military and civil aviation airspace uses within the region and would remain as under current conditions.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
	The potential for interactions between military and VFR aircraft would depend on the daily densities, time frames, altitudes, and locations of both the military and VFR aircraft operations. Expanding the airspace for this proposal with much lower altitudes would require increased vigilance by both military and civilian pilots to maintain continued awareness of each other's presence while sharing this MOA airspace when it is in use.		
Noise	Subsonic aircraft noise levels beneath the Paxon MOA/ATCAA would increase from 37 to 54 dB $L_{dnmr,}$ which is below levels of concern established by EPA for any land use. Decreasing altitudes would result in increased individual overflight noise events. Increases in noise levels in areas not currently overlain by MOAs would be greater than 10 dB and would be expected to be easily noticeable, because the ambient noise level in the ROI is low. The average number of sonic booms per day near the center of the Fox 3 MOA/ATCAA airspace would increase by less than one per day from 4.6 per day to 5.2. The intensity of the proposed noise levels does not exceed widely accepted impact thresholds, below which significant noise impacts do not typically occur. The context and degree of change are such that the change would be easily noticed and be expected to be considered significant by a substantial	The area of potential impact would be reduced by approximately 1.16 million acres. Beneath Fox 3 MOA/ATCAA, subsonic noise levels would increase from 39 to 50 dB L_{dnmr}. Noise levels beneath Paxon MOA/ATCAA would increase from 37 to 54 dB L_{dnmr}. Increases in supersonic noise levels would be the same as for Alternative A.	Under the No Action Alternative, there would be no change to existing airspace structure or existing baseline training operations. No change in noise levels would occur, and they would remain as under current existing conditions.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
	percentage of the affected population. The risk of hearing loss associated with proposed training operations would be negligible.		
Flight Safety	MFEs and routine training would only be conducted at the lower altitudes in the Fox 3 MOA; they would be limited to 14,000 feet MSL and above in the proposed Paxon MOA. The potential for aircraft mishaps under this alternative would be low to moderate. The number of flying days/hours by both MFE and routine training activities are not projected to increase significantly over current levels. The probability of an aircraft crash into a populated area is low, given the very low population density in the proposed airspace. The potential for near misses or midair collisions between VFR aircraft and low-altitude, high-speed military aircraft would be moderate to significant. No midair collisions and few reported near misses have occurred within the existing JPARC airspace. The potential for bird/wildlife-aircraft strikes would be low to moderate and the existing Air Force BASH programs and procedures would include consideration of additional means for monitoring and reacting to heightened risks of bird strikes.	The potential for aircraft mishaps and bird/wildlife-aircraft strikes would be generally the same as discussed for Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	The No Action Alternative would involve continuation of those plans, procedures, and processes currently used for minimizing flight safety risks for all flight activities within the existing airspace.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
Ground Safety	Significant impact potential caused by the use of chaff and flare during flight training activities is considered to be low.	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	The No Action Alternative would involve continuation of those plans, procedures, and processes currently used for minimizing ground safety risks for all flight activities within the existing airspace.
Air Quality	The use of chaff would not result in significant air quality impacts. Criteria pollutant emissions resulting from flight operations would not exceed applicable PSD significance thresholds of 250 tons per year, resulting in less-than-significant adverse air quality impacts (See Table 3-8.) Given that the project region is in attainment of all NAAQS, a conformity determination is not necessary. Significant impacts on public health from HAPs emitted in association with aircraft operations would not occur. Significant impacts to Denali National Park would not occur.	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	Air quality impacts under the No Action Alternative would not differ from air quality impacts generated under existing operations at the Fox 3 and Stony MOAs and would not result in additional air quality impacts.
Physical Resources	No Effect		
Water Resources	No Effect		
Hazardous Materials and Waste	There would not be an increase in chaff and flare use within the overall airspace and would be redistributed over a larger expanse of airspace. The use of temporary dry targets for practice bombing without the actual release of ordnance would not result in significant adverse impacts.	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	Under the No Action Alternative, there would be no addition to the current Fox 3 MOA configuration and no new Paxon MOA. Therefore, hazardous materials-related impacts would be the same as those occurring under existing conditions; no additional impacts would occur.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
Biological Resources	Wildlife species would be exposed to overflight by military aircraft flying as low as 500 feet AGL, potentially causing altered behavior or metabolic effects. Wildlife responses diminish with increasing altitude of overflight or increasing slant distance. Reported wildlife responses to overflight are largely behavioral and short-term. Some short-term physiological changes (e.g., increased heart rate) have also been measured. Studies of waterfowl, songbirds and raptors, including bald and golden eagles, vary in their responses to military jet overflight, but documented responses have been limited to short-term behavioral responses and no effects that would be measurable at a population level have been documented. Fish in their native habitat would not be affected at the sound levels associated with military aircraft overflight as low as 500 feet AGL. Potentially sensitive areas such as the Gulkana hatchery, which is the largest sockeye salmon hatchery in the world (PWSAC 2012), could be affected by overflight noise, especially during the incubation period when the eggs are susceptible to any type of noise or shock. For wildlife not previously exposed to sonic booms some short-term behavioral responses may be observed but would not result in any population-level effects. Chaff and flare use would not impact wildlife	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	Under the No Action Alternative, the horizontal and vertical boundaries of the existing Fox 3 MOA would remain the same and training would be expected to continue as permitted within the existing MOA. Wildlife resources would remain as they currently exist.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
	resources to any significant degree.		
Cultural Resources	As with previous analyses for existing Alaska MOAs (Air Force 1997-1), no significant impacts are anticipated to cultural resources from the expansion of current Fox 3 MOA boundaries, the addition of a new MOA, and their use for flight training. Compliance with all requirements for Tribal consultation has been completed. No significant impacts on traditional cultural resources or Alaska Native activities are anticipated to result from the proposed expansion of Fox 3 MOA boundaries and the creation of the new Paxon MOA.	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	Under the No Action Alternative there would be no changes to the existing Fox 3 MOA and no new Paxon MOA. Existing use of the MOA would continue under this alternative, and traditional cultural resources would continue to be managed in compliance with Federal law and Air Force regulations.
Land Use	This proposal alternative would have no impact on land status or ownership. Subsonic noise levels in the underlying areas would increase substantially by about 17 dB under the new Paxon MOA and by about 10 dB under existing Fox 3 and the Fox 3 expansion area. However, the highest projected level under the new Paxon MOA, 54 dB L_{dnmr}, is below levels of concern established by EPA for any land use. Overall, changes to quiet settings could constitute an effect on valued natural and pristine areas in the region, but would not be expected to change the land use of the area but could be annoying to individuals who experience a startling event. Minimal impact on land use from chaff and flare use is expected. Ground access and travel is not affected by	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	There would be no changes to the current Fox 3 MOA configuration and altitudes or proposed addition of the Paxon MOA under the No Action Alternative. Therefore, no additional impacts on land use, public access, or recreation would occur.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
	this proposal. Indirect effects of changes in civilian air access could affect access to specific communities and areas and associated uses and activities. No direct spatial or temporal impacts on availability of recreational opportunities would occur under this alternative. Indirect effects of changes in civilian air access would affect spatial and temporal availability to specific areas, and associated uses and activities.		
Infrastructure & Transportation	No Effect		
Socioeconomics	The major concerns for socioeconomic resources associated with the proposed action, as identified by scoping and draft EIS public review comments, are potential impacts to property values and commercial and general aviation. Impacts on key industries such as energy development and mining are expected to be low. Potential civil aviation impacts may include significantly increased flight distances and increased flight time when the airspace is active and either pilots elect not to transit the MOAs, or pilots flying to and from private airports or airfields are directed by ATC to divert their flight routes to avoid the active airspace and military activities. These potential aviation impacts would result in economic impacts due to additional operating	The area of potential impact would be reduced by approximately 1.16 million acres. Alternative E avoids the area near Lake Louise and there are fewer persons identified overall under the airspace and thus fewer persons who could be potentially impacted under this alternative. Commercial and general aviation would remain similar to those as described under Alternative A but at a reduced amount of affected airspace, as noted above.	Under the No Action Alternative, no new airspace would be created and no expansion to the existing Fox 3 MOA would be created. Existing activities in the Fox 3 MOA would continue under the current procedures and guidelines. Therefore, no changes to socioeconomic resources from current existing conditions are expected.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
	costs (primarily related to increased fuel use) associated with avoiding active airspace, and the costs of any expended efforts in tracking the airspace status through available advisory services. Under Alternative A, there are approximately 206 persons in the census block that has been defined under the restricted airspace. The low population density under the proposed low-level airspace makes it highly unlikely that noise from flight activity would have significant social or economic impacts on the region		
Subsistence	The expansion of the Fox 3 MOAs and the establishment of the Paxon MOA would not restrict ground access to traditional use areas or hunting locations beneath the new airspace. Subsistence users would have the same access and availability to subsistence resources from the ground as under current conditions. The new and expanded airspace, however, may result in a restriction of access by aircraft to areas or landing fields below or in the vicinity of the airspace. Aircraft are often used in the subsistence harvests, particularly for times of year in which traditional use areas are not accessible by ground vehicles. Wildlife surveys are factored into the impact assessment, as they are conducted by aircraft to gauge populations and health, information that is then taken into consideration when the ADFG determines subsistence priorities and	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	Under the No Action Alternative, flight training would continue in the existing Fox 3 MOA with no expansions or new airspace being created. Civil aviation would be permitted under the same guidelines described in Section 3.1.1, and wildlife/vegetation species would be affected by the conditions described in Section 3.1.8. Therefore, subsistence resources and access to those resources would be the same as described in Section 3.1.13.

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
	the amount of takes permitted. Noise and residual materials from chaff and flares also have the potential to affect the wildlife and vegetation resources harvested by subsistence users but not to a significant adverse degree.		
Environmental Justice	Impacts from airspace management, noise, flight safety, socioeconomics, and subsistence were assessed for environmental justice in accordance with EO 12898. It was determined they would not create disproportionate adverse effects on minority and low-income populations or children.	Same as Alternative A. The area of potential impact would be reduced by approximately 1.16 million acres.	There would be no additional disproportionately high and adverse effects on minority and low-income populations or children from the No Action Alternative. The Fox 3 MOA would remain as currently configured.

MITIGATION MEASURES:

- **Special Use Airspace Information System (Airspace Management; Safety-Flight; Land Use-Access)**
  Continue SUAIS in all areas where radio coverage exists; this includes a majority of the area beneath the proposed Fox 3 and Paxon MOAs. The SUAIS Letter of Agreement with the FAA will be updated to include current radio sites and any new MOAs to be covered by the system. The effectiveness of this mitigation in maintaining a safe, usable airspace can be seen in today's northern MOAs, which have minimum altitudes even lower than proposed here. The Air Force safely shares large expanses of airspace with civilian aviation utilizing the communication network known as SUAIS. Proposed new, low MOAs already have large areas of SUAIS coverage that would enable safe, simultaneous use of these new airspaces by civil and military aircraft.

- **Eagle and Migratory Bird Avoidance (Biological Resources)**
  Limit minimum altitude to 1,000 feet AGL in the new Fox 3 and Paxon MOAs from March 15 to September 30 (nesting season) to comply with the Bald and Golden Eagle Protection Act. Subject to available funding, the Air Force may coordinate with USFWS to establish habitat models and/or conduct bald and golden eagle nest surveys to establish low flying (500 feet AGL) areas outside of eagle habitat during the nesting season (March 15 to September 30).

- **Wildlife Avoidance (Biological Resources)**
  Modify existing Letter of Agreement with ADFG to maintain avoidance areas over caribou and Dall sheep populations under the new MOAs during critical lifecycle periods. Coordination with wildlife agencies will continue to determine specifics, including seasons and minimum overflight altitudes; location of herds is monitored/reported by ADFG.

- **VFR Flight Corridors (Airspace management; Safety-Flight; Biological Resources; Land Use-Management, Access, Recreation; Socioeconomics; Subsistence)**
  Extend the VFR flight corridor over the Richardson Highway between Delta Junction and Glennallen to include the highway segment under the new

Table ES–2. Summary of Impacts for Fox 3 MOA Expansion and New Paxon MOA *(Continued)*

Resource Area	Alternative A	Alternative E (Preferred Alternative)	No Action Alternative
Paxon MOA. The corridor laterally will be 3 miles on either side of the Richardson Highway and vertically go from the surface up to 4,500 feet MSL. (The MOA would only go down to 5,000 feet MSL over the corridor to allow a 500-foot buffer.) As an extra safety measure, designated VFR corridors are intended to be free of high-speed Air Force aircraft, thereby allowing unimpeded flight by civilian aircraft. Corridors such as this have been used extensively for the safe transit of civilian aircraft where the military currently flies low in MOAs. This new corridor would continue to allow unimpeded VFR flights below the floor of the proposed Paxon low MOA. An additional benefit of the VFR corridor is a reduced noise level over the Paxson Fish Hatchery from the higher flying military aircraft. • **National Wild and Scenic Rivers Protection (Biological Resources; Land Use-Management, Recreation)** For the period of May 15 to September 30, expand the Gulkana (west, middle, and north forks) and Delta National Wild and Scenic Rivers' (and others, as designated) Flight Avoidance Areas to include portions within new MOA boundaries using a 5-nautical mile buffer either side of the river centerline with 5,000 feet MSL minimum altitude. The river corridors will include their headwater lakes areas (Tangle Lakes and Dickey Lake). • **Concentrated Activity Areas (Land Use-Management, Recreation; Socioeconomics)** Comply with flight avoidance areas established by the 11th Air Force Airspace and Range Team and listed in the 11th Air Force Airspace Handbook. Areas not specified by the ROD may be added, increased, decreased, or removed by the 11th Air Force Airspace and Range team as situations dictate (e.g., a mine and its air operations cease to exist).			

Key: ADFG=Alaska Department of Fish and Game; AGL=above ground level; ARTCC=Air Route Traffic Control Center; ATC=Air Traffic Control; ATCAA=Air Traffic Control Assigned Airspace; BASH=bird/wildlife-aircraft strike hazard; dB=decibel; EIS=environmental impact statement; EO=Executive Order; EPA=U.S. Environmental Protection Agency; FAA=Federal Aviation Administration; HAPs=hazardous air pollutant; IFR=Instrument Flight Rules; JBER=Joint Base Elmendorf-Richardson; combination of Elmendorf AFB and Fort Richardson; L_{dnmr}=onset rate–adjusted day-night average sound level; MFEs=major flying exercise; MOA=Military Operations Area; MSL=mean sea level; NAAQS=National Ambient Air Quality Standards; PSD=prevention of significant deterioration; PWSAC=; RNAV=Area Navigation; ROI=region of influence; SUAIS=Special Use Airspace Information Service; TRACON=Terminal Radar Approach Control; VFR=Visual Flight Rules.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
Airspace Management and Use	Use of R-2202B/C/D is not projected to increase significantly above current representative levels under this proposal since live ordnance deliveries would be conducted by those fighter aircraft types currently conducting other ordnance deliveries on the Oklahoma Impact Area. The proposed expansion of this restricted area would only be activated as needed.	Alternative B contains all of the elements of Alternative A but would also include establishing a new restricted area to allow realistic munitions drops in both the Oklahoma and Blair Lakes Impact Areas. Only inert bombs would be dropped at Blair Lakes Impact Area under RLOD. When activated, this airspace would	The No Action Alternative would not result in any change from existing conditions in the military and civil uses of this airspace environment.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	The scheduled and real-time status of this restricted airspace would be available on the SUAIS and other information sources. The extent to which this Alternative may impact civil aviation airspace use in the region of the expanded R-2202 would be minimal. The area proposed for the R-2202 expansion would have no direct impacts on VFR flyways. No public airports or private airfields are located within the immediate area of the proposed R-2202 expansion and others are sufficiently distant from this proposal so as not to be directly impacted.	restrict other uses of the Eielson MOA not associated with the live ordnance delivery missions. The planned use of this airspace would require coordination among the other using agencies to schedule and prioritize their respective mission requirements for this SUA. Restricted airspace linking the existing restricted areas would not permit civil aviation use of this airspace when activated for live ordnance deliveries. No public airports or private airfields are located within the immediate area of the proposed R-2202 expansion and others are sufficiently distant from this proposal so as not to be directly impacted.	
Noise	The number of sortie-operations conducted in R-2202 would not be expected to change, and aircraft noise levels would remain approximately the same as under baseline conditions. Sonic booms generated at these altitudes generally do not reach the ground due to atmospheric refraction and when they do intersect the ground are attenuated by the long distances travelled. The number of live GBU-32 (1,000-pound-class-bombs) dropped per year would be expected to increase from 70 to 200 while the number of SDBs dropped annually would remain the same as under baseline conditions. Noise levels exceeding 62 dB CDNL would not extend beyond the boundaries of DoD-owned	Inert munitions generate noise on impact that is noticeable only in the immediate vicinity of the impact location. Noise impacts in the Blair Lakes Impact Area under Alternative B would be minimal, and munitions usage and noise impacts in the Oklahoma Impact Area would be the same as under Alternative A. Impacts do not exceed the significance thresholds established for this action.	Under the No Action Alternative, restricted area airspace extents would remain as they are currently, and no changes to munitions usage would occur. There would be no change from existing conditions for noise under the No Action Alternative.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	land. The proposed incremental increase in munitions use at the geographically remote Oklahoma Impact Area would not result in noise impacts that would exceed significance thresholds established for this action.		
Flight Safety	The overall potential for any flight safety risks under this alternative would be low to moderate. Aircraft sortie-operations and the overall number of flying hours within the existing and proposed airspace would not increase significantly above current representative levels, therefore, the potential risk for increased aircraft mishaps, bird-aircraft strikes or near misses/midair collisions should also not increase.	The overall potential for any flight safety risks under this alternative would be low to moderate. The probability of any flight safety risks within this airspace, when active, would be relatively low, as discussed for Alternative A.	The No Action Alternative would involve maintaining the current use of this airspace as well as those plans, procedures, and processes in place for minimizing flight safety risks within the existing airspace.
Ground Safety	Existing procedures for range safety and control would continue to be implemented for proposed training activities in the Oklahoma Impact Area, as well as within land areas underlying the proposed expanded R-2202 airspace. For areas outside of the military land boundary, the Air Force would develop a Range Safety and Access Plan following the ROD for managing and ensuring public safety on non-military land. As required, training areas would be cleared of UXO or munitions debris to reduce related hazards and provide a safe and constructive training environment for all training units. Any cleared areas that become contaminated during live-fire exercises/training would again	Existing procedures for range safety and control, as described under Alternative A, would be implemented for proposed activities in the existing targets at the Oklahoma and Blair Lakes Impact Areas, as well as within land areas underlying the proposed expanded R-2211 and R-2202 airspaces. Existing procedures for UXO and munitions safety, as described under Alternative A, would be implemented for the proposed activities. There are no aspects of Alternative B associated with public access control not previously discussed under Alternative A. Consequently, significant impacts are not expected to occur.	No change in ground operations would occur under the No Action Alternative; therefore, there would be no additional changes to existing public health and safety conditions.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	be cleared when the exercise is completed. Current procedures designed to limit unauthorized public access would continue when ordnance delivery exercises are taking place. These procedures include marking prohibited areas with placards, blockades, verbal warnings, or red flags as appropriate. The Integrated Wildland Fire Management Plan would be updated to address training activities under Alternative A. Implementation of the measures listed above would minimize the potential for significant adverse impacts on the military and the general public.	All fire management and response practices currently employed or proposed under Alternative A would be implemented. Consequently, significant impacts are not expected to occur.	
Air Quality	No changes will occur to aircraft operations in the affected area under Alternative A of this action. Thus, no analysis was performed on the air quality effects of aircraft operations in the region. Alternative A for the RLOD would result in an increase in GBU-32 expenditures in R-2202, which would result in an increase in criteria pollutant and HAP emissions. The low level of criteria pollutant emissions that would result provides a good indication that the HAP emissions would be minimal. Increases in criteria pollutant emissions from Alternative A would not exceed applicable PSD significance thresholds of 250 tons per year. Therefore, the criteria pollutant emissions would result in less-than-significant air quality impacts. Impacts on air quality-related values at Denali National Park would be expected to be	Same as Alternative A.	Air quality impacts under the No Action Alternative would not differ from air quality impacts generated under existing operations at R-2202 and R-2211. Therefore, the No Action Alternative would not result in any new air quality changes from existing conditions.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	negligible.		
Physical Resources	The proposed additional use of ordnance represents a fraction of total yearly munitions use in the Oklahoma Impact Area, such that no adverse soil erosion impacts would occur. The proposed new targets in TAs 544 and 533 would be classified as temporary impact areas. Creation of new targets could result in short- and long-term soil erosion, as well as degradation of permafrost, including thermokarst features; therefore, there is potential for significant adverse impacts to occur without mitigations to avoid or reduce impacts, or the addition of BMPs and SOPs for these specific areas.	Impacts would be similar to those described for Alternative A.	Under the No Action Alternative, there would be no change to current activities at Blair Lakes Impact Area or the Oklahoma Impact Area and conditions would be the same as existing baseline conditions.
Water Resources	Impacts would be limited to the existing target arrays that currently undergo live-fire practice in the Oklahoma Impact Area. Water quality could be impacted by the metals and explosive fillers used in the ordnance. Iron, manganese, copper, molybdenum, lead, nickel and zinc are found in shell and various projectile components of the GBU-32 and SDBs. The increase in ordnance use is not expected to raise levels of metal concentrations to levels of concern; therefore, water quality impacts from metals deposited in the environment by exploded ordnance would be potentially adverse but not significant. The potential for net loss in wetland acreage would be minimal and potential impacts to wetlands would be adverse but not significant. Impacts on surface water and groundwater downstream of the proposed target arrays for	Impacts would be similar to those described for Alternative A, including the addition of the Blair Lakes Impact Area which is designated as a nondudded range where only inert ordnance would be used.	There would be no change to water quality in association with munitions use under current existing conditions, and no additional changes would occur in association with munitions use.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	inert ordnance delivery in TAs 533 and 544 would be minimal and not significant. The inert ordnance would not create significant craters; therefore impacts to wetlands would be minimal and not significant.		
Hazardous Materials and Waste	No significant adverse general hazardous materials-related operational impacts would occur in association with this alternative, as current and future Army regulations and practices would be undertaken to meet compliance requirements. Low levels of zinc, copper, lead, and antimony were detected within impact areas and target berms where munitions were used. The metal concentrations were above the background but no samples in DTA had values approaching levels of concern (USACE 2004-1). The Oklahoma Impact Area would be managed in accordance with current Federal, State of Alaska, Air Force, and Army regulations for the management, safe handling, and disposal of hazardous waste and materials associated with live and inert ordnance and UXO, as the result of aerial bombing exercises at each impact area. Therefore, Alternative A would result in the potential for adverse but not significant impacts. The proposed new targets in TAs 544 and 533 would be classified as temporary impact areas. There is no potential for adverse munitions-related hazardous materials impacts, as only inert ordnance delivery would be conducted.	Impacts would be similar to those described for Alternative A, including the addition of the Blair Lakes Impact Area which is designated as a nondudded range where only inert ordnance would be used.	Under the No Action Alternative, there would be no expansion of the footprint, associated WDZ, and hazard areas for ordnance delivery or the use of ordnance requiring an expanded footprint. Therefore, no change or additional impacts to existing conditions would occur for hazardous materials and waste.
Biological Resources	The overflight and weapons release activities allowed by the proposed airspace	Same as Alternative A.	No changes to existing biological resource conditions are expected

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	modifications would not have substantial impacts on vegetation or wildlife. Under Alternative A, which includes the proposed establishment of new target areas outside the existing impact areas as part of the north-south ordnance delivery run-in headings, some potential exists for biological impacts at these new target sites. The target sites would be approximately 1 to 2 acres in extent and would be located within existing ordnance impact areas in DTA and TFTA. For north-south run-in headings, however, targets would be located within DTA-West, but outside of existing ordnance impact areas. Only inert ordnance would be used at these targets. The siting and environmental review process would employ siting criteria to minimize impacts on wildlife and vegetation.		from implementation of the No Action Alternative.
Cultural Resources	Compliance with all requirements for Tribal consultation has been completed. No significant impacts are anticipated to cultural resources, traditional resources, or Alaska Native activities from the expansion of R-2202. The establishment of new target areas in TAs 533 and 544 is not anticipated to have impacts on cultural resources, as archaeological survey of the areas located no archaeological resources. In compliance with Section 106 of the NHPA, ALCOM, on behalf of the Air Force, completed consultation with the Alaska SHPO and determined that no historic properties will be affected by implementation of the proposed action.	No significant impacts are anticipated to cultural resources, traditional resources, or Alaska Native activities from the creation of a new restricted area linking R-2211 and R-2202 and its training use. The existing target array in the Oklahoma and the Blair Lakes Impact Areas would be used under Alternative B, and no significant impacts on cultural resources are anticipated.	Under the No Action Alternative there would be no expansion of the footprint, associated WDZ, and hazard areas for ordnance delivery or the use of ordnance requiring an expanded footprint. Existing use of the restricted areas would continue under this alternative and resources would continue to be managed in compliance with Federal law and DoD policy and regulations.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
Land Use	An increase of about 550 acres would be required for the proposed R-2202 restricted area expansion would affect Alaska State land only. Impulse noise levels of 62 dB CDNL would remain within the boundary of the existing Oklahoma Impact Area on DTA-West. These noise levels are compatible with military training uses on military land. Areas exposed to peak noise levels exceeding 115 dB PK 15(met) extend beyond military land to the northeast of DTA-West. However, peak noise levels of 115 dB PK 15(met) already affect this area on a regular basis, and the change is relatively minor (less that 4 percent increase in non-military land), resulting in no adverse impact. Only minor impacts on non-military uses other than recreation on DTA-West would result. No public use would be permitted within WDZs when mission activities occur. Under Alternative A this would include about 163,630 acres of non-military land underlying the extended R-2202 airspace beyond the boundary of military land. Restricted access may cause an adverse impact on existing leases, permits, and claims on State land, limited in extent to the few entities that hold these property interests. A Range Safety and Management Plan detailing access control measures and roles and responsibilities would be prepared by the Air Force for ADNR approval following the State Special Use Designation for the R 2202 expansion.	Impacts on land use, public access, and recreation would be similar under Alternative B as those described for Alternative A. An increase of about 42,420 acres would be required for the proposed restricted area expansion that would link R-2202 and R-2211 to include the addition of the Blair Lakes Impact Area. Reduced access to land under the WDZ during aerial ordnance delivery exercises would result in a significant adverse impact to surface access in the local area. Overall, RLOD Alternative B would have potentially significant adverse impacts on land use and real estate interests, public access, and recreation in the directly and indirectly affected areas. Selective mitigations could reduce these impacts to less than significant but would require more consultation and coordination with ADNR and their Special Use Designation application and public review process for public access control and limitation.	Under the No Action Alternative, no expansion of SDZs or hazardous areas would result. There would be no change in munitions use or access to military or non-military areas. Therefore, no changes or additional impacts to existing land use, access or recreation conditions would occur.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	Overall, implementation of RLOD Alternative A would have potentially significant adverse impacts on land use, recreation, and access on State lands, but coordination with ADNR and selected mitigations could reduce these to moderate levels.		
Infrastructure & Transportation	No adverse impacts to water, sewer or natural gas or transmission lines are anticipated. Although primary access arteries would not be adversely impacted, and rail access would see a net positive impact, transportation access would continue to remain an issue within the DTA and TFTA.	Under Alternative B, impacts discussed are identical to those presented under Alternative A, with the exception that the proposed 20-year vision for USARAK calls for improved access into TFTA (USARAK 2009-1).	No changes to existing infrastructure or transportation system conditions would occur under the No Action Alternative.
Socioeconomics	Existing commercial and residential uses in the area include: mining operations, recreation, subsistence, and aviation. Any access restrictions that would interrupt participation in these activities could result in additional costs from delays or rerouting, which, based on concerns expressed during the public scoping period and draft EIS public review, are anticipated to be significant without the implementation of mitigation measures. These would include such measures as notifying the public of the time and dates of ground access restrictions in advance and restricting military training during the most popular months (e.g., September) for recreation and subsistence harvesting, could lessen the likelihood of potential economic impacts.	Similar to Alternative A, potential economic impacts would be anticipated from a restriction in commercial and private access under Alternative B. Under Alternative B, the expanded restricted area would be significantly larger (e.g., 550 acres for Alternative A versus 42,420 acres for Alternative B) and thus, is anticipated to result in greater impacts than under Alternative A.	Under the No Action Alternative, there would be no expansion of the footprint, associated WDZ, and hazard areas for ordnance delivery, and no use of such ordnance as to require an expanded footprint. Therefore, no changes or additional impacts to existing socioeconomic resource conditions would occur under this alternative.
Subsistence	The RLOD proposed action would restrict ground access to areas currently available for subsistence harvesting by rural Alaska residents under Federal regulations.	Under Alternative B, the expanded restricted area would be significantly larger (e.g., 550 acres for Alternative A versus 42,420 acres for Alternative B) and thus, are anticipated to result in	Under the No Action Alternative, no additional airspace or expansion of SDZs is proposed. Individuals participating in subsistence in the nearby communities of Healy Lake,

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	Potential impacts on civil aviation and airports in the vicinity of the proposed RLOD are a possibility. With measures adopted to avoid or reduce potential impacts from restricted ground access or restricted airspace, significant adverse impacts to subsistence resources as defined by the ANILCA would not occur.	greater impacts than under Alternative A. With measures adopted to avoid or reduce potential impacts from restricted ground access or restricted airspace, significant adverse impacts to subsistence resources as defined by the ANILCA would not occur.	Dot Lake, and Dry Creek would be able to access the areas in order to harvest subsistence resources as it is currently practiced.
Environmental Justice	Significant land use or socioeconomic impacts would not create disproportionately high and adverse environmental or health effects on minority and low-income populations or children.	Same as Alternative A.	There would be no additional disproportionately high and adverse environmental and health effects on minority and low-income populations or children from the No Action Alternative, because restricted airspace would remain as currently configured and no additional airspace or expansion of SDZs or other hazard zones is proposed.

MITIGATION MEASURES:

- **State Land/Leasehold Avoidance (Land Use-Management, Access, Recreation; Socioeconomics)**

  Comply with ADNR comments to avoid leasehold properties in the north and south corners of the proposed restricted area by adjusting the borders of the Alternative A airspace.

- **ADNR Compliance Items (Safety-Ground; Land Use-Management)**

  Air Force will provide support to ADNR throughout the Special Use Designation process. The Air Force will develop a CONOPS and an Access and Safety Plan for the exclusive use of State land to support RLOD. The Special Use Designation process will identify areas and dates of closure and will have to indicate which activities are affected. The Access Plan will provide the maximum public use to the ground evacuation areas, closing such areas for the minimum period of time necessary to conduct such operations. The Access Plan (updated annually) will identify areas and dates of closure and will indicate which activities are affected. It will describe roles and responsibilities for securing the area, ensuring it is evacuated, publishing and posting closure notices, signs, and other media to advertise and alert public of the hazards, times, and locations.

- **Continued compliance with Army regulations on R-2202 (Physical Resources; Water Resources)**

  All applicable conservation, monitoring, and management procedures currently followed by USAG-FWA in the management of R-2202 will be applicable to the proposed action, including measures for the protection of soils and permafrost, including but not limited to, the Fort Wainwright INRMP and SWPPP and the monitoring guidelines of the ITAM Sustainable Range Awareness.

Table ES–3. Summary of Impacts for Realistic Live Ordnance Delivery *(Continued)*

Key: ADNR=Alaska Department of Natural Resources; ALCOM=Alaskan Command; ANILCA=Alaska National Interest Lands Conservation Act; BMPs=best management practice; CDNL=C-weighted day-night average sound level; CONOPS=Concept of Operations; dB=decibel; dB PK 15(met)=single-event peak level exceeded by 15 percent of events; DoD=U.S. Department of Defense; DTA=Donnelly Training Area; GBU=Guided Bomb Unit; HAP=hazardous air pollutant; INRMP=Integrated Natural Resources Management Plan; ITAM=Integrated Training Area Management; MOA=Military Operations Area; NHPA=National Historic Preservation Act; NM=nautical mile; PSD=prevention of significant deterioration; RLOD=Realistic Live Ordnance Delivery; ROD=Record of Decision; SDB=Small Diameter Bomb; SHPO=State Historic Preservation Officer; SOPs=standard operating procedures; SUA=Special Use Airspace; SUAIS=Special Use Airspace Information Service; SWPPP=Storm Water Pollution Prevention Plan; TA=Training Area; TFTA=Tanana Flats Training Area; USACE =U.S. Army Corps of Engineers; USAG-FWA=U.S. Army Garrison Fort Wainwright, Alaska; UXO=unexploded ordnance; VFR=Visual Flight Rules; WDZ=weapon danger zone.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
Airspace Management and Use	The military airspace for this proposal would be changed from a CFA to a restricted area. Aviation activities would increase slightly in the BAX restricted area above current levels, as it is estimated that approximately 70 percent of the USARAK helicopter operations currently conducted in R-2202 would be performed in the BAX restricted area. Air Force aircraft conduct a limited number of CAS missions throughout the year for Army ground-based activities in the BAX CFA and it is anticipated that such operations would occur in the future with establishment of a restricted area. For federal airways, this proposal may cause flight delays or require the FAA to route IFR air traffic around this active airspace. For jet/RNAV routes, air traffic operating along J167 above the higher altitude sector (FL180–220) of this proposed restricted area would not be affected by this proposal. This proposal to establish restricted airspace in an area that currently permits VFR air traffic access through the existing CFA may have moderate to significant impacts on the VFR aviation community without the implementation	As discussed for Alternative A, it is estimated that only the low altitudes (below 6,000 feet MSL) would be needed approximately 60 percent of the time with all three layers being used the other 40 percent. The potential impacts to federal airways, jet/RNAV routes, VFR air traffic, and local airports and airfields would be the similar to Alternative A. The existing flight safety procedures followed by the Army and Air Force for current flight training activities within this airspace would continue, as appropriate, to serve as the standard for minimizing impacts on other military and civil aviation airspace uses in the affected environment. Specific impacts or limitations the preferred airspace proposal may have on IFR and VFR air traffic would be examined in the FAA aeronautical study with subsequent consultations with USARAK and civil aviation concerns on those operational mitigations that may be needed to help minimize impacts.	The BAX CFA would continue to be used for current USARAK activities while allowing nonparticipating aircraft access through the existing active CFA in the BAX area.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	of appropriate mitigations, regarding VFR accessibility in this area. The Delta Junction public airport and the All West, Rocking T, Remington, and Wingsong Estates private airfields are located within 10-15 miles of the proposed restricted area. There would be no direct impacts on these airfields, except for the restrictions discussed for VFR air traffic operating between these locations and destinations south and east of this proposed restricted airspace.		
Noise	Noise levels exceeding 62 dB CDNL or 130 dB PK 15(met) would not extend beyond range boundaries. Aircraft operations in the BAX area may increase relative to baseline operations tempo, but time averaged noise levels would not be expected to exceed 65 dB L_{dnmr}. Supersonic flying operations would not be permitted in the BAX Restricted Area airspace. Noise impacts would not exceed the significance thresholds established for this action.	Same as Alternative A.	Under the No Action Alternative, no changes to munitions usage or aircraft activity would occur. Noise levels would remain as they are under current existing conditions.
Flight Safety	The majority of the flight activities to be conducted in this airspace would be USARAK helicopters operating to/from and within this proposed restricted area. The potential for aircraft mishaps, near misses/midair collisions, bird-aircraft strikes, and other flight safety risks would be minimal. Nonparticipating aircraft would not be permitted in this restricted airspace when active. Measures currently used by USARAK to maintain safe operating distances from ground	Same as Alternative A.	The No Action Alternative would not result in any changes to the existing CFA airspace environment, flight conditions, and safety programs currently associated with this airspace use.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	obstacles and other military and civil aircraft would continue to be used as a standard for ensuring flight safety is maintained for all concerned. The active status of this restricted area would be available through the SUAIS and other available advisory services.		
Ground Safety	Significant impacts associated with range safety and control, UXO and munitions safety, public access control, or fire and emergency response for this alternative are not expected to occur.	Same as Alternative A.	No change in ground operations from existing conditions would occur under the No Action Alternative.
Air Quality	The BAX area is located within the DTA, which is located in the Denali Borough and the Southeast Fairbanks Census Area, which are both in attainment of all NAAQS. The area proposed for the addition of the BAX airspace is adjacent to the DTA in Southeast Fairbanks Census Area and which is in attainment of all NAAQS. This alternative would not have any negative impacts on air quality or visibility in nearby Denali National Park.	Same as Alternative A.	Air quality impacts under the No Action Alternative would not differ from air quality impacts generated under existing operations undertaken in the BAX area.
Physical Resources	Given that the proposed action involves minimal to no disturbance of new or additional land surface, no adverse impacts on physical resources within the study area of this proposed action are expected to occur.	Same as Alternative A.	No change to existing ground operations would occur under the No Action Alternative.
Water Resources	Four new firing points and thirteen new target points would be added within the restricted area as part of this proposal. Inert ordnance, without high explosives, would be used at the training areas. Therefore explosive residues would not create adverse impacts at the target points.	Same as Alternative A.	Under the No Action Alternative the munitions usage at the existing target arrays and vehicle maneuvering would be the same as existing condition as described in the NEPA analysis in 2006 (USARAK 2006-1) and no additional impacts would occur.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	The compound 2,4-DNT is a component of some munitions used for training in this area. It is a carcinogenic compound and potentially can contaminate groundwater. The State of Alaska clean up levels are 0.005 parts per million for 2,4-DNT to protect groundwater (Walsh et al. 2004). Therefore, over time 2,4-DNT concentrations could accumulate at the firing points and concentrations could potentially exceed soil clean-up levels. Therefore, there is a potential for adverse impacts to groundwater quality. With mitigation and management actions, the adverse impacts would be reduced to not significant.		
Hazardous Materials and Waste	The ground-disturbing impacts of munitions usage at the existing target arrays and areas of vehicle ground maneuvering were permitted and subject to NEPA analysis in 2006, in the *Final Environmental Impact Statement for the Construction and Operation of a Battle Area Complex and a Combined Arms Collective Training Facility within U.S. Army Training Lands in Alaska* (USARAK 2006-1). Therefore, no adverse impacts would occur related to hazardous materials and waste.	Same as Alternative A.	Under the No Action Alternative, there would be no expansion of the restricted area over the BAX in DTA-East. Therefore, no additional hazardous material-related impacts would occur.
Biological Resources	The vegetation classes present in DTA-East project area are widespread across the project region and are not unique or considered sensitive communities, and are not associated with endangered or threatened species. Therefore, no significant adverse effects to vegetation communities are expected. Because a variety of training already occurs within the BAX project area and a variety of wildlife species occur there, the resident and migratory species are exposed to, and likely	Same as Alternative A.	The current amount of ground disturbance (from training, vehicles and live fire) would be expected to continue, and wildlife using the area would be expected to remain active in occupied habitats. Localized vegetation impacts from training would continue.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	habituated to, the types of disturbances that result from these types of activities. Wildlife habitats present within the project area are not associated with sensitive, endangered, or threatened species and are generally widely available within the project region. Changes in the ordnance and aircraft use in the BAX project area may have adverse but not significant impacts to local vegetation and wildlife. Impacts would be further reduced given implementation of proposed and ongoing mitigation such as Special Interest Management Areas, maintaining dialogue with BLM and ADNR to adjust restrictions, and impact avoidance measures.		
Cultural Resources	Although 153 archaeological sites are located under the training airspace, no significant impacts are anticipated to cultural resources or Alaska Native tribes or other Tribal entities from the airspace reclassification and its training use. Flying operations are not conducted at a frequency sufficient to result in time-averaged noise levels exceeding 65 dB DNL. Noise levels generated by munitions firing exceeding 62 dB CDNL would not extend beyond range boundaries. Adverse effects are likely for the 14 known archaeological sites within the expanded footprint of the BAX, as well as any sites found during surveys of the previously unsurveyed areas bounded by the expanded BAX SDZ footprint. In compliance with Section 106 of the NHPA, the Army has completed consultation with the Alaska SHPO and executed a Programmatic Agreement.	Same as Alternative A.	Under the No Action Alternative there would be no expansion of the restricted area over the BAX in DTA-East and no expansion of the BAX SDZ footprint. Existing use of the restricted areas would continue under this alternative and resources would continue to be managed in compliance with Federal law and DoD policy and regulations.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	The SHPO has concurred with the finding of no adverse effect, provided that a monitoring and data recovery program is implemented. Under the terms of the Programmatic Agreement, consultation with potentially affected Alaska Native tribes, ANCSA corporations, and Tribal government entities will continue for the duration of the Programmatic Agreement. No significant impacts on traditional cultural resources or Alaska Native activities are anticipated to result from the proposed new restricted area and ALCOM has complied with all requirements for Tribal consultation.		
Land Use	The primary land use on DTA-East is military training, and this would not change under the BAX proposal. Public uses taking place on DTA-East including: recreation, personal use and subsistence, hunting, gathering, trapping, and some timber harvesting would continue, but available time for access would become more limited. This proposal would also prevent use of portions of the Richardson Highway-Gerstle River Trail, the 33-Mile Loop Road, and the 12-Mile Crossing. Elimination of these access points would reduce the amount of recreation area available to the public within DTA-East. Noise contours show a slight increase in sound exposure and slight expansion of the area exposed to 62 dB CDNL and above. Noise exposure on areas outside the installation would remain well below 62 dB L_{dnmr}. No areas would experience incompatible averaged impulsive	This alternative would affect a larger portion of DTA-East, including TAs 501, 502, 503, 504, 505, 506, 507, 508, 510, 511, 512, 513, 514, and 515. The Richardson-Gerstle and 33-Mile Loop trails would be affected, as well as the trail network in TAs 512, 508, and 511. Other noted impacts are the same as Alternative A.	There would be no changes to the current project area under the No Action Alternative. Therefore, no additional impacts on land use, public access, or recreation would occur.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	noise levels. Under this proposal, civilian ground and air access would not be permitted within the project area when the BAX and restricted area are active with military training and exercises taking place. This would occur approximately between three and five days per week, depending on annual Army training schedules for training in this area. This would result in an adverse impact on the accessibility of trails and roads and to the use of areas served by those routes. Overall, both noise and access impacts of this proposal would have an adverse but less than significant impact on local recreation opportunities in the Delta Junction area. This impact is somewhat moderated considering a relatively small portion of local recreational activity uses in this area of DTA.		
Infrastructure & Transportation	No Effect		
Socioeconomics	Although there is no available data on the number of civilian general aviation flights that traverse the current BAX CFA, it is expected that the number of civilian flights traversing the area is low since there are no population centers in the BAX CFA. Potential impacts on civil aviation are not expected to adversely impact socioeconomic resources. Specific impacts or limitations this proposal may have on IFR and VFR air traffic would be examined in an FAA aeronautical study with subsequent consultation with USARAK and civil aviation concerns on those operational mitigations that may be needed to help	Same as Alternative A.	Under the No Action Alternative, socioeconomic resources would remain as described under current existing conditions, and no additional impacts would occur.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	minimize impacts. Civil general aviation contributes significantly to the local economy; mitigations identified in the FAA study that would minimize adverse impacts to civilian aviation could subsequently minimize adverse impacts to socioeconomic resources. Approximately 167 persons within the Southeast Fairbanks Census Area were identified under the proposed airspace. Noise levels exceeding 62 dB CDNL or 130 dB PK 15(met) would not extend beyond range boundaries into residential areas. Additionally, the area is currently exposed to low-level overflights and noise associated with military aircraft. These activities are not expected to adversely impact populations or socioeconomic resources.		
Subsistence	The area beneath the proposed restricted airspace is in the vicinity of two major highways and access to subsistence activities would not be heavily dependent on aircraft access. Potential impacts on civil aviation are not expected to adversely impact access to subsistence resources. The increase in military activities at the BAX may decrease the amount of time public access is permitted. The BAX area and the proposed restricted airspace would be active for a maximum of 238 days at all times of the year. For rural Alaska residents that regularly harvest subsistence resources within the public access areas of DTA (in which BAX is located), an increase in restrictions to public access could be an adverse impact. However, the nearby vicinity has large tracts of Federal land in which subsistence activities are permitted and do not	Same as Alternative A.	Under the No Action Alternative, no restricted airspace would be established. Existing military activities would continue. Subsistence activities would remain as they are currently practiced.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	have the same access restrictions as a military installation. No significant impacts to subsistence activities are expected as defined by ANILCA.		
Environmental Justice	Impacts such as airspace management, noise, land use, and socioeconomics would be less than significant or mitigated to this level. Impacts from this alternative would not create disproportionately high and adverse environmental or health effects on minority or low-income populations or children.	Same as Alternative A.	For the No Action Alternative, no restricted airspace and new target areas would be established and military activities would continue under existing conditions. There would be no additional disproportionately high and adverse environmental or health effects on minority and low-income populations or children.

MITIGATION MEASURES:

- **FAA's study (Airspace Management)**

  Pending the FAA's study of the preferred airspace proposal alternatives to determine specific impacts and mitigation measures to be taken to minimize any impacts on VFR and IFR air traffic, other existing mitigations would continue to be relevant in addressing potential impacts of the airspace proposals.

- **Eagle and migratory birds (Biological Resources)**

  Maintain consultation with USFWS with regard to compliance with Bald and Golden Eagle Protection Act and MBTA. As required, conduct bald and golden eagle nest surveys in other areas where airspace modification would occur over previously unsurveyed areas. Coordinate the results with USFWS.

- **Sensitive wildlife awareness training (Biological Resources)**

  Continue pilot and soldier education for awareness of sensitive wildlife species habitats and seasonal behaviors utilizing GIS mapping and discuss procedures to reduce disturbances and to increase safety by reducing potential for aircraft strikes.

- **Monitor effects of military training on wildlife (Biological Resources)**

  Continue to monitor effects of military training including overflights on select wildlife species (especially herd animals, waterfowl, and raptors) and fisheries during critical seasons such as breeding, young-rearing, and migration. Use knowledge to develop and implement strategies to minimize disturbance to priority wildlife in existing and new SUAs and restricted airspace. This would help natural resources and range managers to coordinate training schedules that minimize impacts on wildlife populations.

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative

- **Continue study of noise effects on wildlife (Biological Resources)**

  Continue effort to conduct a detailed study to assess the impacts and effects of noise on wildlife, particularly key species such as caribou and bison, during critical life cycle seasons. Use information to include protection requirements within a noise management plan.

- **NHPA compliance (Cultural Resources)**

  Mitigations for impacts to cultural resources are established through NHPA Section 106 consultation pursuant to 36 CFR 800. In compliance with Section 106 of the NHPA the Army has completed consultation with the Alaska SHPO and complied with all requirements for consultation with potentially affected Alaska Native Tribes, ANCSA corporations, and Tribal government entities to identify historic properties that may be affected, including TCPs, and develop management actions and mitigation measures to resolve any adverse effects, if required. It has been determined that significant adverse impacts to cultural resources and Alaska Native Tribes, ANSCA corporations, and Tribal government entities would not occur by the implementation of the BAX Restricted Area proposal.

  Mitigation measures include the amendment of the existing BAX Surface Danger Zone Programmatic Agreement to include the known and as yet undiscovered archaeological sites in the expanded BAX SDZ footprint. Specific Programmatic Agreement requirements are to survey new areas of the amended BAX SDZ within a period of five years from the amended agreement (9/9/12); add any sites that are discovered to the BAX SDZ monitoring plan; produce an annual report to the Alaska SHPO; update the Archaeological Resource Protection Act tri-fold handout and develop a placard describing cultural resources on the BAX SDZ that will be presented in the form of, at a minimum, one poster displayed at Range Control, and one interpretive panel placard to be displayed at an information kiosk located at the BAX range; and develop a cultural resource awareness PowerPoint presentation to be given to Soldiers and contractors to increase knowledge of cultural resource concerns and responsible actions, and knowledge of Alaskan Native communities. All of the above mentioned requirements are either completed or in progress. Annual monitoring of archaeological sites within the BAX SDZ began in August of 2009 and will continue for 10 years from this date.

  In accordance with AR 200-1, all NHPA Section 106 consultation has been completed. In the event that previously unrecorded or unevaluated cultural resources are encountered, the Army would manage these resources in accordance with the NHPA and other Federal and state laws, Air Force, and DoD regulations and instructions, and DoD American Indian and Alaska Native Policy.

- **Munitions contamination issues (Hazardous Materials and Waste; Water Resources; Biological Resources)**

  The Army may augment the effort for their existing program to identify possible munitions contamination at training areas on DTA-East. This program initiates the collection of baseline data to determine the location, extent, and potential migration of munitions contamination in soils, surface water, and groundwater. Based on these preliminary results, a long-term monitoring program could be developed to assess cumulative impacts to the withdrawal lands from ongoing military activities. These results could identify areas needing restoration, activities that pose the greatest environmental threat, and the potential mitigation measures to be implemented. Extensive and expedient investigations may be conducted in those areas considered to be exposure pathways, such as streams.

- **USARTRAK (Land Use-Access)**

  The Army will update information and maps available to the public on the USARTRAK website to identify changes in public access restrictions for

Table ES–4. Summary of Impacts for Battle Area Complex Restricted Area *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative

the expanded Army training activities within USAG-FWA training areas.

- **Relationships with regulatory agencies (Biological Resources; Land Use-Management, Access, Recreation)**

  The military will maintain an open dialogue with ADNR, BLM, ADFG and USFWS to assess current conditions and needed adjustments in locations or temporal restrictions to avoidances and procedures put in place by the ROD for this EIS.

- **Trespass control (Safety-Ground; Land Use)**

  The Army will expand enforcement to control trespass in DTA-East for the expanded operations.

- **Bird awareness programs (Safety-Flight)**

  Maintain respective bird awareness programs to address potential bird and wildlife hazards that may exist.

- **Fire management (Safety-Ground)**

  Continue fire management mitigations in accordance with current Army and USARAK regulations on the BAX.

- **Air traffic situational awareness (Airspace Management; Socioeconomics)**

  Pursue manning and funding for any enhancements required to expand situational awareness for air traffic in and around training areas for general and military aviation. Complete an internal study to identify coverage gaps in new SUAs and restricted airspace. One possible alternative is the establishment of a U.S. Army Airspace Information Center.

- **Subsistence use consultation (Subsistence)**

  Continue consultation efforts with subsistence parties to determine current subsistence use levels and areas on USAG-FWA lands as input into scheduling. Continue Tribal consultation efforts with subsistence users about hunting and fishing programs on USAG-FWA land. Continue to use a newsletter to provide information to subsistence users about existing and new military activities and the changes in access for subsistence users. Continue research and cooperative studies with Tribes to address possible effects of Air Force and Army activities on subsistence resources both directly within USAG-FWA installation boundaries and those outlying resources that may also be affected by military activities on DTA-West, DTA-East, YTA, and TFTA.

Key: 2,4-DNT=2,4 dinitrotoulene; ADFG=Alaska Department of Fish and Game; ADNR=Alaska Department of Natural Resources; AFI=Air Force Instruction; ANCSA=Alaska Native Claims Settlement Act; ANILCA=Alaska National Interest Lands Conservation Act; BAX=Battle Area Complex; BLM=Bureau of Land Management; CAS=Close Air Support; CDNL=C-weighted day-night average sound level; CFA=Controlled Firing Area; dB=decibel; dB PK 15(met)=single-event peak level exceeded by 15 percent of events; DNL=day-night average sound level; DoD=U.S. Department of Defense; DTA=Donnelly Training Area; EIS=environmental impact statement; FAA=Federal Aviation Administration; FL=flight level; GIS=geographic information system; IFR=Instrument Flight Rules; L_{dnmr}=onset rate–adjusted day-night average sound level; MBTA=Migratory Bird Treaty Act; MSL=mean sea level; NAAQS=National Ambient Air Quality Standards; National Register=National Register of Historic Places; NEPA=National Environmental Policy Act; NHPA=National Historic Preservation Act; RNAV=Area Navigation; ROD=Record of Decision; SDZ=surface danger zone; SHPO=State Historic Preservation Officer; SUA=Special Use Airspace; SUAIS=Special Use Airspace Information Service; TCP=traditional cultural property; TFTA=Tanana Flats Training Area; USAG-FWA=U.S. Army Garrison Fort Wainwright, Alaska; USARAK=U.S. Army Alaska; USARTRAK=Army Recreational Tracking System; USFWS=U.S. Fish and Wildlife Service; UXO=unexploded ordnance; VFR=Visual Flight Rules; YTA=Yukon Training Area.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
Airspace Management and Use	The proposed use of the expanded R-2205 restricted area would provide increased restricted protective airspace over YTA. Multiple training activities may be scheduled and conducted within the different subareas on the same day, normally Monday – Friday, for an estimated total 300 days annually. The airspace may be scheduled up to 24 hours on any particular training day. It is not anticipated that the overall number of USARAK helicopter operations or Air Force sortie missions would increase significantly above current representative levels with the creation of this restricted airspace. The FAA has indicated that the R-2205 expansion in the areas surrounding Eielson AFB would have some adverse effects on the published arrival and departure procedures used to separate Eielson AFB aircraft from other air traffic in the area. It may also limit FAA options for routing VFR and IFR air traffic in the Fairbanks, North Pole, and Fort Wainwright areas. The manner in which adverse impacts would be avoided or reduced would be stipulated in an agreement examined in the FAA aeronautical study of this proposal. Several federal airways are located within this region with V444/T232 being in closest proximity but sufficiently clear of this proposed airspace so as not to be impacted by this expansion. Jet/RNAV Routes J502-515 transits southwest of the proposed airspace and is sufficiently distant from the boundary so as not to be impacted by this proposal. The Birch, Alaska Highway, and other flyways commonly used by VFR air traffic are sufficiently distant from the proposed airspace areas so as not to have any impacts on this traffic when these airspace subdivisions are active. No public airports or private charted airfields are within the	This alternative would maintain the existing R-2205 without any expanded airspace and would, therefore, result in no changes to existing conditions in the current military and civil aviation uses of this airspace.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
	area of the proposed R-2205 expansion although the Fairbanks and Bradley airports and several charted private airfields are within the general region of this proposed airspace.	
Noise	The total number and types of munitions fired into the Stuart Creek Impact Area would not be expected to change. However, the expansion of R-2205 would allow a much larger range of weapons types to be used at DMPTR. Noise levels exceeding 62 dB CDNL do not extend beyond the boundaries of land currently withdrawn for military use. The area affected by peak noise levels (exceeding 115 dB PK 15(met)) would increase slightly under the proposed action. However, the non-military land area exposed to this noise level would not change in extent under the proposed action. Noise impacts would not exceed the significance thresholds established for this action.	Under the No Action Alternative, R-2205 would not be expanded and no changes to existing training operations would occur.
Flight Safety	The area covered by the R-2205 western expansion has little or no populace, therefore, the potential for any aircraft mishap in this area is minimal. The potential for a near miss/midair collision would be low to moderate for this proposed action since nonparticipating aircraft do not normally operate in this area and would be further restricted from entering this airspace when active. The potential for any bird/wildlife-aircraft strikes during low-altitude flights in this affected area would be low. There are measures already in place for maintaining awareness of any heightened bird activities and flight safety risks.	Flight safety risks and the continuing safety programs in effect to address these risks would remain the same as currently exists.
Ground Safety	The Army has existing plans, policies, and procedures in place to avoid or reduce adverse significant impacts, regarding range safety and control, UXO and munitions safety, public access control, and fire and emergency response. Consequently, adverse impacts are not expected to occur.	No change in existing ground operations would occur under the No Action Alternative.
Air Quality	The area proposed for the expansion of the R-2205 airspace is in attainment of all NAAQS, and the proposed action would not increase aircraft operations or munitions usage. As there will be no net increase in criteria pollutant or HAP emissions,	Air quality impacts under the No Action Alternative would not differ from air quality impacts generated under existing operations at R-2205.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
	the operation of R-2205 under the proposed action would result in less-than-significant to no air quality impacts. Since the R-2205 action would not result in an increase in emissions, it would not result in any impacts on Denali National Park.	
Physical Resources	No Effect	
Water Resources	No Effect	
Hazardous Materials and Waste	The proposed action would utilize existing on-the-ground range structure and would involve no new construction in the realigned boundary area. In addition, other than surficial ground disturbance associated with ground maneuvers of vehicles, no excavations or ground disturbance would occur. There are no known contaminated sites located in the realigned boundary area. Therefore, no adverse impacts would occur as a result of potentially encountering known or unknown contaminated soil. As part of the proposed action, vehicles would be used during training. There is the potential for accidental chemical release from refueling or maintenance activities during training activities. The Army would manage hazardous materials/waste in accordance with Army Regulation 200-1, *Environmental Protection and Enhancement* (Army 2007-1), which provides guidance on oil and hazardous substance spills, hazardous materials management, and the Installation Restoration Program (IRP). The risk of petrochemical spills is expected to increase under the proposed action due to the need to transport fuel and perform refueling operations in the field to support training requirements. However, due to the infrequency of such activities, combined with existing procedures and controls, the proposed action would result in the potential for adverse, but not significant impacts. There is the potential for munitions related hazardous materials	Under the No Action Alternative, there would be no realignment of the outer restricted area boundary. Therefore, additional hazardous material-related impacts would not occur.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
	impacts in association with this alternative. Munitions fragments and residues would be generated as a result of live-fire action. However, training would use existing impact areas for the discharge of ordnance from aircraft within the proposed restricted area, such that no adverse munitions-related chemical release impacts to the environment would occur.	
Biological Resources	As proposed for BAX, the restricted area expansion of the existing R-2205 would primarily differ from current activities by enabling additional air-to-ground ordnance use in the expansion areas. These activities may have localized effects to the vegetation and wildlife present within YTA. No new impact areas would be established and no substantially different impact types would be introduced into the R-2205 restricted areas as a result of this proposal. As for ongoing training, effects to biological resources would be localized and vegetation communities as a whole would not be expected to be adversely affected. The vegetation classes present in YTA are not unique or considered sensitive communities, but are widespread across the project region. Wildlife habitats present within the project area are not associated with sensitive, endangered, or threatened species, and are generally widely available within the project region. Wildlife species in the area are generally exposed to and may be habituated to military activities. The proposed expanded restricted areas in YTA do not contain important wildlife breeding, wintering, or nesting habitats. No significant effects to vegetation communities or wildlife populations are expected.	The current amount of localized ground disturbance (from training, vehicles, and live fire) would be expected to continue and wildlife using the area would be expected to remain active in occupied habitats. Localized vegetation impacts from existing training activities would continue.
Cultural Resources	No impacts are anticipated to cultural resources from the expansion of R-2205 and its training use. The annual average noise levels under the proposed airspace reclassification are not expected to noticeably change as a result of increased training activities, and would not be sufficient to damage any archaeological or historic architectural sites. In compliance with Section 106 of the NHPA, the Army has	Under the No Action Alternative there would be no expansion of R-2205 in YTA. Existing use of the restricted area would continue under this alternative and resources would continue to be managed in compliance with Federal law and DoD policy and regulations.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
	completed consultation with the Alaska SHPO, who concurred with the Army's determination of no adverse effect to historic properties. All compliance requirements for consultation with potentially affected Alaska Native tribes, ANCSA corporations, and Tribal government entities have been completed. No significant adverse impacts on traditional cultural resources or Alaska Native activities are anticipated to result from the proposed expansion of R-2205.	
Land Use	The proposal involves the use of airspace and weapons firing at existing training areas, impact areas, and ranges. There would be no new areas exposed to surface disturbance; therefore, no impact to existing infrastructure, leases, rights-of way, or permits on military land on military or non-military land would result. Under the proposal, the area exposed to 62 dB CDNL and greater would remain within military land, with a slight increase within Eielson AFB (from 126 to 230 acres). This would not extend as far as the housing areas on base. As such, no areas would experience incompatible impulse noise levels from airspace use, ground training, or ordnance use. Currently, the only public uses taking place on YTA are recreational, including personal use and subsistence hunting, gathering and trapping, and some timber harvesting and wood cutting. With increased use of YTA for hazardous operations (up to 300 days per year), time available for these public uses and range management tasks, including vegetation management, restorative projects, research, monitoring, and surveys, would be very limited. Coordinated scheduling could minimize conflicts in arranging adequate time on range for management functions. Civilian ground and air access is currently permitted within the proposal area with the exception of several off-limits areas, including the DMPTR and the Stuart Creek Impact Area.	There would be no changes to the current project area under the No Action Alternative. Therefore, existing land use, public access, and recreation would remain under existing conditions.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
	Under this proposal, civilian ground and air access would be restricted during activation of R-2205. No charted airports are located within the project area on military lands. Therefore, no direct impacts on air access would occur. The restricted airspace would continue to affect public air access across R-2205 within the project area during activation. An increase in training activities would lead to more frequent airspace closures for military purposes. Indirect impacts on temporal and spatial availability of airspace to public aviation are expected to be minor. The proposed training activities for DMPTR and YTA would greatly reduce the amount of time that training areas are available for public use and recreation. Even though training schedules are available on USARTRAK and the public can plan around them, substantially reduced access may have a minor adverse but not significant impact on recreation on YTA due to its relatively low use.	
Infrastructure & Transportation	No effect	
Socioeconomics	The population within the defined census block of the proposed restricted airspace is 166 persons. There would be no persons exposed to noise levels exceeding 62 dB CDNL, since these levels do not extend beyond the boundaries of DoD-owned land. Potential civil aviation impacts associated with this action may include slightly increased flight distances and increased flight time in order to avoid the restricted airspace. To the extent that they would occur, these potential aviation impacts would result in economic impacts due to additional operating costs (primarily related to increased fuel use) associated with avoiding restricted airspace, and the costs of any expended efforts in tracking the airspace status through available advisory services. The economic impacts of any military or other civil aviation aircraft being delayed or diverted to any extent around the	Under the No Action Alternative, the creation of restricted area for R-2205 in YTA would not be established and there would be no changes or additional impacts to socioeconomic resources from current existing conditions.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
	proposed airspace when active cannot be quantified due to the many factors to be considered in estimating such impacts.	
Subsistence	Because the land for this proposed action is within a Federal non-rural area and a State non-subsistence area, subsistence resources are not managed, and Alaska residents are not given priority to harvest resources within the area. Therefore, there would be no impacts on subsistence.	Same as the Proposed Action.
Environmental Justice	Other resources considered for environmental justice analysis (e.g., noise, land use, socioeconomics) would have less than significant impacts with mitigation measures referenced in those resource sections. Impacts from the proposed expansion of restricted area over R-2205 in YTA would not create disproportionately high and adverse environmental or health effects on minority or low-income populations or children.	Under the No Action Alternative, there would be no additional disproportionately high and adverse environmental or health effects on minority and low-income populations or children.

MITIGATION MEASURES:

- **FAA's study (Airspace Management)**

  Pending the FAA's study of the preferred airspace proposal alternatives to determine specific impacts and mitigation measures to be taken to minimize any impacts on VFR and IFR air traffic, other existing mitigations would continue to be relevant in addressing potential impacts of the airspace proposals.

- **Effects of military training on wildlife (Biological Resources)**

  Continue to monitor effects of military training including overflights on select wildlife species (especially herd animals, waterfowl, and raptors) and fisheries during critical seasons such as breeding, young-rearing, and migration. Use knowledge to develop and implement strategies to minimize disturbance to priority wildlife in existing and new SUAs and restricted airspace. This would help natural resources and range managers to coordinate training schedules that minimize impacts on wildlife populations.

- **Sensitive wildlife awareness training (Biological Resources)**

  Continue pilot and soldier education awareness of sensitive wildlife species habitats and seasonal behaviors utilizing GIS mapping and discuss procedures to reduce disturbances and to increase safety by reducing potential for aircraft strikes.

- **Continue noise effects study on wildlife (Biological Resources)**

  Continue effort to conduct a detailed study to assess the impacts and effects of noise on wildlife, particularly key species such as caribou and bison, during critical life cycle seasons. Use information to include protection requirements within a noise management plan.

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative

- **NHPA compliance (Cultural Resources)**

  Mitigations for impacts to cultural resources are established through NHPA Section 106 consultation pursuant to 36 CFR 800. In compliance with Section 106 of the NHPA the Army has completed consultation with the Alaska SHPO and complied with all requirements for consultation with potentially affected Alaska Native Tribes, ANCSA corporations, and Tribal government entities to identify historic properties that may be affected, including TCPs, and develop management actions and mitigation measures to resolve any adverse effects, if required. It has been determined that significant adverse impacts to cultural resources and Alaska Native Tribes, ANSCA corporations, and Tribal government entities would not occur by the implementation of this proposal.

  In accordance with AR 200-1, all NHPA Section 106 consultation has been completed. In the event that previously unrecorded or unevaluated cultural resources are encountered, the Army would manage these resources in accordance with the NHPA and other Federal and state laws, Air Force, and DoD regulations and instructions, and DoD American Indian and Alaska Native Policy.

- **Munitions contamination issues (Hazardous Materials and Waste; Biological Resources)**

  The Army may augment the effort for their existing program to identify possible munitions contamination at impact areas on YTA. This program initiates the collection of baseline data to determine the location, extent, and potential migration of munitions contamination in soils, surface water, and groundwater. Based on these preliminary results, a long-term monitoring program could be developed to assess cumulative impacts to the withdrawal lands from ongoing military activities. These results could identify areas needing restoration, activities that pose the greatest environmental threat, and the potential mitigation measures to be implemented. Extensive and expedient investigations may be conducted in those areas considered to be exposure pathways, such as streams.

- **Relationships with regulatory agencies (Biological Resources; Land Use)**

  The military will maintain an open dialogue with ADNR, BLM, ADFG, and USFWS to assess current conditions and needed adjustments in locations or temporal restrictions to avoidances and procedures put in place by the ROD for this EIS.

- **Trespass control (Safety-Ground; Land Use)**

  The Army would expand enforcement to control trespass in YTA for the expanded R-2205 activities.

- **Special use airspace safety (Safety-Flight)**

  Continue efforts to comply with the respective Service formal flight safety programs, outlined in directives/regulations with supplements, that dictate those aircrew responsibilities and practices aimed at operating all manned and unmanned aircraft safely in existing modified and new SUAs.

- **Subsistence use consultation (Subsistence)**

  Continue consultation efforts with subsistence parties to determine current subsistence use levels and areas on USAG-FWA lands as input into scheduling. Continue Tribal consultation efforts with subsistence users about hunting and fishing programs on USAG-FWA land. Continue to use a newsletter to provide information to subsistence users about existing and new military activities and the changes in access for subsistence users. Continue research and cooperative studies with Tribes to address possible effects of Air Force and Army activities on subsistence resources both directly within USAG-FWA installation boundaries and those outlying resources that may also be affected by military activities on DTA-West,

Table ES–5. Summary of Impacts for Expand Restricted Area R-2205 *(Continued)*

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
DTA-East, YTA, and TFTA.		

Key: ADFG=Alaska Department of Fish and Game; ADNR=Alaska Department of Natural Resources; AFB=Air Force Base; AFI=Air Force Instruction; ANCSA=Alaska Native Claims Settlement Act; BLM=Bureau of Land Management; CDNL=C-weighted day-night average sound level; CFR=Code of Federal Regulations; dB=decibel; dB PK 15(met)=single-event peak level exceeded by 15 percent of events; DMPTR=Digital Multi-Purpose Training Range; DoD=U.S. Department of Defense; EIS=environmental impact statement; FAA=Federal Aviation Administration; GIS=geographic information system; HAP=hazardous air pollutant; IFR=Instrument Flight Rules; NAAQS=National Ambient Air Quality Standards; NHPA=National Historic Preservation Act; RNAV=Area Navigation; ROD=Record of Decision; SHPO=State Historic Preservation Officer; SUA=Special Use Airspace; TCP=traditional cultural property; TFTA=Tanana Flats Training Area; USAG-FWA=U.S. Army Garrison Fort Wainwright, Alaska; USARAK=U.S. Army Alaska; USARTRAK=Army Recreational Tracking System; USFWS=U.S. Fish and Wildlife Service; UXO=unexploded ordnance; VFR=Visual Flight Rules; YTA=Yukon Training Area.

Table ES–6. Summary of Impacts for Night Joint Training

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
Airspace Management and Use	Alternative A would extend the March and October MFE operations from 10:00 p.m. to midnight (12:00 a.m.) local time within the SUA typically used for these evening training missions, as well as the proposed new SUA. The MFE sortie-operations projected for the extended night hours should have minimal effects on civil aviation airspace uses. The later evening military flights during hours of darkness in which VFR aircraft would not normally operate should have minimal impacts on this aviation sector. VFR flights that may occur during later hours could obtain information on the active status of the MOAs and restricted areas being activated for missions and flight activities and plan their flight times/routes accordingly. This proposal would have minimal effects on the Fairbanks and Anchorage International airports and any other locations having flight activities during the later night hours.	Alternative B would include both MFE and routine training operations being conducted during the extended night hours, but not normally on the same evenings. Routine training during extended night time hours would be considerably less than the number of MFE operations to be conducted during those later hours. The relatively small proportion of MFE or routine training sortie-operations that would occur during the extended night hours would have little impact on Federal airways, jet/RNAV routes, VFR air traffic, or public/private airfields.	The No Action Alternative would not involve any MOA operations beyond 10:00 p.m. and would not change existing airspace uses and ATC system capabilities.

Table ES–6. Summary of Impacts for Night Joint Training *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
Noise	The shift in time of sortie-operations to after 10:00 p.m. would result in an increase of approximately 1 dB L_{dnmr} in all JPARC training airspace. Supersonic noise levels (CDNL) would also increase by about 1 dB beneath those airspace units that allow supersonic training. Noise impacts from night flights would not exceed the significance thresholds established for this action. Late-night munitions delivery is also a component of this proposal and would occur on ranges at which late-night munitions training already takes place. Noise impacts would not exceed significance thresholds established for this action component.	Same as Alternative A with the addition of routine training during all times of the year.	Under the No Action Alternative, operations in the MOA would continue to cease prior to 10:00 p.m. and noise levels would not change from existing conditions.
Flight Safety	This proposal would present minimal additional risk to flight safety while conducting the later night training operations. The reduced level of military operations and civil air traffic during later hours would reduce the potential for interactions between military and civil aircraft, thus minimizing the risk of any near-misses or midair collisions. The potential for any bird/wildlife aircraft strikes during later evening hours would always be a possibility, therefore, the measures currently in place for monitoring, reporting, and avoiding these hazards would continue to be followed by the Air Force for the proposed night operations.	Same as Alternative A with the addition of routine training during all times of the year.	The No Action Alternative would maintain nighttime flight operations within the timeframes and flight safety conditions that currently exist with those operations.
Ground Safety	This alternative does not include activities that would pose ground safety hazards, such	Same as Alternative A with the addition of routine training during all times of the year.	The No Action Alternative would maintain nighttime ground safety

Table ES–6. Summary of Impacts for Night Joint Training *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	as air-to-ground or live-fire ordnance training. Consequently, impacts on ground safety are not expected.		operations within the timeframes that currently exist with those operations.
Air Quality	For each of the proposed action alternatives, the proposed NJT action would shift the times at which nighttime sorties are conducted and would not result in an increase in flight activities or a change in the location of these sorties. Since flights would be spaced out over a longer period of time during the night, it will result in additional dispersion of aircraft emissions over the region and lower localized impacts. An air quality analysis of the impacts from Alternatives A and B was not conducted for this proposed action, as there would not be an overall change in the aircraft training emissions or to air quality in the affected region from current baseline conditions due to this action.	Same as Alternative A with the addition of routine training during all times of the year.	Air quality impacts under the No Action Alternative would not differ from air quality impacts generated under existing operations.
Physical Resources	No Effect		
Water Resources	No Effect		
Hazardous Materials and Waste	Contaminated sites are not applicable to this proposed action, as no ground activities would occur as part of this proposal. The expenditure of live ammunition or detonations has the potential to release hazardous chemicals or other elements, such as heavy metals, into the environment. However, the proposed training and exercises would use existing impact areas within R-2205	Same as Alternative A with the addition of routine training during all times of the year.	MOA hours would continue to be limited to 10:00 p.m.; therefore, impacts would be similar, but less, than those described for Alternative A.

Table ES–6. Summary of Impacts for Night Joint Training *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	in YTA (Stuart Creek) and R-2202 in DTA-West (Oklahoma). These impact areas would be managed in accordance with current Federal, State of Alaska, Air Force, and Army regulations for the management, safe handling, and disposal of hazardous waste and materials associated with live and inert ordnance and UXO.		
Biological Resources	Because no infrastructure is needed, no ground effects are associated with the NJT proposed action; therefore, no impacts on vegetation would occur. The extended flight operations are proposed for March and October, actions would not be expected to coincide with the peak times of waterfowl migration (May and September) but would overlap more than do current operations. The greatest effect on waterfowl may be the increase in aircraft overflight at night roosting areas. However, with current avoidance restrictions in place, disturbance incidents are expected to be minimal. Bird-aircraft strike incidences have the potential to increase, but the potential effects of unavoidable bird-aircraft collisions on populations of waterfowl or other wildlife would be negligible and would not be measurable. Alternative A does not propose new threats to sensitive big game activities and would be expected to have little to no adverse effects to these species.	Alternative B may present a somewhat higher potential for increased bird-aircraft strikes. This adverse impact would require more intensive planning among the BASH Team, pilots, and route planners to maintain safety. Otherwise impact potential would be the same as Alternative A with the addition of routine training during all times of the year.	Under the No Action Alternative, JPARC MOA hours would not be extended past 10:00 p.m.; therefore, wildlife resources would be expected to remain as under existing baseline conditions.

Table ES–6. Summary of Impacts for Night Joint Training *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	Overall impacts to biological resources from Alternative A are expected to be adverse but not significant, and would be further reduced given implementation of mitigation and impact avoidance measures.		
Cultural Resources	Compliance with all requirements for Tribal consultation has been completed. No impacts are anticipated to cultural resources, traditional resources, or Alaskan Native activities from the proposed change in airspace operating hours and its training use. In compliance with Section 106 of the NHPA, ALCOM, on behalf of the Air Force, has completed consultation with the Alaska SHPO and determined that no historic properties will be affected by implementation of the proposed action.	Same as Alternative A with the addition of routine training during all times of the year.	Under the No Action Alternative there would be no change in operating hours in JPARC. Existing use of the airspace would continue under this alternative and resources would continue to be managed in compliance with Federal law and DoD policy and regulations.
Land Use	This proposal would not result in impacts to land use, access and recreation. Average noise levels in affected MOAs would increase by approximately 1 dB. This change would result in imperceptible change in noise levels experienced on the ground currently, but these noise events could occasionally be loud enough to awaken or annoy a small percentage of persons. All existing flight avoidance procedures would continue. This proposal would result in minimal change in night noise under restricted airspace over military lands and would have no impact on recreation use. The night bombing component of this proposal would have minor impacts on land	Same as Alternative A with the addition of routine training during all times of the year.	For the No Action Alternative, there would be no change in night operations in MOAs and selected restricted airspace from current levels, and no change or additional impacts would result.

Table ES–6. Summary of Impacts for Night Joint Training *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	use and recreation. There would be no impacts to public access.		
Infrastructure & Transportation	No Effect		
Socioeconomics	It is anticipated that a change in flight operations to night hours would not substantially change noise levels under the airspace and would not be expected to adversely impact residential or recreational users. In addition, current night time training activities within the affected environment would not be anticipated to present a significant impact on civilian air traffic since trends suggest that fewer IFR flights generally occur during the later evening hours and very little VFR flights occur during hours of darkness. Similarly, night bombing at two existing impact areas on DTA-West and YTA does not represent a change in activities. Resulting noise levels of concern would remain within military boundaries and away from existing population centers. The potential for impacts on socioeconomic resources from night training are anticipated to be low.	Under Alternative B, the number of nighttime sorties is expected to remain the same and occur during MFEs, as is the current situation, but would be divided between the months of March and October and would extend the operating hours until midnight and landing by 1:00 a.m. Under Alternative B, impacts on socioeconomic resources are anticipated to be similar to those described under Alternative A. The potential for impacts to socioeconomic resources under Alternative B are anticipated to be low to medium.	Under the No Action Alternative, socioeconomics resources would remain under current existing conditions.
Subsistence	Under Alternative A, the change in flight operations, including bombing, to night hours would not substantially change noise levels under the airspace and is not expected to adversely impact wildlife species. No significant impacts, as defined by ANILCA, on subsistence resources or	Potential impacts on subsistence resources and activities would be the same as those described under Alternative A.	No changes in times of flight are proposed under the No Action Alternative. Therefore, subsistence resources would be the asme as under current existing conditions.

Table ES–6. Summary of Impacts for Night Joint Training *(Continued)*

Resource Area	Alternative A	Alternative B (Preferred Alternative)	No Action Alternative
	activities are expected.		
Environmental Justice	No Effect		

MITIGATION MEASURES:

- **National Wild and Scenic Rivers Protection (Biological Resources; Land Use-Management, Access, Recreation)**

  For the period of May 15 to September 30, expand the Gulkana (west, middle, and north forks) and Delta National Wild and Scenic Rivers' (and others, as designated) Flight Avoidance Areas to include portions within new MOA boundaries using a 5-nautical mile buffer either side of the river centerline with 5,000 feet MSL minimum altitude. The river corridors will include their headwater lakes areas (Tangle Lakes and Dickey Lake).

- **VFR Flight Corridors (Airspace Management; Safety – Flight; Biological Resources; Land Use-Management, Access, Recreation; Socioeconomics; Subsistence)**

  Extend the VFR flight corridor over the Richardson Highway between Delta Junction and Glennallen to include the highway segment under the new Paxon MOA. The corridor laterally will be 3 miles on either side of the Richardson Highway and vertically go from the surface up to 4,500 feet MSL. (The MOA would only go down to 5,000 feet MSL over the corridor to allow a 500-foot buffer.) As an extra safety measure, designated VFR corridors are intended to be free of high-speed Air Force aircraft, thereby allowing unimpeded flight by civilian aircraft. Corridors such as this have been used extensively for the safe transit of civilian aircraft where the military currently flies low in MOAs. This new corridor would continue to allow unimpeded VFR flights below the floor of the proposed Paxon low MOA. An additional benefit of the VFR corridor is a reduced noise level over the Paxson Fish Hatchery from the higher flying military aircraft.

- **Concentrated Activity Areas (Land Use-Management, Recreation; Socioeconomics)**

  Comply with flight avoidance areas established by the 11th Air Force Airspace and Range Team and listed in the 11th Air Force Airspace Handbook. Areas not specified by the ROD may be added, increased, decreased, or removed by the 11th Air Force Airspace and Range team as situations dictate (e.g., a mine and its air operations cease to exist).

Key: ALCOM=Alaskan Command; ATC=Air Traffic Control; BASH=bird/wildlife-aircraft strike hazard; CDNL=C-weighted day-night average sound level; dB=decibel; DoD=U.S. Department of Defense; JPARC=Joint Pacific Alaska Range Complex; L_{dnmr}=onset rate–adjusted day-night average sound level; MFE=major flying exercise; MOA=Military Operations Area; MSL=mean sea level; NHPA=National Historic Preservation Act; NJT=Night Joint Training; RNAV=Area Navigation; ROD=Record of Decision; SHPO=State Historic Preservation Officer; SUA=Special Use Airspace; UXO=unexploded ordnance; VFR=Visual Flight Rules; YTA=Yukon Training Area.

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
Airspace Management and Use (Key impacts by individual proposed UAV corridor)	**Link between Eielson AFB and R-2211** The proposed restricted area would adjoin the ceiling of the Eielson AFB Class D airspace and would require that UAV flights be separated from other airfield operations while transitioning between the runway environment and the overlying corridor. Procedures would be outlined in a formal agreement among the responsible UAV functions, Eielson AFB airfield management, and the Fairbanks/ Anchorage ATC facilities to define how this airspace would be integrated with the Class D airspace structure and uses, when active. The Federal airway potentially affected by this proposal is the V444/T232/A2/A15 segment that intersects this corridor. An average of two IFR flights transits this airway daily with typical assigned altitudes at 8,000 feet MSL and above. This is within the range of altitudes proposed for this corridor use. Depending on the days and time periods this restricted area is activated, there may be a minimal impact on these few daily flights should they be delayed or rerouted around this corridor by the FAA. This proposal has the greatest potential to adversely affect VFR air traffic operating along the highways, flyways, and other flight paths commonly flown between Fairbanks and points south and southeast where they would typically operate through the area of this proposed restricted area, without mitigations to avoid or reduce adverse impacts. Fairbanks International, Bradley, and several other more distant public and private airfields in the general area may be potentially affected by the ability for based aircraft to transit to/from destinations where their routes of flight would normally require transit through this proposed airspace. As noted by the FAA, this corridor would have the potential to affect the routing and sequencing of Fairbanks arriving and departing traffic. It was also noted that the Fairbanks TRACON airspace provides flight training opportunities for both VFR and IFR flight training that could be also affected by this proposal.	Same as Alternative A for each proposed UAV corridor. Currently, a Certificate of Authorization is used as an alternative to establishing a restricted area for limited UAV types and operational needs. USARAK currently uses this option as needed to support their limited UAV requirements. Because of the restrictive nature of a Certificate of Authorization, the potential effects of establishing this type designation was considered to be the same as discussed above for Alternative A relative to the limitations and restrictions the active status of this corridor may have on civil aviation airspace uses.	Under this alternative, no restricted area or other designated airspace would be considered for a UAV corridor; therefore, there would be no additional impacts on civil aviation use of this airspace.
Airspace Management and Use	**Link between Eielson AFB and R-2205** Activation of this proposed corridor would be independent of or in	Same as Alternative A.	Under this alternative, no restricted area or other designated airspace would

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	conjunction with the proposed restricted area expansion for R-2205 to integrate/accommodate compatible USARAK and Air Force flight activities In all cases, this airspace would be under the positive control of the Fairbanks TRACON or Anchorage ARTCC to ensure separation is maintained between this corridor use and other nonparticipating IFR air traffic in region. No Federal airways transit within or close proximity to this proposed corridor, therefore, the potential direct impacts of this restricted airspace on airway traffic would be minimal. However, as noted by the FAA, there may be indirect impacts on any airway traffic that would normally be directed by ATC through this affected airspace while transiting to/from Ladd AAF, Eielson AFB, or Fairbanks International. The only jet/RNAV route transiting the affected area is the NCA 22 track used primarily by air traffic operating at FL290 and above and would not be impacted by use of this restricted airspace corridor. Public input suggests the majority of VFR air traffic flights operate west of the Eielson AFB and adjacent YTA region with this corridor having minimal impact on this aviation community. No public airports or private airfields are located in close proximity to this proposed corridor.		be considered for establishing this UAV corridor; therefore, there would be no additional impacts on civil aviation use of this airspace.
Airspace Management and Use	**Link between Allen Army Airfield and R-2202** This corridor would provide the restricted airspace environment required to transit UAV aircraft between Allen AAF and R-2202. Allen AAF serves Fort Greely military aviation activities while permitting civil aircraft to operate at this airfield on a prior permission required basis. This proposed restricted area corridor is located within or near federal airway V-444/T-232, V-515, and V-481/T226/B25, which all converge at Delta Junction. FAA data indicate the daily average use of these routes is 2 to 3 IFR flights. Potential impacts of this restricted area on the lower density use of these airways and any other	Same as Alternative A.	No restricted area or other designated airspace would be established to support any UAV operations; therefore, there would be no additional impacts on the current uses of this airspace.

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	off-route air traffic in this region would be minimal, depending upon the flight times/altitudes and the activated corridor times/altitudes use which would be under the positive control of the Anchorage ARTCC. For jet/RNAV routes, the daily average 3 IFR flights en route along the J-167 segment transiting this region would be above the altitudes proposed for the restricted area corridor and be unaffected by this action. This proposed restricted area would cross the Richardson Highway flyway commonly used by VFR aircraft to transit between the Fairbanks area and points south of the Allen AAF. During the times this airspace is active, VFR flights would be restricted from operating through this area and would need to either delay their flights or circumvent Allen AAF to the west to remain clear of this corridor. This impact would be increased during time periods that both this corridor and the proposed BAX restricted area are active. Such impacts could be considered significant, depending upon the extent to which one or both restricted areas are activated and at what altitudes and those mitigation measures to be considered by USARAK to minimize impacts on this aviation community. Several airfields are located in the immediate area to include Delta Junction, and six to eight private airfields within about a 10-NM radius of the Allen AAF. Many of these airfield operations would be VFR flights which may be potentially impacted by restricted airspace crossing the Richardson Highway flyway.		
Airspace Management and Use	**Link between R-2202 and R-2211** This corridor would enable UAV training flights to transit between the two restricted areas so as to maximize use of their respective range capabilities. There are no federal airways transiting within the proposed airspace. No jet/RNAV routes are located within or near the proposed corridor. Depending on the altitudes activated for this corridor, VFR air traffic may be unable to transit through this area at the lower altitudes required to remain below this active airspace. Depending on the	Same as Alternative A.	No restricted area or other designated airspace would be considered for UAV operations; therefore, there would be no additional impacts on current civil aviation use of this airspace.

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	volume of VFR aircraft that operate within this area, it cannot be determined to what extent this restriction would impact the general aviation community. VFR pilots having a need to operate within this area may have to delay or otherwise alter their flights to avoid this restricted area when active. The active status of this airspace would be provided via the SUAIS and other advisory services. No public or private airfields are located within close proximity to this proposed corridor.		
Airspace Management and Use	**Link between R-2205 and R-2202** This corridor would be used for those training missions where UAV may transition between these restricted areas and use the range impact areas within each. This proposed corridor would cross federal airway V-444/T232 and could encompass those altitudes assigned by ATC for this route air traffic. This proposal may have moderate potential impacts on the reported two to three average daily flights using this airway and any transition of these aircraft to/from Fairbanks International. ATC may have to reroute or delay nonparticipating aircraft from this active corridor, when necessary. Mitigation measures to address adverse impacts will be examined by the FAA. The two jet/RNAV routes transiting within or near this proposed corridor are J502-515 and J167. The daily average 6 to 12 IFR flights on J520-515 and 3 IFR flights on J-167 would normally transit at altitudes above the corridor ceiling and would not be impacted by this active restricted area. This corridor may have the potential for moderate to significant impacts on VFR aircraft that frequently operate along those highway, river, and pipeline flyways commonly flown by this traffic between the Fairbanks and Delta Junction areas. This may cause flight delays or rerouting. Pilots would need to obtain the active status of this airspace through NOTAMs, the SUAIS, and other available advisory services prior to conducting a flight through this area. A number of public and private airfields are located in the Fairbanks and Delta Junction areas that, while not directly affected by this	Same as Alternative A.	No restricted area or other designated airspace would be considered to support UAV operations; therefore, there would be no additional impacts on civil aviation use of this airspace.

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	proposal, may have aircraft that would be subject to flight restrictions, delays, and other inconveniences if their route of flight transited this proposed airspace.		
Airspace Management and Use	**Link between Fort Wainwright and R-2211** The corridor would adjoin the class D airspace overlying Fort Wainwright (Ladd AAF) and would therefore require a coordinated effort in planning UAV takeoffs, landings, and transition to the restricted area corridor be appropriately segregated from other airfield operations and missions within and outside of this terminal airspace. Procedures for integrating this corridor airspace with the Ladd AAF Class D airspace and segregating UAV operations from other air traffic would be defined in an agreement among all responsible entities. This proposed corridor would cross V-444/T232 and have the potential for impacts on this airway traffic. The extent to which this corridor would impact control and management of air traffic operations in this airspace environment will be further examined in the FAA aeronautical study. En route jet/RNAV air traffic in level flight at the higher altitudes on J502-515 and other routes transiting within/near this affected area would not be impacted by this proposed corridor. The potential impacts this proposed corridor may have on VFR air traffic would be the same as discussed above for other restricted airspace proposals intersecting commonly used VFR flyways. The location of this corridor within the Fairbanks terminal airspace and its close proximity to Fairbanks International, Eielson AFB, the Bradley airport, and several private airfields in this general area may impact the ATC options for routing air traffic arrivals/departures through this airspace environment. Any potential impacts this proposal may have on this terminal airspace environment, arrival/departure routes and gates, and instrument procedures would be the focus of the FAA aeronautical study for this proposal.	Same as Alternative A	No restricted area or other designated airspace would be considered to support UAV operations; therefore, there would be no additional impacts on civil aviation use of this airspace.
Airspace Management and	**Link between Fort Wainwright and R-2205**	Same as Alternative A.	No restricted area or other designated airspace would

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
Use	The manner in which this corridor would be scheduled, managed, and used is the same as discussed previously to link Fort Wainwright with R-2211. This corridor would not intersect any federal airways and therefore would not have any direct impacts on airway traffic. This corridor would also not intersect any jet/RNAV routes in the area and therefore not impact this en route traffic other than potentially any transitioning of this route traffic between a jet route and Fairbanks International Airport. This proposed corridor is more distant from those areas and flyways where VFR air traffic more frequently operate and may have less impact on general aviation.		be considered to support UAV operations; therefore, there would be no additional impacts on civil aviation use of this airspace.
Noise	The corridors would have a floor altitude of 1,200 AGL. Overflight noise levels would be similar to noise levels generated by common civilian aircraft. Time-averaged noise levels in the corridors were calculated under the highly conservative assumption that all UAVs would follow a single flight track and would fly at the lowest altitude permitted. Under this scenario noise levels generated by the proposed UAV operations would be approximately 35 dB L_{dnmr}. UAV overflight could potentially result in annoyance, but noise impacts would not exceed significance thresholds established for this action.	Same as Alternative A.	Under the No Action Alternative, restricted area UAV corridors would not be established, UAV activity would continue to occur as it does under baseline conditions, and no additional noise impacts would occur.
Flight Safety	The flight safety assessment includes all seven proposed UAV corridors. The potential risk of an aircraft mishap for UAV operations under this alternative would be low. Mishap rates for UAV aircraft continue to decline as technologies, pilot-operator experience, and other advances provide for the enhanced command, control, and operation for UAVs and flight activities. The potential for a near miss/midair collision between UAV and other military or civilian aircraft would be minimal since these operations would be contained within protective airspace that separates these activities from other aircraft.	Same as Alternative A.	No UAV activities or protective airspace for their operations would be considered under the No Action Alternative; therefore, there would be no additional impacts or added flight or ground safety concerns associated with this alternative.

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	Since UAV aircraft operate at much lower speeds and has a smaller profile than manned aircraft, the potential for bird-strike damage causing catastrophic damage is extremely low.		
Ground Safety	UAV armaments would not be used within these corridors; therefore, this alternative does not include activities that pose ground safety hazards, such as air-to-ground or live-fire ordnance training. Consequently, impacts on ground safety are not expected to occur.	Same as Alternative A.	Under the No Action Alternative, restricted area UAV corridors would not be established and UAV activity would continue to occur as it does under current existing conditions.
Air Quality	The air quality assessment includes all seven proposed UAV corridors. Any increases in particulate matter and carbon monoxide emissions from proposed operations in the seven UAV corridors would not exceed their applicable *de minimis* conformity thresholds of 100 tons per year. Thus, air quality impacts from Alternative A would not be considered significant, and a conformity determination is not necessary. Additionally, increases in emissions of the other criteria pollutants from Alternative A would not exceed their applicable PSD significance thresholds of 250 tons per year. Combustive emissions from the operation of UAVs in the corridors would contain HAPs that could potentially impact public health. However, as indicated by the low level of criteria pollutant emissions, UAV operation in the corridors as proposed under Alternative A would not be expected to result in significant impacts on public health, as the mobile and intermittent nature of these sources and the wide geographic regions of proposed operations would produce minimal impacts of HAPs in a localized area. As the increases in emissions that would result from operations under Alternative A would be minimal, the impacts from proposed emissions under this alternative on air quality-related values in Denali National Park would be expected to be negligible.	Same as Alternative A.	Air quality impacts under the No Action Alternative would not differ from air quality impacts generated by existing operations in the affected areas.
Physical Resources	No Effect		

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
Water Resources	No Effect		
Hazardous Materials and Waste	No Effect		
Biological Resources	No Effect		
Cultural Resources	The cultural assessment includes all seven proposed UAV corridors. No impacts are anticipated to cultural resources from the proposed establishment of the UAV corridors and their training use. In compliance with Section 106 of the NHPA, the Army has completed consultation with the Alaska SHPO, who has concurred with the Army's determination of no adverse effect to historic properties. No significant impacts on traditional cultural resources or Alaska Native activities are anticipated to result from the proposed establishment of the UAV corridors and their training use. All compliance requirements for consultation with potentially affected Alaska Native tribes, ANCSA corporations, and Tribal government entities have been completed.	Same as Alternative A.	Under the No Action Alternative there would be no expansion of restricted areas for the proposed UAV access corridors, no UAV corridors or operations would occur between various elements of SUA in the JPARC and impacts on cultural resources would be as under existing conditions.
Land Use	The land use assessment includes all seven proposed UAV corridors. The primary source of impact to surface uses is from noise from UAVs, and perceptions of safety concerns. The projected noise levels for UAV operations in the corridor sectors with a minimum floor altitude of 1,200 feet AGL of 41 dB L_{dnmr} and of 33 dB L_{dnmr} for those with floor altitudes of 3,000 feet is below thresholds of concern for any land use. Operations of UAVs would not inhibit access to any roads, trails, recreational areas or other locations on the ground. Consequently, this proposal would have no effect on public ground access.	Same as Alternative A.	Under the No Action Alternative, no UAV corridors or operations would occur between various elements of SUA in the JPARC. No changes or additional impacts affecting land use, public access or recreation would occur.
Infrastructure & Transportation	No Effect		
Socioeconomics	The socioeconomic assessment includes all seven proposed UAV	Same as Alternative A.	Under the No Action Alternative, no UAV

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	corridors. UAV access could potentially affect general aviation, resulting in economic impacts to regional business and communities from delays or fuel costs associated with rerouting. Such impacts would depend on civil air traffic densities/peak periods and the individual areas and time frames in which the proposed UAV flight activities would occur. The FAA and Air Force would address any impacts and mitigation measures to be taken before implementation of any airspace proposals. The economic impacts of any commercial or other civil aviation aircraft being delayed or diverted to any extent around the proposed corridors when active cannot be quantified due to the many factors to be considered in estimating such impacts. Economic impacts to general aviation pilots would depend on routes of flight and decisions on whether to delay flight when the corridor is active versus flying through or avoiding the corridors.		corridors would be established. Therefore, no changes to current existing conditions of socioeconomic resources are anticipated.
Subsistence	The subsistence assessment includes all seven proposed UAV corridors. The narrow corridors of restricted airspace would be active for a maximum of 50 days per year. It is not expected that access to subsistence resources by aircraft would be impacted, and thus that harvest of subsistence resources would not be delayed to such a degree that the communities ranked as high in dependence on subsistence resources would be adversely impacted. Additionally, public access to the area beneath the restricted airspace corridors would not be restricted, and individuals would continue to participate in subsistence resources as they are currently practiced. Therefore, no significant impacts to subsistence resources as defined by ANILCA would be expected.	Same as Alternative A.	Under the No Action Alternative, no new restricted airspace or Certificate of Authorization airspace would be established. Subsistence activities would continue as they are currently practiced.
Environmental Justice	The environmental justice assessment includes all seven proposed UAV corridors. Public access to the area beneath the restricted airspace corridors would not be restricted. Based on a review of environmental consequences	Same as Alternative A.	No restricted airspace or Certificate of Authorization airspace would be established and conditions

Table ES–7. Summary of Impacts for Unmanned Aerial Vehicle Access *(Continued)*

Resource Area	Alternative A (Preferred Alternative)	Alternative B	No Action Alternative
	for other related resources, potentially significant impacts would be reduced through proposed mitigations and other management actions. No disproportionately high and adverse environmental or health effects on minority and low-income populations or children would occur.		and practices in the area would continue as they currently exist. There would be no additional disproportionately high and adverse environmental and health effects on minority and low-income populations or children.

MITIGATION MEASURES:

- **FAA's study (Airspace Management)**

  Pending the FAA's study of the preferred airspace proposal alternatives to determine specific impacts and mitigation measures to be taken to minimize any impacts on VFR and IFR air traffic, other existing mitigations would continue to be relevant in addressing potential impacts of the airspace proposals.

- **Sandhill crane surveys (Safety-Flight)**

  Conduct sandhill crane surveys during spring and fall migration periods.

- **Special use airspace safety (Safety-Flight)**

  Continue efforts to comply with the respective Service formal flight safety programs, outlined in directives/regulations with supplements, that dictate those aircrew responsibilities and practices aimed at operating all manned and unmanned aircraft safely in existing modified and new SUAs.

- **Subsistence use consultation (Subsistence)**

  Continue consultation efforts with subsistence parties to determine current subsistence use levels and areas on USAG-FWA lands as input into scheduling. Continue Tribal consultation efforts with subsistence users about hunting and fishing programs on USAG-FWA land. Continue to use a newsletter to provide information to subsistence users about existing and new military activities and the changes in access for subsistence users. Continue research and cooperative studies with Tribes to address possible effects of Army activities on subsistence resources both directly within USAG-FWA installation boundaries and those outlying resources that may also be affected by military activities on DTA-West, DTA-East, YTA, and TFTA.

Key: AAF=Army Airfield; AFB=Air Force Base; AGL=above ground level; ANCSA=Alaska Native Claims Settlement Act; ANILCA=Alaska National Interest Lands Conservation Act; ARTCC=Air Route Traffic Control Center; ATC=Air Traffic Control; BAX=Battle Area Complex; dB=decibel; FAA=Federal Aviation Administration; FL=flight level; HAP=hazardous air pollutant; IFR=Instrument Flight Rules; L_{dnmr}=onset rate–adjusted day-night average sound level; MSL=mean sea level; NCA=Northern Control Area; NHPA=National Historic Preservation Act; NM=nautical mile; NOTAM=Notice to Airmen; PSD=prevention of significant deterioration; RNAV=Area Navigation; SHPO=State Historic Preservation Officer; SUA=Special Use Airspace; SUAIS=Special Use Airspace Information Service; TRACON=Terminal Radar Approach Control; UAV=unmanned aerial vehicle; USAG-FWA=U.S. Army Garrison Fort Wainwright, Alaska; USARAK=U.S. Army Alaska; VFR=Visual Flight Rules; YTA=Yukon Training Area.

ES.4.6 Cumulative Impacts

The analysis of cumulative impacts considers the effects of the proposals under consideration in combination with other past, present, and reasonably foreseeable future actions taking place in the project area, regardless of what agency or entity undertakes these actions. This EIS analyzes cumulative impacts in Chapter 4.0. Specifically, Section 4.8 sets forth the additive or interactive effects of the 12 actions proposed in this EIS, in aggregate, considered together with the effects of other past, present, and reasonably foreseeable future actions in the greater JPARC region. For most resources no cumulative impacts were identified and there was no need for additional or more detailed study of potential impacts. Each of the JPARC programmatic proposals will require further study of cumulative impacts and disproportionately high and adverse environmental or health effects when definitive sites and operations are evaluated in tiered environmental studies. Similarly, other large-scale actions in the region will undergo separate evaluations and will include conclusions and mitigation measures based on further details of those actions, and in some cases, updated information about affected environments.

Resources that have the potential to create direct or inter-related cumulative impacts, or for which additional study or consultation would be needed to identify cumulative impacts, include: airspace management and use, noise, biological resources, land use, subsistence, cultural resources, socioeconomics and environmental justice. Anticipated potential cumulative impacts are summarized below:

Airspace Management and Use

Cumulative impacts on airspace management (Section 4.8.1) due to restrictions on civilian instrument flight rules (IFR) and visual flight rules (VFR) traffic may have cumulative effects on civilian access to airspace, and other inter-related impacts on human/social resources. Use of airspace for a variety of purposes, both ongoing and future, will require continued coordination between regional and military airspace managers and pilots to maximize access for all users.

Noise

Cumulative noise impacts (Section 4.8.2) would occur in areas where the twelve JPARC proposed actions overlap, but would not be expected to be significant and would not create disproportionately high and adverse environmental or health effects. The combined impact of implementing JPARC actions together would not cause a significant impact that is not identified for each of the individual proposals. The Fox 3 MOA expansion/new Paxon MOA combined with night joint training could cause an additional 1-decibel (dB) increase and would not result in noise levels beneath the Fox 3/Paxon airspace areas greater than 55 dB onset rate–adjusted day-night average sound level (L_{dnmr}) or 62 dB C-weighted day-night average sound level (CDNL). JPARC proposed actions that involve munitions use in combination would not result in noise levels exceeding 62 dB CDNL in areas not owned by DoD.

Actions that may or may not be taken based on the findings of USARAK Range and Training Land Program Development Plan are not yet ripe for NEPA analysis, and it is not possible at this time to determine the level of noise impacts associated with these potential actions or their cumulative impacts with JPARC actions. Similarly, if F-35 aircraft were to be bedded down at an installation in Alaska, noise impacts would be dependent on the number of aircraft and how those aircraft would operate. Future analysis would be needed to determine the location of any noise impacts outside of military land and any land uses or populations affected.

Biological Resources

Although biological resource impacts (Section 4.8.8) from JPARC definitive and programmatic projects affecting DTA may be less than significant on an individual basis given application of mitigation and established resource-protective best management practices (BMPs) and standard operating procedures (SOPs), collectively the direct and indirect impacts on biological resources would be substantial within portions of DTA and the site-specific impacts cumulatively significant. Within the wider region of JPARC proposals, the pathways of impacts on biological species tend not to overlap. For example, airspace actions resulting in changes to noise may affect some species during certain life cycle periods, but these effects are different and not cumulative with impacts caused directly by ground disturbance from actions such as the proposed Susitna Hydroelectric Dam project.

Land Use

For land use (Section 4.8.10), several actions would increase the use of military land and associated restricted airspace for both hazardous and non-hazardous training, particularly within DTA-West, DTA-East, YTA, and TFTA. Cumulatively these would result in less time available for non-military uses throughout the JPARC training areas from about 80 percent down to less than 50 percent annually. The Army publishes its training and area closures particularly during September to allow the public to make appropriate plans based on whether they will be able to access military lands. A coordinated and comprehensive public use scheduling plan serves to limit impacts on locally important land use and recreational opportunities on military lands. Such actions would reduce the potential for cumulative land use impacts.

With regard to land use impacts from ground-based activities, future proposals should evaluate any expansion of noise exposure greater than 62 dB CDNL and peak exposure above 115 dB outside of military land, particularly if they involve new types of munitions or increased expenditures.

Increasing population in the Fairbanks-Delta Junction area is expected to cause incremental changes in the region as human development and activities extend and concentrate in specific locations. Pressures from growth may over time diminish qualities of naturalness and quiet that are characteristic of the region currently and have indirect impacts on land use. Discrete proposals and actions are part of this trend; however, mitigations for these actions would generally apply to specific effects rather than as more widespread solutions and growth management controls.

Subsistence

No significant restrictions to subsistence resources are expected from the cumulative effects of the JPARC proposed action, other DoD actions, and non-DoD actions. Nevertheless, subsistence impacts (Section 4.8.13) related to IFR and VFR flight limitations on civilian aircraft traffic are projected for the Expanded Fox 3 MOA and New Paxon MOA proposal and the RLOD proposal. JPARC proposals that involve construction or use of the DTA, where Federal subsistence is permitted, have the potential to create a cumulative impact to subsistence resources. No significant restrictions to subsistence resources are expected from these cumulative actions given access to other subsistence resources in the vicinity of DTA.

Separate from the JPARC, the areas associated with military actions currently experience levels of military activity. Subsistence resources continue to be harvested in those areas. Congruent non-military actions in the area are not expected to directly interact with the JPARC actions in such a way as to restrict subsistence harvests or affect the distribution of subsistence resources. The underlying effects of growth may also have indirect effects on subsistence practices and uses of regional resources. As stated above

(for Land Use), the cumulative effect of JPARC and other actions can provide mitigations for specific areas of concern, but not the more complex aspects of growth.

Cultural Resources

For cultural resources (Section 4.8.9), although no cumulative impacts have been identified for the combined JPARC actions and other DoD or non-DoD actions, government-to-government consultation has already been initiated and will be ongoing to identify potential impacts and any mitigations needed to avoid, minimize, or reduce impacts to acceptable levels.

Socioeconomics

For socioeconomics (Section 4.8.12), no direct cumulative impacts on housing or infrastructure are expected, although changes in employment and income could indirectly affect housing demand or funding for infrastructure projects. The establishment of harvest strategies for groundfish fisheries in the GOA and other conservation measures and plans have the potential to interact with the JPARC Missile Live-Fire proposal with regard to commercial fishing impacts. Additional fishing restrictions in sensitive habitats in the GOA along with restrictions in access during military activities could result in cumulative impacts to commercial fisherman. The level of significance would depend on changes in overall expenditures and the value of the catch.

Environmental Justice

With regard to land use impacts from ground-based activities, future proposals should evaluate any expansion of noise exposure greater than 62 dB CDNL and peak exposure above 115 dB outside of military land, particularly if they involve new types of munitions or increased expenditures. If noise impacts to human/social resources were projected to occur, an environmental justice evaluation would be needed.

ES.4.7 Mitigation and Protective Measures

NEPA regulations require an EIS to include appropriate mitigation measures not already included in the Proposed Action or Alternatives (40 CFR 1502.12(f)). Each of the alternatives, including the proposed actions considered in this EIS, already include protective or mitigation measures intended to reduce environmental impacts. Measures, such as BMPs and SOPs, and existing mitigations that are currently in place for the operational areas are included in the JPARC EIS. Information in Appendix K, *Mitigations, Best Management Practices, Standard Operating Procedures*, describes these ongoing measures by listing existing mitigations applicable to military SUA associated with the JPARC proposals as well as the proposed mitigations under consideration to reduce the impacts of the actions described in the EIS. Both tables indicate for which proposals each measure applies

As part of its commitment to sustainable use of resources and environmental stewardship, the Army and Air Force incorporate measures that are protective of the environment into all of their activities. These include employment of BMPs, SOPs, adoption of conservation recommendations, and other protective measures that mitigate the impacts of military training activities on the environment. Some of these measures are generally designed to apply to certain geographic areas during certain times of year or for specific types of training. Conservation measures covering habitats and species occurring in the JPARC have been developed through various environmental analyses conducted by the Air Force, Navy and Army for airspace, land and sea ranges, and adjacent coastal waters. The resource impact assessments in Chapter 3.0 of the EIS are based on the continued implementation of these measures as a basis for future resource management. Existing conditions for each resource reflect these as ongoing management actions.

As part of its commitment to sustainable use of resources and environmental stewardship, the Army and Air Force have also developed new proposed mitigations to reduce expected or potentially significant impacts resulting from the proposals evaluated in the EIS. These new proposed mitigations are provided in Chapter 3.0, following the analysis for each resource and proposal. These are also listed in Appendix K, *Mitigations, Best Management Practices, Standard Operating Procedures*, Tables K-1 and K-2, and in Table ES–2 through Table ES–7.

ES.4.8 Other Required Considerations

Possible Conflicts with Objectives of Federal, State, and Local Plans, Policies, and Controls

Based on an evaluation with respect to consistency with statutory obligations, the JPARC EIS has sought input from various Federal, State and local agencies with management responsibilities in the affected region. Implementation of JPARC proposed actions will incorporate measures to address management concerns and planning priorities of these agencies to minimize conflicts with their plans, policies, or legal requirements. Appendix B, *Definition of the Resources and Regulatory Settings*, provides a summary of environmental compliance requirements that may apply.

Relationship between Short-term Uses and Long-term Productivity

The six definitive proposed actions and alternatives would result in both short- and long-term environmental effects. Overall, the six definitive proposals involve little physical development that would displace and reconfigure land from its current or planned use. As such, little change to long-term productivity is anticipated from implementing the definitive proposals.

JPARC proposals involving weapons firing and associated air operations (such as RLOD, BAX Restricted Airspace Addition, and R-2205 Expansion) mostly use existing targets and impact areas. Minor infrastructure upgrades associated with the RLOD, BAX Restricted Airspace Addition, and R-2205 Expansion proposals would occur in areas that currently support military use and have some existing modifications to support ongoing activities. These areas are mostly in a natural state and would not experience any appreciable long-term loss in productivity from very dispersed man-made structures. The intrinsic qualities of the land, use, and long-term productivity would not change. Controlled access to non-military land from the RLOD capability would impact access and near-term productivity of the affected non-military areas. Controlled access would not change any intrinsic qualities of the land and long-term productivity (to support wildlife and all existing uses). Two small proposed temporary target areas within existing training areas within DTA-West for the RLOD and a mortar range for the BAX are the exception and would incur long-term impacts, although they would not be significant.

For actions involving airspace changes and air operations only (Fox 3 MOA Expansion and Paxon MOA Addition, NJT, and UAV Access), short-term effects could include localized airspace disruptions and higher noise levels in some areas. For the JPARC, most aircraft-related impacts are short-term, temporary, and could stop without causing permanent changes. Noise effects are short-term and would not be expected to result in permanent or long-term changes in wildlife or habitat use. Charting new airspace is an aeronautical action and would not cause long-term change in underlying land use. Continued use of chaff and flares for training would not negatively affect the long-term quality of the land, air, or water.

The programmatic proposals involve the development of infrastructure on the ground or intensive ground training activities, such as the ISBs, Enhanced Access to Ground Maneuver Space, and access roads to Tanana Flats Training Area. These actions would use land that is mostly natural and undeveloped, and this could result in long-term change in the use and productivity of the affected land. New roads and

trails on military land may provide some long-term benefits for range management and public access for recreation, hunting, and subsistence resource harvesting. These actions will undergo further evaluation and review in future NEPA analysis.

Irreversible or Irretrievable Commitment of Resources

For the alternatives, including the proposed actions, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary. Any noise effects on underlying land uses are reversible with suspension of the noise-generating flight operations. However, implementation of the proposed actions and alternatives would require the use of nonrenewable resources such as fuels used by aircraft and ground-based vehicles. Total fuel consumption would increase and this nonrenewable resource would be irreversibly lost.

Military energy consumption under the No Action Alternative would be expected to be comparable to any of the action alternatives, as several actions are designed to conserve fuel allocated to units for training by reducing the volume of fuel expended in transit. New capabilities to support weapons training with longer firing distances will not in itself stimulate additional manufacturing of these products. The JPARC proposals involving changes in airspace and air operations (i.e., Fox 3 MOA Expansion and new Paxon MOA, NJT, and UAV Access) would not consume minerals or additional energy. Several land-based radio and radar facilities will, however, be required by the Fox 3 MOA expansion/new Paxon MOA proposal, and they will use fuel and resources, although not to a degree considered significant.

No irreversible or irretrievable effects are expected for cultural resources or other natural resources, including land and water. There is the potential to increase the consumption of jet fuel by commercial carriers if changes in SUA interfere with commercial traffic. Considering those factors, the proposals would not significantly decrease the availability of minerals or petroleum resources or result in a substantial irreversible or irretrievable commitment of resources. Proposals involving weapons releases and new targets in existing impact areas may add slightly to the accumulation of unexploded ordnance (UXO), some of which may not be retrievable due to the character of the landscape. These actions would for the most part use existing impact areas and would not expand areas that would be irreversibly committed to supporting weapons training.

JPARC proposals involving weapons releases, temporary impact areas, and targets in existing impact areas may add slightly to the accumulation of UXO, some of which may not be retrievable due to the character of the landscape. With the exception of about 2 acres in north DTA-West, these actions would use existing impact areas and would not expand areas that would be irreversibly committed to supporting weapons training**.**

Physical development and ground disturbance is spatially limited for the six definitive proposals, so the potential for irreversible changes to the surface (affecting soils, vegetation, hydrology, and cultural sites) and subsurface resources, such as cultural sites, underground infrastructure, or minerals is minimal. The use of land as a surface danger zone to support weapons firing is fully reversible with the cessation of the activity and imposes no direct loss of productivity.

Projects involving a minor amount of development for infrastructure for the definitive proposals would use energy (fuels, electricity) and materials for components of new facilities. These would be consumed and not retrievable or reversible. Very small amounts would be needed to implement the definitive proposals. Clearing small areas for new target areas or firing ranges would remove native vegetation and/or wildlife habitat and have the potential to disrupt bird nesting activities. These minor modifications would occur primarily within training areas already used for similar purposes; this loss of resources

would not be expected to adversely affect native species and is very limited in extent. These areas could be revegetated when no longer needed as target areas; therefore, effects may be assumed to be reversible.

For the programmatic proposals, construction for new staging bases would consume additional energy to heat and maintain facilities. Construction of facilities, roads, and trails would disturb vegetation and habitats and could cause permanent loss of some fragile or sensitive habitats (such as wetlands or riparian areas). Construction of the ISBs would likely convert natural land into developed land. The value of these areas to support wildlife may be impacted in the long term, although restorative efforts could retrieve some of their natural functional quality within the developed area. These issues would undergo further evaluation and mitigations before decisions are made to implement them.

Secondary impacts to natural resources could occur from air operations as a result of an unlikely aircraft accident and/or fire. Fire can have short-term impacts to agricultural resources, wildlife, and habitat. Fire effects are not irreversible in a natural environment, and the increased risk of fire hazard due to JPARC operations is low. Secondary effects of aircraft overflight on wildlife behavioral activities have been known to occur in some circumstances, causing irreversible shifts in wildlife patterns. Coordination with USFWS for the JPARC proposals is ongoing and will identify appropriate permits, or permit extensions, and measures to avoid, reduce, and mitigate for potential effects to wildlife.

Energy Requirements and Conservation Potential

Minimal additional energy use would be required for the definitive proposals. Energy requirements would be subject to established energy conservation practices. The use of energy sources has been minimized wherever possible without compromising safety or training activities. No additional conservation measures related to direct energy consumption by the proposed activities are identified.

Natural or Depletable Resource Requirements and Conservation Potential

Resources that would be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels. The amount and rate of consumption of these resources would not appreciably change from the No Action alternative under the six definitive proposals, and would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources. The proposal to expand the Fox 3 MOA and create the Paxon MOA is intended in part to maximize effective fuel allocations to training units, providing more efficient use of resources.

Pollution prevention is an important component of existing management practices and mitigation of adverse impacts. These existing pollution prevention considerations are included for all proposals (Appendix K, *Mitigations, Best Management Practices, Standard Operating Procedures*, has information on existing measures and mitigations). Sustainable range management practices are in place that protect and conserve natural and cultural resources and preserve access to training areas for current and future training requirements while addressing potential encroachments that threaten to impact training area capabilities.