DRAFT
Environmental Assessment and Finding of No Significant Impact

Range Upgrade/Expansion Projects
Fort Wainwright, Alaska

March 2003

DRAFT – Do Not Cite

ENVIRONMENTAL ASSESSMENT
for
Range Upgrade/Expansion Projects
Fort Wainwright, Alaska

Prepared By:

Gene Stout
Gene Stout and Associates
4307 Crane Court
Loveland, Colorado 80537

Reviewed By:

Environmental Department
Public Works
U.S. Army Garrison Alaska

Range and Training Division
Directorate of Plans, Training, Security, and Mobilization
U.S. Army Garrison Alaska

Approved By:

_____ _____

Fredrick J. Lehman Date
Colonel, U.S. Army
Commander
U.S. Army Garrison Alaska

ENVIRONMENTAL ASSESSMENT
for
Range Upgrade/Expansion Projects
Fort Wainwright, Alaska

Table of Contents

1.0 PURPOSE OF AND NEED FOR ACTION 1
1.1 Introduction 1
1.2 Purpose and Need for Action 1
1.3 Scope of Environmental Analysis 4
1.3.1 Scoping and Issues Analysis 4
1.3.2 Issues Not Addressed or Not Considered to be Potentially Significant 4
1.4 Decisions to Be Made 5
2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES 6
2.1 Location and General Conditions 6
2.2 Description of Proposed Action – Range Construction/Upgrades 6
2.2.1 Range Projects Proposed for the Main Post 6
2.2.2 Range Projects Proposed for Yukon Training Area 12
2.3 Alternatives 14
2.3.1 Alternative 1 – No Action 14
2.3.2 Alternative 2 – Alternative Sites 15
2.3.3 Alternative 3 – Alternative Installations 15
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 16
3.1 Soils 16
3.1.1 Existing Conditions 16
3.1.2 Environmental Consequences 16
3.2 Water Resources 17
3.2.1 Existing Conditions 17
3.2.1.1 Surface Water 17
3.2.1.2 Groundwater 18
3.2.2 Environmental Consequences 19
3.3 Noise 20
3.3.1 Existing Conditions 21
3.3.2 Environmental Consequences 21
3.4 Air Quality 25
3.4.1 Existing Conditions 25
3.4.2 Environmental Consequences 26
3.5 Floral Resources 26
3.5.1 Existing Conditions 26
3.5.1.1 Floristics Inventory 27
3.5.1.2 Listed and/or Rare Plants 27
3.5.1.3 Wetlands 28
3.5.1.4 Forest Resources 28
3.5.1.5 Fire Management Areas 29
3.5.2 Environmental Consequences 30
Totals 31

3.6 Faunal Resources 36
3.6.1 Existing Conditions 37
3.6.1.1 Mammals 37
3.6.1.2 Birds 37
3.6.1.3 Fish 37
3.6.1.4 Reptiles and Amphibians 38
3.6.1.5 Special Status Fauna 38
3.6.2 Environmental Consequences 38
3.7 Floodplains 39
3.7.1 Existing Conditions 39
3.7.2 Environmental Consequences 39
3.8 Land Use 39
3.8.1 Existing Conditions 39
3.8.1.1 Land Use and the Military Mission 39
3.8.1.2 Surrounding Land Use 40
3.8.2 Environmental Consequences 41
3.9 Cultural Resources 42
3.9.1 Existing Conditions 45
3.9.2 Environmental Consequences 45
3.10 Hazardous Waste/Materials 46
3.10.1 Existing Conditions 46
3.10.2 Environmental Consequences 46
3.11 Outdoor Recreation 46
3.11.1 Existing Conditions 46
3.11.2 Environmental Consequences 47
3.12 Socio-economic Conditions 47
3.12.1 Existing Conditions 47
3.12.2 Environmental Consequences 47
3.13 Visual Resources/Aesthetics 48
3.13.1 Existing Conditions 48
3.13.2 Environmental Consequences 48
3.14 Cumulative Impacts 49
3.15 Past, Present, and Reasonably Foreseeable Future Actions Considered on a Cumulative Basis 49
3.15.1 Range Development 49
3.15.2 Military Mission Evolution 49
4. SUMMARY OF EFFECTS AND CONCLUSIONS 51
4.1 Unavoidable Adverse Effects Should the Proposed Action Be Implemented 51
4.2 Irreversible and Irretrievable Commitments of Resources 52
4.3 Conclusions 52
5. PERSONS CONTACTED – USARAK AND OTHER ARMY 53
6. LIST OF AGENCIES AND EXTERNAL PERSONS CONTACTED 53
7. REFERENCES 54
8. ENVIRONMENTAL ASSESSMENT PREPARERS 57
9. ACRONYMS 57
APPENDIX A. Standard Descriptions of MOUT Facilities Proposed for Main Post 58
APPENDIX B. Standard Description of Ranges Proposed for Yukon Training Area 61
APPENDIX C. Section 7, Endangered Species Act Exemption 65
APPENDIX D. Section 106, National Historic Preservation Act Consultation 66

List of Figures

Figure 2.1a. Location of Fort Wainwright, Alaska 7
Figure 2.1b. Location of Proposed Range Projects on Main Post, Fort Wainwright, Alaska 8
Figure 2.1c. Location and Hydrology of Proposed Range Projects in Yukon Training Area, Fort Wainwright, Alaska 9
Figure 3.3.1a Existing Noise Zones at Proposed Project Sites at Main Post 22
Figure 3.3.1b Existing and Projected Noise Zones at Proposed Project Sites at Yukon Training Area 23
Figure 3.5.2a. Vegetation at Proposed Project Sites on Yukon Training Area 33
Figure 3.5.2b. Wetlands at Proposed Project Sites on Main Post 34
Figure 3.5.2c. Wetlands at Proposed Project Sites on Yukon Training Area 35

List of Tables

Table 3.3.2a. Small Arms Noise Levels 23
Table 3.3.2b. Small Arms Noise Impacts 24
Table 3.3.2c. Noise Complaint Potential 25
Table 3.3.2d. Noise Levels Generated by 105 mm Rounds 26
Table 3.5.1.3. Rare Plant Species Occurring on Fort Wainwright. 27
Table 3.5.2a. Vegetation Potentially Affected By Proposed Projects on Yukon Training Area 31
Table 4.1. Summary of Potential Environmental Consequences 51

ENVIRONMENTAL ASSESSMENT
for
Range Upgrade/Expansion Projects
Fort Wainwright, Alaska

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

U.S. Army Alaska (USARAK) is proposing to upgrade existing ranges and related facilities and construct new ranges at Fort Wainwright, Alaska to maintain its capability to conduct its military mission to meet evolving Army training standards. This section presents the purpose and need for the Proposed Action; defines the scope of the environmental analysis and issues to be considered; identifies decisions to be made; and identifies other relevant documents and actions.

1.2 Purpose and Need for Action

The purpose of the Proposed Action is to construct facilities that meet requirements for implementation of the USARAK military mission at Fort Wainwright. All proposed projects would support implementation of a Stryker Brigade Combat Team within USARAK (an ongoing, separate National Environmental Protection Act (NEPA) documentation), but all are also mission-essential projects for the existing force, the 172nd Infantry Brigade (Separate), as certified by U.S. Army Pacific.

Failure to upgrade or construct these facilities would result in a failure of USARAK and other Alaska military units to obtain cost-effective training required to support their critical combat roles. This would affect USARAK units' military readiness and availability for deployment to meet threats to U.S. security.

Ranges Proposed for Main Post

Sniper Field Fire Range

USARAK does not have a venue to support sniper field fire training or advanced rifle marksmanship training in Alaska. This portion of the USARAK training mission is not being adequately supported; training currently uses machine gun and other ranges, which are not designed to accommodate some important training objectives, such as stalking and concealment. The USARAK *Range and Training Land Program Development Plan* (Nakata Planning Group, LLC 2001) identified the lack of a Sniper Field Fire Range as the most serious, long-term training issue that USARAK must address.

Modified Military Operations in Urban Terrain (MOUT)

USARAK does not have adequate training facilities at Fort Wainwright for troops to attain and maintain individual proficiency required in urban operations and in infantry tactics. Such training is particularly needed to meet changing worldwide military requirements for smaller unit operations in urban environments. Proficiency in such tactics can only be achieved through repetitive realistic training under simulated combat conditions. The need for such training is not being met.

Modified Record Fire Range

The basic small arms qualification range has deteriorated to the point where several lanes are non-operational. As a result, the range does not meet capacity requirements of troops stationed at Fort Wainwright. Many units use another range, which does not provide troops with a realistic qualification scenario.

Tanana River Observation Towers

The Fort Wainwright Range Complex creates surface danger zones for small arms that extend over the Chena River Flood Control Dike and the Tanana River. The Tanana River has been classified as a navigable waterway by the Corps of Engineers. In accordance with Army Regulation 385-63, a notice of the danger zone restricted area is published in the Code of Federal Regulation (33 CFR 204), which is required to fire across a navigable waterway. User units are currently required to post guards on the east and west ends of the range complex both on the Tanana River and on the Chena Flood Control Dike to minimize the hazard to waterway. These locations provide poor observation and control of both avenues of approach. Installation of two 75-foot observation towers (including lights and flagging) with associated parking pads and road access would meet above requirements, reduce the support requirement, and present a more easily visible indicator that the ranges are active.

Small Arms Borrow Pit Expansion

USARAK proposes to expand a dormant borrow pit located in the Small Arms Complex. The expansion of this pit is necessary to support ongoing and projected range improvement projects located near the borrow pit. Use of this site would provide a cost savings benefit to each of the projects since it will eliminate the need to purchase and transport material from off-site.

Machine Gun 10/50 Zero Range

The Fort Wainwright Multipurpose Machine Gun Range does not support unit training requirements in accordance with TC 25-8. There is no capability to support the night fire requirement for the .50 caliber machine gun. Also, the 10-meter machine gun zero pad can only support six firing positions, instead of the required 20. Both limitations severely affect the training capability of units to standard. Expansion of the current pad would meet both training requirements.

Hand Grenade Qualification Course

Fort Wainwright does not have a standard Hand Grenade Qualification Course. The current course was done as a troop construction project and has fallen into disrepair. In addition, the Hand Grande Range (a different range) has been recently relocated. The current location of the Hand Grenade Qualification Course does not facilitate unit training. Hand grenade qualification is required annually (USARAK Regulation 350-1) for all soldiers assigned to USARAK. Hand grenade qualification is currently conducted on non-standard, temporary ranges using training hand grenades. This range would provide quality training on a standard qualification range and would be located in conjunction with the new Hand Grenade Range to facilitate unit training.

Reconfigure Target Array on MK-19 Range

The target array on the existing MK-19 Range does not meet the training standard in accordance with FM 23-27 and TC 25-8. Current targets are not sufficient in number or proper locations. Targets need to be configured to support routine maintenance and training to standard. This would

include refurbishing the existing road network and adding trails to allow maintenance personnel access to the targets. This would allow all four firing points to be used simultaneously.

Co-Locate Military Police Qualification Range with Combat Pistol Range
Fort Wainwright's Combat Pistol and Military Police Qualification Course are two separate ranges located on the Range Complex. According to TC 25-8, these range are to be co-located. Moving the Military Police Qualification Range adjacent to the Combat Pistol Range would eliminate the need to build range support facilities on the Military Police Qualification Range. The current location of the Military Police Qualification Range would be restored to its natural condition.

AT-4 Pad Expansion
The configuration of the AT-4 Range does not allow for the clearing of all dud-producing ammunition. The current pad is 450 x 100 meters and allows some rounds to skip into an overgrown area down range and adjacent to the existing pad. AR 385-63 states that dud-producing rounds must be accounted for, and AR 210-21 stipulates that all dud-producing rounds must be cleared. This project would extend the pad to 700 x 150 meters and allow for the complete clearing of all duded rounds.

Consolidated Range Maintenance Facility
Range maintenance facilities are inadequate to handle the projected maintenance load required to support new ranges being built at Fort Wainwright. These new ranges would more then double the maintenance throughput requirement. Current facilities are at their limit for capacity. The consolidated facility would be designed to handle the additional capacity and provide a higher quality of customer service.

All Season Local Firing Points
There are three artillery firing points located in the Small Arms Complex. These firing points provide artillery units the opportunity to train basic gunnery skills without deploying to Yukon Training Area (over 20 miles away). This project would harden these existing positions, so they could be used year-round. The project would reduce the impact of operation on the environment.

Projects Proposed for Yukon Training Area

Multi-Purpose Training Range (MPTR)
There is a requirement to qualify individual vehicle-mounted weapons crews. There is no range at Fort Wainwright that supports mounted, crew-served weapons qualification with state of the art targetry and feedback capabilities, feedback that provides unbiased analyses of unit readiness for both live-fire qualification and maneuver exercises.

Infantry Squad Battle Course (ISBC)
USARAK does not have an automated range that supports the requirement to train squads in realistic tactical engagements, which meets the standards of Training Circular (TC) 25-8. This need is currently met with limited portable targetry that does not fully train units to standard.

Infantry Platoon Battle Course (IPBC)
Unit training (collective) requirements are not being achieved at Fort Wainwright for USARAK troops. USARAK does not provide tenant and visiting units with standardized ranges on which to conduct platoon

live firing. Units stationed in Alaska have no experience on large, complex ranges. The current system for training uses portable targets and requires excessive personnel time (for both Range Control and training units) to establish unit training scenarios and emplace the associated equipment. Training requirements are not being met. The proposed IPBC would provide realistic, live-fire training opportunities for platoon-sized units.

Light Demolition Range
USARAK does not have a standard demolition range that conforms to TC 25-8. This training mission is not adequately supported and is being conducted on a sub-standard range. This range is currently located at Firing Point 9 in the Yukon Training area, which is too small to meet all training standards for demolitions. By using an artillery firing point, training objectives of both artillery and demolitions are limited. Additionally, safety features and charge weight limitations make the current situation unsustainable.

Upgrade of Manchu Lake Road
Most troops using Yukon Training Area must cross Eielson Air Force Base, including moving through residential areas, to reach training areas. Manchu Lake Road, if upgraded, would provide all-weather access to many of these training areas without crossing the urbanized portion of Eielson Air Force Base.

1.3 Scope of Environmental Analysis

This environmental assessment involves range facility projects within the Main Post at Fort Wainwright and range projects and a road upgrade project (to access ranges) at Yukon Training Area. The environmental assessment considers direct, indirect, and cumulative effects of the Proposed Action and alternatives, including the No Action Alternative.

It was prepared in accordance with the National Environmental Policy Act of 1969 (42 USC 4321 *et seq*.), Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), and Army Regulation 200-2, *Effects of Army Actions* (32 CFR Part 651). A specific requirement for this environmental assessment is an appraisal of impacts of the proposed range upgrade/expansion projects, including a determination of whether or not a Finding of No Significant Impact is appropriate or whether a Notice of Intent to prepare an Environmental Impact Statement is required.

1.3.1 Scoping and Issues Analysis

NEPA defines scoping as "*an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to the proposed action*" (40 CFR 1501.7). These issues are used to develop alternative actions, including mitigation measures, and evaluate environmental consequences of proposed actions. A USARAK interdisciplinary team, primarily personnel identified in Section 5, *Persons Contacted-USARAK*, has discussed issues and concerns regarding these projects. Internal and external review of this environmental assessment, including making it available to the general public, will complete scoping.

1.3.2 Issues Not Addressed or Not Considered to be Potentially Significant

Initial scoping resulted in the elimination of some potential issues. Brief discussions of the rationale for these decisions are below.

Environmental Justice
Executive Order No. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 Federal Regulation No. 32), issued in February 1994, provides that "*each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations*". The Proposed

Action and its alternatives would be confined to Fort Wainwright, and construction acquisition actions would comply with federal acquisition regulations. Neither the Proposed Action nor its alternatives would have significant or disproportionate adverse effects on minority or low-income populations.

Environmental Health and Safety Risks for Children
Executive Order No. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, (62 Federal Regulation No. 78) was issued in April 1997. This Executive Order directs each federal agency to "*ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks*". Sensitive areas for exposure to children at Fort Wainwright and Eielson Air Force Base are schools and family housing areas. Environmental health and safety risks are attributable to products that a child might come in contact with or ingest as well as safety around construction areas and areas of buildings that pose safety hazards. Proposed projects are within the Small Arms Complex of Fort Wainwright or at Yukon Training Area, both of which are established for military training. Construction and operation of these projects would comply with federal safety standards. Neither the Proposed Action nor its alternatives would have significant or disproportionate adverse effects on children or pose health or safety risks.

Geology
Neither the Proposed Action nor its alternatives would have any measurable effects on geologic resources.

1.4 Decisions to Be Made

The decision to be made is whether to implement the Proposed Action, modify the Proposed Action, or select an alternative action, including the No Action Alternative. The Commander, USARAK will make this decision.

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action (construction of range facility upgrade/expansion projects), alternatives considered in this assessment, and alternatives that were eliminated from detailed consideration.

2.1 Location and General Conditions

Fort Wainwright is located in central Alaska (Figure 2.1a), north of the Alaska Range in the Tanana River Valley. The Post lies 120 miles south of the Arctic Circle near the cities of Fairbanks and North Pole in the Fairbanks North Star Borough. The installation consists of the Main Post, Tanana Flats Training Area, Yukon Training Area, and Dyke Range (Natural Resources Branch 2002).

The Sniper Field Fire Range Project, MOUT and Range Upgrade Project, Modified Record Fire Range, Tanana River observation towers, Small Arms Complex borrow pit, Machine Gun 10/50 Zero Range, Hand Grenade Qualification Course, reconfigured target array on MK 19 Range, co-location of Military Police Qualification and Combat Pistol Qualification Courses, AT-4 Range pad expansion, Consolidated Range Maintenance Facility, and all-season local firing points would be located within Main Post (13,756 acres), just south of Richardson Highway in an area used for small arms ranges with an impact area across the Tanana River (Figure 2.1b). The topography of these project sites is the wide Tanana River floodplain.

The MPTR, IPBC, ISBC, Light Demolition Range, and Manchu Lake Road upgrade would be located in Yukon Training Area (257,276 acres) to the east of Eielson Air Force Base, beginning near Winter Camp (Figure 2.1c). The topography of this area is gentle to relatively steep slopes.

Fort Wainwright has the northern continental climate of the Alaskan interior, characterized by short, moderate summers; long, cold winters; and little precipitation or humidity. Average monthly temperatures in Fairbanks range from –11.5° Fahrenheit (F) in January to 61.5°F in July, with an average annual temperature of 26.3°F. The record low temperature is –66°F, and the record high is 98°F. Average annual precipitation is 10.4 inches, most of which falls as rain during summer and early fall. Average annual snowfall is 67 inches, with a record high of 168 inches during the winter of 1970-71 (Natural Resources Branch 2002).

2.2 Description of Proposed Action – Range Construction/Upgrades

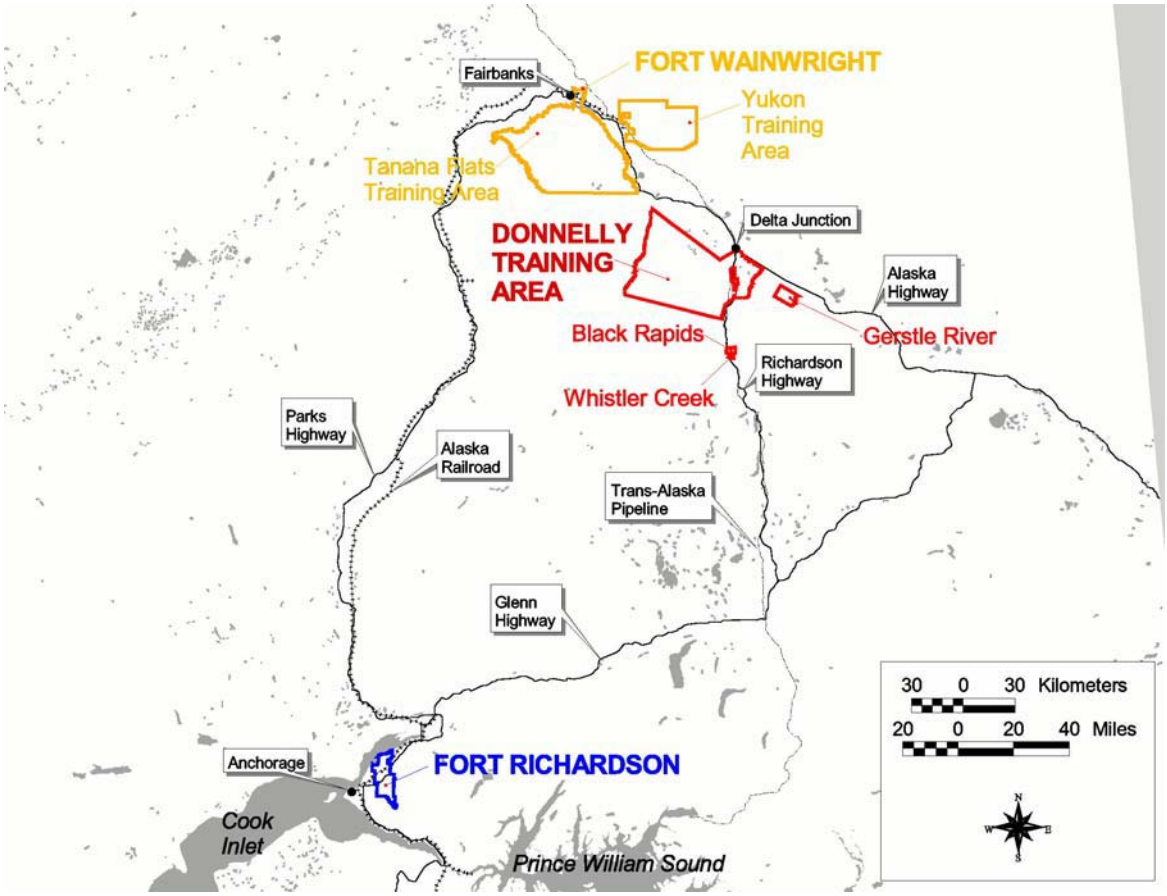
2.2.1 Range Projects Proposed for the Main Post

All areas proposed for these projects are within the Small Arms Complex of the Main Post (Figure 2.1b). The Small Arms Complex has been regularly burned and/or soil disturbed due to construction and operation of existing small arms ranges. Weapons fired on new or upgraded ranges would use small arms ammunition (*e.g.*, 9 mm tracer (AT4 subcaliber), 5.56 mm (M-16), 7.62 mm (M-60 machine gun), .50 caliber machine gun (M2), 40 mm training practice round - orange smoke (M-203)) using non-dudding ammunition. Small explosive charges (up to five pounds of C4) would be used at the Breach Facility.

Sniper Field Fire Range (Project No. 53387)

USARAK proposes to construct a standard Sniper Field Fire range for day/night sniper training as well as advanced rifle marksmanship training for selected personnel. The range would be equipped with hard-wired, electronically actuated Remote Target Systems. Supporting facilities would include construction/ upgrade of a range access road, site clearing and grading, electrical and communications infrastructure,

Figure 2.1a. Location of Fort Wainwright, Alaska

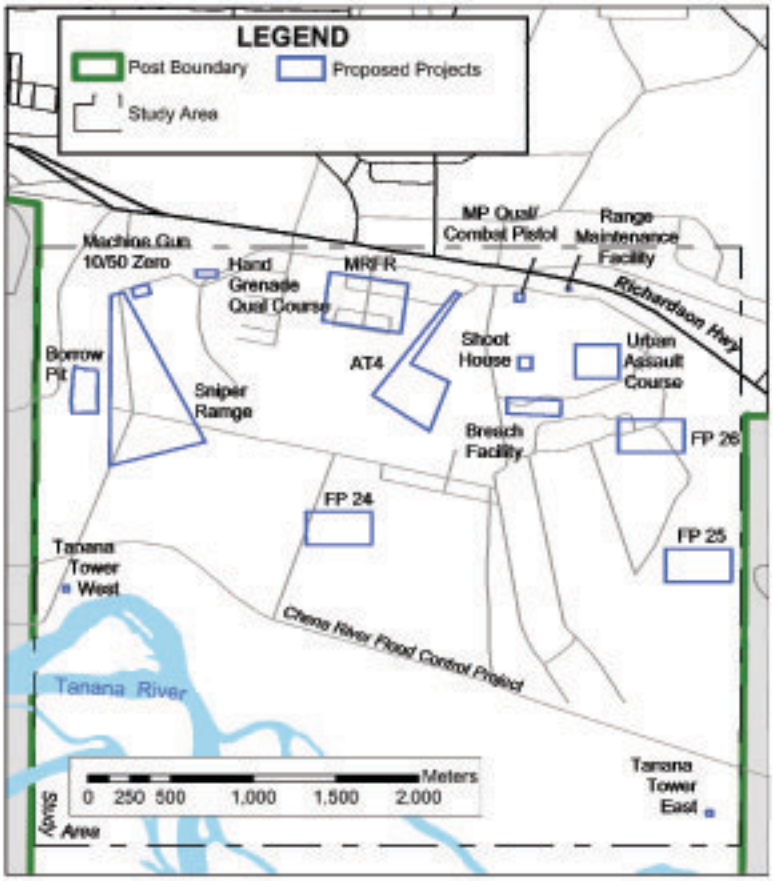


ammo breakdown facility, Arctic latrines, and a control tower. The Sniper Field Fire Range (84 acres) is proposed for siting on an existing small arms (machine gun) range. The project would require minimal clearing. It is scheduled for completion by October 2003.

Modified Military Operations in Urban Terrain (MOUT) (Project No. 55847)
USARAK proposes to construct a MOUT and Range Upgrade Facility (208 acres) to provide standard ranges to train USARAK soldiers in infantry squad tactics and basic urban operations using automated targetry, enabling trainers to vary scenarios presented to trainees. The facility would include a Breach Facility, an Urban Assault Course, and a Shoot House. An After-Action Review Facility would be constructed to allow the control, monitoring, and reviewing of simulations and training operations.

Appendix A includes a schematic of a standard Shoot House, Breach Facility, and Urban Assault Course and briefly describes their use, characteristics, and additional information. Ranges would share common support facilities. The site is relatively flat. Supporting facilities would include electric service; short, crushed aggregate, access roads and parking areas; an ammo breakdown facility; a warm-up building; self-contained dry-flush, Arctic latrines; information systems; control buildings, a target storage and maintenance facility, and bivouac site. Facilities are scheduled for completion by April 2005.

Figure 2.1b. Location of Proposed Range Projects on Main Post, Fort Wainwright, Alaska



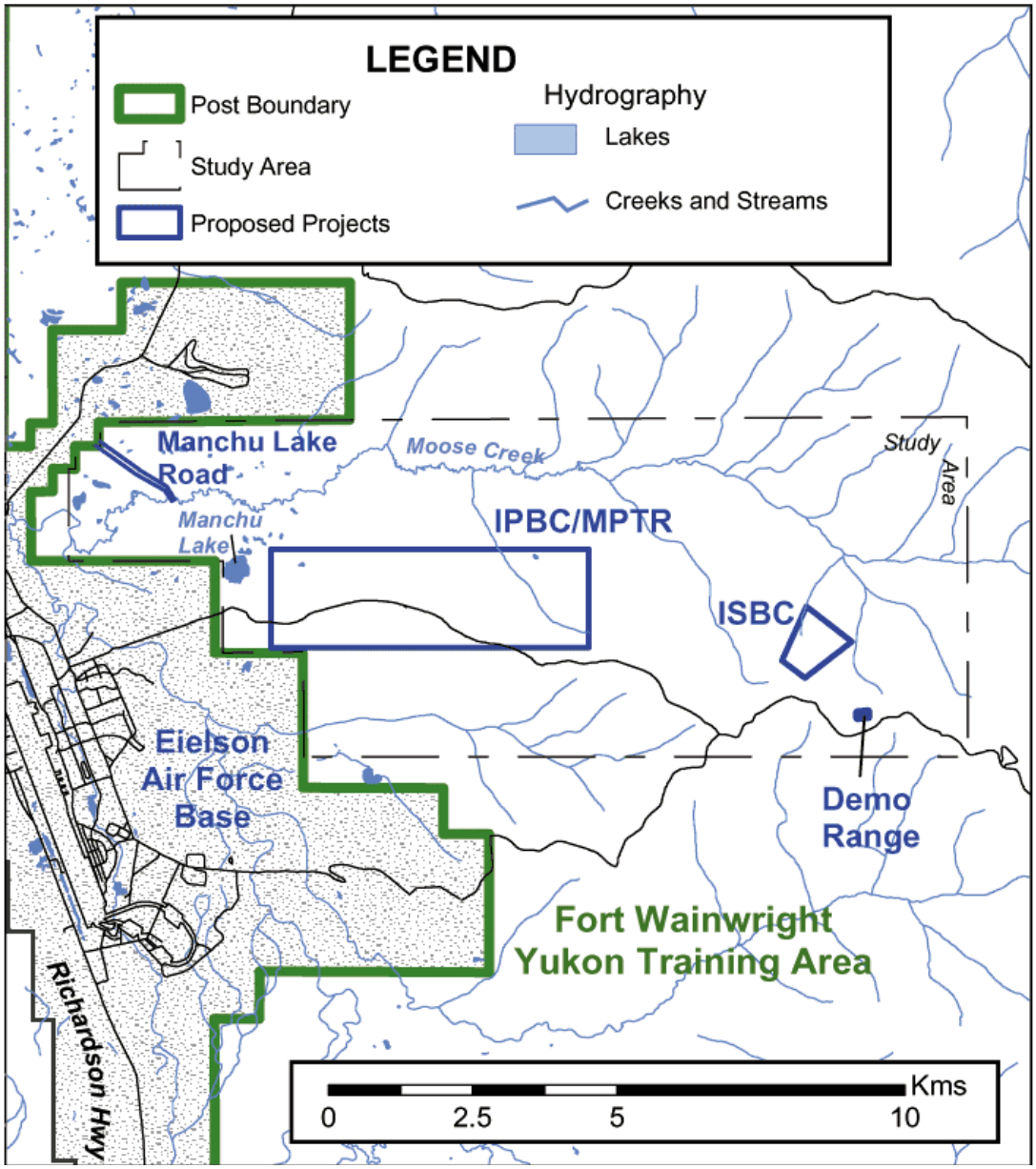
Modified Record Fire Range

USARAK proposes to repair the existing range by replacing the wiring, which has deteriorated to a point of being non-functional. This project would also include the improvement of access to target berms to support range maintenance. No new target positions would be created. Current target berms would be improved to support sustained operations.

Tanana River Towers

USARAK proposes to construct two 75-foot steel observation towers with associated pads, parking areas, and road network. These towers would be located on the eastern and western boundaries of the Fort Wainwright Small Arms Complex between the Chena River Flood Control Dike and the Tanana River. Pads for the tower will be of a size to support its foundation. The east tower road network will begin at the Chena River Flood Control Dike and continue to the tower, a distance of approximately 800 meters. The west tower road would be constructed over existing trails. Both towers would have parking pads adjacent to them. Towers are proposed to be located in the vicinities of VG 684857 and VG 725846 (NAD 27). Any issues regarding aviation safety concerns and potential coordination with the Federal Aviation Administration would be resolved prior to construction. The project is projected to be completed by the end of 2004. It would have the following direct impacts on the site:

Figure 2.1c. Location and Hydrology of Proposed Range Projects in Yukon Training Area, Fort Wainwright, Alaska



East Tower

Tower and parking pad: 30 x 30 meters (0.223 acres)
New access road: 300 x 4 meters (0.2964 acres)
Existing access road: No additional fill (no increase in existing footprint)

West Tower

Tower and parking pad: 30 x 30 meters (0.223 acres)
Access road: No additional fill (no increase in existing footprint)

Total impacted acreage: 0.7 acres

Small Arms Complex Borrow Pit
USARAK proposes to expand a dormant borrow pit located in the Small Arms Complex, adjacent to the Multi-purpose Machine Gun Range. The intent is to excavate the existing and expand this pit about 10 acres to the south. This pit would be expanded one acre at a time and only as required to meet needs of projects proposed for the complex. Excavation would be done by standard dragline operations using a 100-foot boom to maximize depth of excavation and minimize overall surface disruption. The proposed location is vicinity VG 686875 (NAD 27). The project would have the following direct impacts on the site:

Acreage impacted: Using 1,500 cubic yards of gravel per acre-foot return and bailing to a depth of 50 feet, (allowance calculated for bailing loss) one acre would yield approximately 75,000 cubic yards of usable gravel. Rough calculations for all the range maintenance and expansion projects would require about 750,000 cubic yards of gravel.
Total impacted acreage: 10 acres
Total gravel removed: about 750,000 cubic yards

Machine Gun 10/50 Zero Range
USARAK proposes to expand the 10-meter zero pad on the MultiPurpose Machine Gun Range from 10 meters X 25 meters to 60 meters X 100 meters. This expansion would provide units a means to meet night fire requirements of the .50 caliber machine gun, which requires targets at 50 meters. It would also increase the capability to zero machineguns from six firing points to 20, which would meet the requirement of TC 25-8. This site minimizes impacts on wetlands since it incorporates the original location. The proposed location for this project is WG 687877 (NAD 27). The project would have the following direct impacts on the site:

Pad A: 33 x 60 meters (0.489 acres)
Pad B: 15 x 150 meters (0.555 acres)
Total impacted acreage: 1.5 acres

Hand Grenade Qualification Course
USARAK proposes to construct a Hand Grenade Qualification Range to support hand grenade training. The range would be 125 meters wide by 40 meters deep. It would consist of six lanes, 3 meters wide and 35 meters deep. Targets would include log walls, foxholes, trenches, windows, bunkers, and truck and E-type silhouettes. The range would have a parking area, ammunition breakdown/issue area, and an administrative area. This project would require the clearing about one acre. The site was selected based on proximity to the Hand Grenade Live Fire Range to facilitate training requirements by eliminating the need for soldiers to walk over ½ mile between training sites. The proposed location for this range is vicinity WG 694878 (NAD 27). It is scheduled for completion during summer 2003. The project would have the following direct impacts on the site:

Pad: 125 x 40 meters (1.23 acres)
Total impacted acreage: 1.3 acres

Reconfigure Target Array on MK-19 Range.

USARAK proposes to upgrade the target array on the MK-19 Range to meet TC 25-8 standards. The current configuration does not allow access to targets to perform routine maintenance. The proposed redesign would incorporate the current target array and add additional targets to bring the range to standard. It would require development and hardening of a trail network to support maintenance. Efforts would be made to maximize the current road and trail network for access for target maintenance. The use of the existing range area minimizes impacts on wetlands. The proposed location for this project is vicinity WG 717869 (NAD 27). The project would be completed by the end of 2005 and would have the following direct impacts on the site:

Center maintenance lane: 1200 x 4 meters (1.185 acres)
400-meter target lane: 300 x 19 (1.4073 acres)
600-meter target lane: 450 x 24 (2.6767 acres)
800-meter target lane: 550 x 19 (2.5932 acres)
1100-meter target lane: 700 x 12 (2.42 acres)
1500-meter target lane: 800 x 14 (2.7785 acres)
Total impacted acreage: 14 acres

Note: Actual estimated acreage = 10.875 acres because the exact elevation of target berms cannot be determined until the range has been surveyed. The finished acreage will probably increase by at least 1/3 with increased target berm heights.

Co-Locate Military Police Qualification Range with Combat Pistol Range
USARAK proposes to move the current Military Police Qualification Course adjacent to the Combat Pistol Range. A gravel pad 50 X 50 meters (0.5 acres) would be constructed to the east of the Combat Pistol Range to meet requirements of TC 25-8. Gravel from the existing Military Police Qualification Range would be used to construct the new pad. The project would have the following direct impacts on the site:

Pad: 50 X 50 meters (0.6 acres)
Total impacted acreage: 0.6 acres

AT-4 Range Pad Expansion
USARAK proposes to expand the AT-4 Range pad by approximately 300 meters in length and 50 meters in width from its current size. This would involve expanding the pad into adjacent wetlands. Controlled burning and clearing by explosive ordinance personnel would occur prior to construction. Approximately four acres of wetlands would be filled (requiring a permit from the U.S. Army Corps of Engineers). The project would have the following direct impacts on the site:

Pad: 300 x 50 meters (3.705 acres)
Total impacted acreage: 3.705 acres

Consolidated Range Maintenance Facility
The Consolidated Range Maintenance Facility would replace facilities to meet a significant increase in workload based on construction of several new automated range facilities. Current facilities are at their maximum capacity in terms of capability and capacity. The proposed facility

would have an electronics shop, carpentry shop, battery shop, and a welding shop. These shops would need independent air handling systems for each section. This facility would be built in close proximity to the current facility and would partially overlay a currently developed site, which would minimize overall impacts on wetlands. This project is proposed to be located in the vicinity WG715877. The project would be completed by the end of 2003 and would have the following direct impacts on the site:

Total impacted acreage: 1.0 acre

All Season Local Firing Points
This project would require hardening (stabilizing soils with good base material and gravel) three firing points that each can accommodate one artillery battery with support equipment. The approximate area required for each site is 200 X 400 meters. The road network to these points would require minor repairs. The proposed locations are vicinities WG 723862, WG719868, and WG 701863. The project would have the following direct impacts on the site:

Firing Point 1: 200 x 400 meters (19.8 acres)
Firing Point 2: 200 x 400 meters (19.8 acres)
Firing Point 3: 200 x 400 meters (19.8 acres)
Total impacted acreage: 60 acres

2.2.2 Range Projects Proposed for Yukon Training Area
Projects proposed on Yukon Training Area are shown in Figure 2.1c.

Multi-Purpose Training Range (Project No. 53401)
USARAK proposes to construct a standard MPTR to provide qualification and training scenarios for vehicle-mounted, crew-served weapons. The range would support weapons up to 105 mm cannon and .50 caliber machine guns. The range would support the Interim Armored Vehicle (Stryker). Munitions fired from this range would be non-dudded types (*e.g.*, inert high explosive anti-tank, inert high explosive plastic), which are already fired on Fort Wainwright. The 40-mm training practice rounds would have a small spotter charge. The range would be cleared after each use, limiting the possibility of leaving a round whose spotter charge has not fired. This is not a high explosive round, but it is still treated as a possible dud. These rounds would be fired within restrictions established in U.S. Army Alaska Regulation 350-2, *Training*.

The preferred site for the MPTR is in the Yukon Training Area immediately east of Eielson Air Force Base near Winter Camp, southeast of Manchu Lake. The range (would consist of two lanes (with service roads) along which vehicle-mounted weapons crews would travel and engage moving and stationary targets. Support facilities include a warm-up facility, Arctic latrines, ammo breakdown facility, control tower, power and data distribution system, electric and communication service via overhead power lines along Manchu Lake Road to Eielson Air Force Base, vehicle maintenance facility, vehicle holding area, an after-action-review building, and a crushed aggregate parking area.

Appendix B includes a schematic of a standard MPTR and briefly describes its use, characteristics, and additional information. The proposed range would be similar although targets might be site-

adapted and would be moved to minimize site-specific environmental impacts. The MPTR is scheduled for completion by October 2004.

The MPTR would be an 842-acre automated, live-fire battle course. The complex would be installed with conduit and cable to support voice, data feeds for automated targets, and closed-circuit-television. Operations would be conducted from moving vehicles. Target array and firing position/distance scenarios are according to Table VIII in FM 17-12-1, and FM 23-1. The target configuration typically consists of 20 stationary vehicle targets, 4 moving vehicle targets, and 50 E-type silhouette targets.

The after-action-review building would be used to assemble and brief personnel prior and after training exercises. The facility would be wired to support voice, data, and video. The building would be approximately 7,500 feet^2.

The vehicle maintenance facility would support the entire Yukon Winter Camp and the MPTR complex. The preferred site is over 25 miles from the cantonment area at Fort Wainwright. The maintenance facility would contain at least one indoor vehicle bay and be approximately 2,500 feet^2.

The control tower would consist of an elevated Range Control facility and be used to avoid safety issues with aircraft. The warm-up facility would be used to stage personnel, between training sessions. The warm-up facility would be about 4,000 ft^2. The ammunition breakdown/issue facility would be used to issue ammunition to training personnel and would be about 7,500 feet^2.

Upgrade of Manchu Lake Road (Project No. 53401)
Work would also include upgrades to the existing Manchu Lake Road from Moose Creek to Transmitter Road. Manchu Lake Road would be upgraded to accommodate the type, weight, and number of anticipated vehicles using the MPTR, IPBC, ISBC, and the Light Demolition Range. The project could impact about 21 acres. Road upgrades would include, paving, ditching and replacing abutments on the Bailey bridge over Moose Creek. A wetland permit from the U.S. Army Corps of Engineers would be required.

Infantry Squad Battle Course
Appendix B includes a schematic of a standard ISBC. The ISBC would consist of a series of automated target engagements, which would simulate realistic target arrays that the solider would engage in combat. Targets would include an observation post, primary objective with a trench system, and a simulated counterattacking force. Targets would be arrayed to allow the squad multiple avenues of approach. All ammunition used on this range complex would be nondud producing (*e.g.*, 9 mm tracer (AT4 subcaliber), 5.56 mm (M-16), 7.62 mm (M-60 machine gun), 40 mm training practice round-orange powder (M-203)). Facilities are scheduled for completion by April 2005. This facility is proposed to be located in the Yukon Training Area, vicinity grid WG 084736 (NAD 27).

Infantry Platoon Battle Course
The IPBC is proposed to be sited immediately to the north of the MPTR. It is a larger-scale course (about 1,493 acres) than the ISBC and is designed for dismounted platoon operations. The IPBC would share ancillary facilities with the MPTR. Appendix B includes a schematic of a standard IPBC. Weapons fired on this course would be the same as those on the ISBC.

Light Demolition Range

USARAK proposes to construct a Light Demolition Range to support demolition training (up to 250-pound charges) to include steel and timber cutting and the use of breach and cratering charges, in both charge placement and detonation. These objectives would be accomplished at five different sites within the complex, with each site constructed for maximum safety and efficiency. The range would have a steel cutting bunker, parking areas, missile-proof bunkers, ammunition breakdown/issue area, and an administrative area. This project would require clearing of approximately 2.6 acres. The selected site is on high ground to minimize impact on wetlands. This facility is proposed to be located in the Yukon Training Area, vicinity grid WG113717 (NAD 27). The project would have the following direct impacts on the site:

Active range: 300 x 300 meters, completely cleared, replaced with gavel pads, walkways, ammo storage area, safety berms, and blast pads. Remaining area will be re-seeded. (2.223 acres)
Safety setback: 1,500 x 1,500 meters, trees removed, area leveled for (relatively) clear line of site. Re-seeded, with tri-annual hydro-axe maintenance to keep vegetation growth down. (553.52 acres)
Parking Lot: 100 x 25 meters (0.6175 acres)
Access Road: 365 x 8 meters
Fill: As needed to establish the active range, parking area, and access road
Total impacted acreage: 556.3675 acres

Facilities are scheduled for completion by summer 2003.

2.3 Alternatives

Three alternatives were considered, No Action, Alternative Sites, and Alternative Installations. The No Action Alternative would not meet the purpose and need for the Proposed Action described in Section 1.2 above. Alternative sites have no particular advantage over proposed sites, and many alternative sites would have environmental constraints (*e.g.*, conflicts with historic resources, quality habitats, wetlands) or would not meet mission requirements as well as proposed sites. Alternative installations are not feasible because they do not meet training needs for USARAK troops.

2.3.1 Alternative 1 – No Action

Consideration of the No Action Alternative is required by NEPA. The No Action Alternative represents status quo. It provides a basis of comparison for the Proposed Action and also addresses issues of concern by avoiding or minimizing effects associated with the Proposed Action. Under this alternative, none of the projects would be implemented. This would, in effect, have the following mission consequences.

- USARAK would not have a venue to support sniper field fire training or advanced rifle marksmanship training.
- USARAK would have no facilities at Fort Wainwright that provide adequate crew-served weapons, live-fire, maneuver-based training and qualification, and trainers would not have state-of-the-art feedbacks that allows unbiased analyses of unit performance.
- USARAK would not have adequate training facilities at Fort Wainwright for troops to attain and maintain proficiency required in urban operations and in infantry tactics.
- USARAK would not provide troops with adequate qualification scenarios and would not meet Army standards for qualification purposes.
- USARAK, in general, would have substandard range support facilities that do not efficiently and effectively support troop training and do not provide optimal safety conditions.

This alternative ***will be considered*** in the environmental consequences analysis to provide a baseline for environmental conditions.

2.3.2 Alternative 2 – Alternative Sites

No other alternate sites for Main Post projects were considered viable due to obvious military mission and environmental advantages of siting proposed projects on or between similar ranges with similar environmental impacts already occurring. Locating these ranges within the Small Arms Complex of the Main Post would not require any additional impact areas, would minimize troop travel time and training efficiency, would minimize range support facility costs, and would leave the maximum amount of Main Post acreage open to other military use options.

Proposed Main Post sites are ideal for mission accomplishment and have minimal environmental impacts (no significant cultural resources, avoidance of quality habitats, use of existing construction footprints as much as possible, etc.).

The construction and use of ranges in the Tanana Flats Training Area is not feasible due to a lack of a bridge across the Tanana River.

The Main Post will not support the MPTR/IPBC complex, which is the main proposed facility for Yukon Training Area. It is difficult to find alternate sites at Yukon Training Area for the MPTR/IPBC, ISBC, and Light Demolition Range. Travel time, a need to keep these facilities relatively close to each other, other uses of Yukon Training Area (U.S. Air Force facilities and training, impact area), a need to avoid noise and safety impacts on Eielson Air Force Base housing and other sensitive areas as well as surrounding occupied areas (3,000-meter buffer), proximity to power lines (5 miles maximum), and terrain requirements (30% slope maximum) for the ranges are some of the more important elements that dictate the general area of the proposed siting for these ranges. There are no other sites that meet training standards and range safety requirements.

This alternative ***will not be considered*** in the environmental consequences due to no options that appear to have mission or environmental advantages over proposed sites.

2.3.3 Alternative 3 – Alternative Installations

The feasibility of siting these projects at alternative installations (Fort Richardson and Donnelly Training Area) has been considered. Figure 2.1a shows both alternative installations in relation to Fort Wainwright.

Fort Richardson is not a viable installation for the siting these ranges because most combat troops assigned to USARAK are stationed at Fort Wainwright. The distance to travel from Fort Wainwright to Fort Richardson would create significant transportation costs and decrease training efficiency.

Donnelly Training Area is a somewhat more viable option since Fort Wainwright troops train there, but it is still more expensive and time-consuming to travel to Donnelly Training Area for small arms and small unit training. In addition, there are more environmental issues at Donnelly Training Area, particularly wildlife special interest areas. There is no reason to consider establishing new ranges on relatively undisturbed land at Donnelly Training Area when Fort Wainwright troops could train on new ranges on already disturbed lands at the Main Post Small Arms Complex and relatively close portions of Yukon Training Area. It is important now and will be more important with the proposed Interim Brigade Combat Team mission that is under environmental review for the near future to leave as many maneuver options as possible open at Donnelly Training Area.

This alternative ***will not be considered*** in the environmental consequences analysis.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section discloses potential environmental effects of each alternative and provides a basis for evaluating these effects in context relative to effects of other actions. Effects can be direct, indirect, or cumulative. Direct effects occur at the same place and time as the actions that cause them, while indirect effects may be geographically removed or delayed in time. This environmental assessment focuses on resources and issues of concern identified during the scoping process (see Section 1.3) and on differences in effects between the Proposed Action and its alternative, No Action. Areas with no discernible or significant concerns or known effects, as identified in the scoping process (Section 1.3.2), are not included in this analysis.

Neither the No Action nor the Proposed Action alternatives include Tanana Flats Training Area of Fort Wainwright. Thus, below sections are primarily restricted to the Main Post and Yukon Training Area.

3.1 Soils

Additional information regarding soils on Fort Wainwright is within the Integrated Natural Resources Management Plan (Natural Resources Branch 2002). Unless stated otherwise, below information is from that source.

3.1.1 Existing Conditions

Main Post

Most of the Main Post area is Chena alluvium, an unconsolidated silt-gravel mixture. Discontinuous permafrost lies just under the surface in some areas. The unconsolidated silt-gravel mixture freezes perennially. It has a high bearing strength when frozen but is subject to sliding and is difficult to compact when thawed. Northernmost portions of the post are in the foothills of the Yukon-Tanana Upland and consist of bedrock covered by muck and loess. Muck inhibits drainage, largely due to the presence of impermeable permafrost below the surface, and has very low bearing strength when thawed. Swale deposits, made up of poorly stratified silt, sand, and organic matter, are scattered along the Richardson Highway and in parts of South Post. These deposits have high ice content and freeze perennially (Nakata Planning Group 1987).

Yukon Training Area

Soils on Yukon Training Area south-facing slopes consist of well-drained silt loams and are generally free of permafrost. Loams grade from shallow, gravelly silt near ridge tops, to silt loams on mid-slopes, to deep, moist silt loams on lower slopes. Drainage bottoms and depressions are occupied by shallow, gravelly silt loam covered with a thick layer of peat and underlain by permafrost. Soils on north-facing slopes are shallow, gravelly silt loams with thick covers and permafrost (Bureau of Land Management and U.S. Army 1994).

3.1.2 Environmental Consequences

Proposed Action

Soil disturbance would occur during construction, but best management practices to control erosion, such as the use of silt fences, would be used to ensure soils do not erode from the site or enter waterways. There is no known contamination of soils on proposed sites at Yukon Training Area. However, it is likely that soils downrange of existing and past ranges at the Small Arms Complex are contaminated, but there is no data on

the extent of this contamination. Potential soil contaminants in the impact area include lead, tin, nitrates (from explosives), and phosphorus.

If contamination on construction sites is discovered during preconstruction or construction, appropriate soil remediation would be implemented. Remediation methods would be agreed upon by the U.S. Army, U.S. Environmental Protection Agency, and the Alaska Department of Environmental Conservation. Standard spill prevention measures would be taken during construction and operation of the ranges. Proposed construction would not have any effects on soils beyond construction sites, which have a history of disturbance in the Main Post proposed site locations. Construction of range facilities and roads associated with them would take into account significant soil limitations, particularly in Yukon Training Area.

Main Post
All soils affected by the Proposed Action are classified as Histic Pergelic Cryaquepts, Typic Cryofluvents, and Pergelic Cyrofibrists. Histic Pergelic Cryaquepts have very severe and severe limitation ratings for use as roads or off-road traffic, respectively. Typic Cryofluvents have moderate and slight limitation ratings for use as roads or off-road traffic, respectively (Rieger *et al*. 1979).

Yukon Training Area
All soils affected by the Proposed Action are classified as Alfic Cryochrepts in association with Histic Pergelic Cryaquepts. Alfic Cryochrepts have severe and moderate-severe limitation ratings for use as roads or off-road traffic, respectively. Histic Pergelic Cryaquepts have very severe and severe limitation ratings for use as roads or off-road traffic, respectively (Rieger *et al*. 1979).

Alternative 1 – No Action
Soils would not be affected under this alternative. No new construction would occur, and erosion rates would not exceed those occurring due to natural processes on already disturbed sites.

3.2 Water Resources

Additional information regarding water resources on Fort Wainwright is within the Integrated Natural Resources Management Plan (Natural Resources Branch 2002). Unless stated otherwise, below information is from that source.

3.2.1 Existing Conditions

3.2.1.1 Surface Water

Fort Wainwright's surface water resources are diverse and include numerous rivers, streams, ponds, and lakes. The volume of flow fluctuates dramatically by season. During the long period of freeze, usually from October to May, flow is limited to seepage of groundwater from aquifers into streams. Many small streams freeze solid (zero discharge) during winter. Snowmelt typically begins in March or April and reaches its peak in June. Flow is greatest during June and July. By the end of July, most snow has melted, and a steady flow during August and September is sustained by rainfall. The Chena River is nonglacier-fed and reaches peak flow before the Tanana River, which is fed by meltwater from glaciers and snowfields in the Alaska Range (Nakata Planning Group 1987).

The quality of the surface water has remained good since withdrawal of the land for military use. There is no reason to suspect either degradation (beyond localized, temporary sedimentation) or improvement to most Fort Wainwright surface waters.

Lakes and ponds are numerous on Fort Wainwright, and many freeze solid during the winter. Only a few are stocked by the Alaska Department of Fish and Game.

Main Post
The Tanana and Chena rivers drain Main Post (Bureau of Land Management and U.S. Army 1994). The Chena River, from the Chena Slough to the confluence with the Tanana River, has been classified by the state of Alaska as Class A (suitable for agriculture, aquaculture, and industrial), Class B (suitable for water recreation), and Class C (suitable for growth and propagation of fish, shellfish, other aquatic life, and wildlife). The pH of the Chena River is slightly above neutral during winter and slightly below neutral in summer. Nitrogen concentration is high in relation to phosphate, which may be the limiting inorganic nutrient for phytoplankton production. Only naturally occurring iron concentrations were higher than secondary state standards. The high iron concentration in the lower portion of the Chena River may be the result of surface water and groundwater discharge from swampy, muskeg areas in this region. Sediment loads are generally low. Nonglacier-fed streams generally carry less than 300 milligrams/liter during high flow and as little as 10 milligrams/liter during low flow periods (Bureau of Land Management and U.S. Army 1994).

Yukon Training Area
Northern and northeastern portions of Yukon Training Area are drained by the Chena River and its tributaries: the South Fork Chena River, Hunts Creek, and Horner Creek. The southern portion of Yukon Training Area is drained by Ninety-Eight Creek, a tributary of the Salcha River and the Little Salcha River. Streams draining the western portion of Yukon Training Area flow directly, or by way of Piledriver Slough, into the Tanana River. All streams originating on Yukon Training Area have their headwaters in the Yukon-Tanana Uplands, in rolling glacier-free terrain (Bureau of Land Management and U.S. Army 1994). Hydrology within the general project area for Yukon Training Area is shown in Figure 2.1c.

The only place where there is reason to suspect any adverse effects on water quality is Stuart Creek, which has the highest potential to receive erosion sediment. The discussion of water quality in the Chena River (above) is also pertinent to portions of Yukon Training Area.

3.2.1.2 Groundwater

Main Post
Much of Fort Wainwright is underlain by an alluvial aquifer. Groundwater in the aquifer is recharged by the Tanana River, while the Chena River and direct infiltration of precipitation contribute small amounts. Groundwater potential is best along the alluvium of the Tanana River, where wells are capable of yielding 3,000 gallons per minute at less than 200 feet in depth (Nakata Planning Group 1987).

Groundwater in the Tanana-Chena Rivers Floodplain (Main Post proposed sites) tends to have relatively high, naturally occurring levels of metals, especially iron and arsenic. Elevated arsenic levels are prevalent in upland areas. These are not related to human-caused pollution (Harding Lawson Associates 1996).

Army-related industrial activity in the Main Post may have caused groundwater pollution, generally associated with underground storage tanks, facilities where chemicals were stored, and places where chemicals were disposed during the early history of the post. These areas are being intensively monitored. Pollution is generally localized, and there is no indication of deep groundwater pollution. The recent trend has been toward improvement as Army restoration projects mitigate damage to groundwater quality. Practices that have led to this contamination have been discontinued; for example, underground storage tanks have been removed.

Due to past contamination of localized areas, primarily within the Main Post area, Fort Wainwright is classified as a Comprehensive Environmental Response, Compensation, and Liability Act "Superfund" site. Remediation is ongoing. Groundwater management consists of restoration projects associated with individual sources of pollution, generally associated with the Comprehensive Environmental Response, Compensation, and Liability Act "Superfund" designation.

Yukon Training Area
The lowest ground water potential on Fort Wainwright is in the rolling hills of Yukon Training Area, where wells produce around 50 gallons per minute at the same depth (Nakata Planning Group 1987). Groundwater in the Upland Hills area of Yukon Training Area (almost all construction impacts of proposed projects) is good to very good (low iron content) (Defense Mapping Agency 1978).

3.2.2 Environmental Consequences

Proposed Action
Soil disturbance would occur during construction, but best management practices to control erosion, such as the use of silt fences, would be used to ensure soils do not erode from the site or enter waterways. There is no reason to suspect that any facilities associated with the Proposed Action would impact ground water quality. Standard spill prevention and if required, spill response, procedures would be used during range construction and operation.

Main Post
The only surface waters in the vicinity of the Proposed Action are the Tanana River and its braids in front of the proposed ranges. These would not be affected by construction or operation of proposed ranges.

Yukon Training Area
The Proposed Action would not affect Stuart Creek, which has the highest potential to receive erosion sediment. The Moose Creek drainage would receive almost all runoff from Proposed Action sites. It would not be affected by construction or operation of proposed ranges due to construction.

Alternative 1 – No Action
Neither surface nor ground water would be affected under the No Action Alternative.

3.3 Noise

Noise can be assessed several ways. One commonly used means is to quantify the average noise dose received at a location over a period of time. Average noise levels are calculated using computer models that take all noise activities over a period of time and generate noise contours that connect areas of equal energy. These noise contours are overlaid upon maps to show areas where the noise environment would be incompatible with noise-sensitive land uses.

The most widely used metric for noise contouring is the day-night average sound level (DNL). The DNL represents energy-averaged sound levels measured by summation and averaging of sound exposure level values during a 24-hour period. A penalty of 10 decibels (dB) is assigned to noise events occurring between 10:00 p.m. and 7:00 a.m. The 10-dB penalty compensates for generally lower background noise levels and increased annoyance associated with events occurring at night. The DNL is a useful descriptor for noise in two respects. First, it is an average; it fits intuitive concepts when dealing with continuous noise, such as that from a busy highway. Second, because it is a summation of sound energy over a 24-hour period, it is a cumulative metric. For intermittent sound, it represents the total sound being received rather than the sound level at any given time. In this respect, it effectively identifies a "noise dose" for a day.

Noise from transportation sources, such as vehicles and aircraft, and from continuous sources, such as generators, is assessed using the A-weighted DNL, which significantly reduces the measured pressure level for low-frequency sounds while slightly increasing the measured pressure level for some high-frequency sounds. Noise from small arms ranges is also assessed using A-weighted DNL.

Impulse noise resulting from armor, artillery, and demolition activities is assessed in terms of the C-weighted DNL, which characterizes high-energy blast noise and other low frequency sounds capable of inducing vibrations in buildings or other structures. The C- weighted scale does not significantly reduce the measured pressure level for low frequency components of a sound and therefore accounts for the potential of vibration.

Noise Zone III. Noise Zone III is an area around the source of the noise in which the DNL is greater than 75 dB, A-weighted for aircraft, vehicle, and small arms range noise, and greater than 70 dB, C-weighted for noise from weapon systems larger than 20-mm. The noise level within Noise Zone III is considered so severe that noise-sensitive land uses should not be considered therein.

Noise Zone II. Noise Zone II is an area where the day-night sound level is 65-75 dB, A-weighted or 62-70 dB, C-weighted. Exposure to noise within this area is considered significant and use of land within Noise Zone II should normally be limited to such activities as industrial, manufacturing, transportation, and resource production. However, if the community determines that land in Noise Zone II areas must be used for residential purposes, then noise level reduction features should be incorporated into the design and construction of the buildings.

Noise Zone I. Noise Zone I include all areas around a noise source in which the day-night sound level is less than 65 dB, A-weighted or less than 62 dB, C-weighted. This area is usually suitable for all types of land use activities.

3.3.1 Existing Conditions

Figure 3.3.1a (Montgomery Watson Harza 2001) shows existing noise levels in the Main Post vicinity. Figure 3.3.1b shows existing (and projected) noise levels in Yukon Training Area; current Yukon Training Area noise levels were calculated using 2002 noise data.

3.3.2 Environmental Consequences

Proposed Action

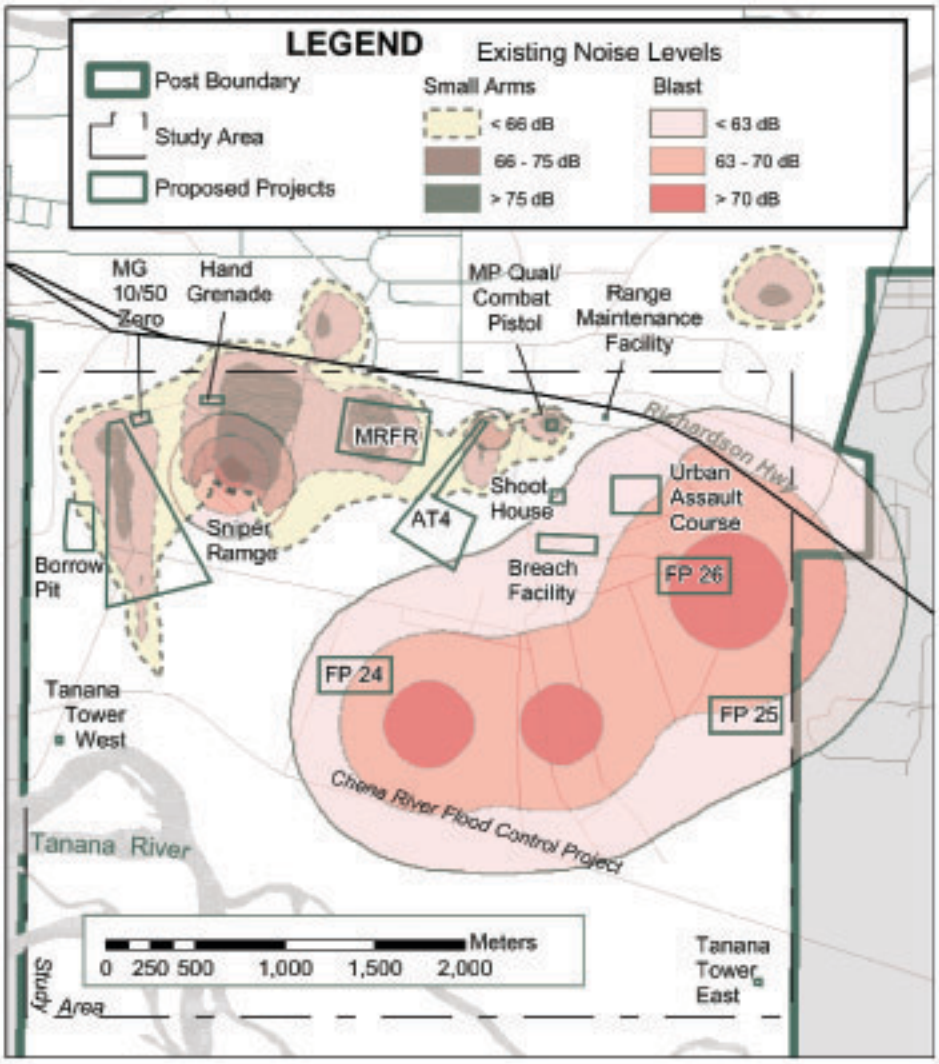
The proposed action would create two general types of noise: temporary construction noise and military operations noise. During construction, noise levels would increase in the immediate vicinity of the construction. This temporary noise should not go beyond the immediate area and would not impact lands off the Main Post or Yukon Training Area. Military operations noise from the proposed actions would consist of two noise types: high amplitude impulsive noise (large caliber weapons and blast noise) and small arms noise.

Small Arms

Small arms noise is more localized than that of large caliber weapons. None of the proposed ranges would fire enough rounds to generate additional noise contours off of the Main Post or Yukon Training Area. Therefore, noise levels from small arms firing would be compatible with land use off the installation according to federal guidelines.

Table 3.3.2a lists expected maximum levels for the small arms that will be fired. Actual noise levels could be +/- 5 dB depending on weather conditions.

Figure 3.3.1a Existing Noise Zones at Proposed Project Sites at Main Post



A Swedish study of annoyance caused by noise from shooting ranges (Sorensen and Magnusson 1979) showed the annoyance for this type of noise is low up to a certain threshold, after which it increases relatively quickly. For the A-weighted, fast-time, integrated maximum level, this threshold is approximately 63 dBA. At levels below this threshold, less than 2 percent of the population exposed to the noise consider themselves to be highly annoyed. At the threshold level, the percent highly annoyed increases to 10 percent and continues to increase as the noise level increases. Table 3.3.2b indicates the percentage of population highly annoyed from small arms range noise.

Figure 3.3.1b Existing and Projected Noise Zones at Proposed Project Sites at Yukon Training Area

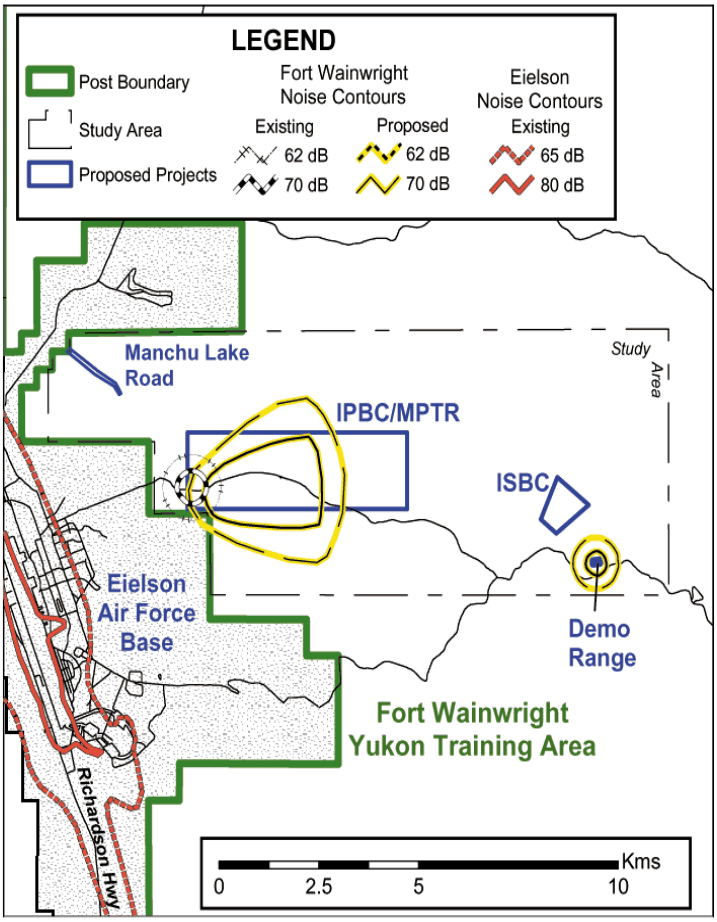


Table 3.3.2a. Small Arms Noise Levels

Maximum Noise Levels (dBA) For M16- 5.56mm Rifle

Direction of Fire-Degrees	1000m	2000m	3000m
0	65	55	48
45	63	53	46
90	58	48	40
180	46	36	29

Maximum Noise Levels (dBA) For M60- 7.62mm Machine Gun

Direction of Fire-Degrees	500 m	1000m	2000m	3000m
0	71	62	54	49
45	70	61	53	48
90	67	57	48	42
180	56	46	36	30

m – meters

Table 3.3.2b. Small Arms Noise Impacts

dBA	Percent Highly Annoyed
< 63	2
63	10
65	13
70	21
75	29
80	38

Proposed Main Post project sites are located within noise zones I, II, and III (Montgomery Watson Harza 2001). Proposed ranges, when completed, would be compatible with existing noise levels, primarily since the Proposed Action would not change the use of the area. The small explosives charges used in the MOUT facility would not significantly add to the noise environment.

Proposed ranges at Yukon Training Area are located at such distances from the boundary that small army's firing would not generate off-post noise impacts. Proposed ranges are directed to the interior of the installation. In general, distance from boundaries, coupled with the direction of fire, would keep small arms noise levels low enough that there would be a low risk of noise complaints.

Large Caliber Weapons and Blast Noise

Main Post

The Main Post Small Arms Complex is within noise zones I, II, and III. Proposed ranges, when completed, would be compatible with existing noise levels since this area already includes blast noise. Zone III would continue to remain on Fort Wainwright, and Zone II would not be beyond boundaries of Fort Wainwright to any degree further than at present. Total artillery rounds fired from hardened firing points could increase during seasons when the firing points are not now usable. Individual noise events would not change since firing intensity at any one time would not increase due to improvements. However, average noise impacts would increase slightly, slightly expanding noise zones II and III.

Yukon Training Area

Proposed projects would result in increased blast noise levels. As Figure 3.3.1b indicates, neither Zone II nor Zone III would be beyond boundaries of Yukon Training Area except for a very small portion of Eielson Air Force Base, unoccupied land that would be on the periphery of Zone II. Figure 3.3.1b also indicates noise levels from airfield operations at Eielson Air Force Base to provide comparisons of impacts. There is some concern that the proposed actions would impact Eielson Air Force Base housing, but these would continue to be well within Zone I.

To further address concerns of residents at Eielson Air Force Base, another way noise can be assessed is by "peak" or "maximum" noise levels (dBP). Peak levels can be used when there is a chance that an infrequent noise event could generate complaints even though average noise levels are compatible with noise-sensitive land uses. Noise contours at Yukon Training Area based on average operations do not impact upon the housing at the adjacent Air Force Base, but residents still might ask, "How loud will it be?" The peak noise level of the gun firing can answer that question.

Evaluations of the complaint potential from impulsive noise use guidelines developed by the Naval Surface Warfare Center, Dalhgren, Virginia. These guidelines (Table 3.3.2c) for delaying tests at Dahlgren are

based on over 10 years experience using meteorological forecasts. These levels resulted from the best compromise between cost, efficiency of range operations, and good community relations.

Table 3.3.2c. Noise Complaint Potential

Predicted Sound Level (dBP)	Risk of Complaints	Action
<115	Low risk of noise complaints.	Fire all programs
115-130	Moderate risk of noise complaints.	Fire important tests. Postpone non-critical testing, if feasible.
130-140	High risk of noise complaints, possibility of damage.	Only extremely important tests should be fires.
>140	Threshold for permanent physiological damage to unprotected human ears. High risk of structural damage claims.	Postpone all explosive operations.

The range of noise levels expected from detonating of a 105 mm round are listed in Table 3.3.2d. Impulsive noise propagation is based on meteorological variables. Studies have found that variation of temperature and wind velocity with altitude can cause a noise event to be inaudible at one time and highly annoying at another time. Therefore, the table also lists the percentage of time when peak noise levels could hit 115 dBP.

Table 3.3.2d shows the expected peak noise levels of a Stryker 105 mm gun being fired. The housing at Eielson is approximately 3,000 meters from where the guns would be firing on the MPTR. The direction of firing would put the housing approximately 180 degrees from the direction of fire. At 3,000 meters, the expected peak noise level would be 95 dBP. Since weather plays a large factor in weather conditions, it is predicted that 0.08% of the time a 105 mm gun is fired, levels might reach 115 dBP, the point at which complaint risks begin to become significant.

Alternative 1 – No Action
The noise environment would be unaffected under the No Action Alternative.

3.4 Air Quality

The Federal Clean Air Act authorizes the Environmental Protection Agency to establish national ambient air quality standard to protect public health. Standards for six pollutants (*i.e.*, ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, inhalable particulate matter, lead particles) have been adopted.

3.4.1 Existing Conditions

The Fairbanks area, including Fort Wainwright, has been designated as a moderate nonattainment area for carbon monoxide and an unclassifiable or attainment area for the other pollutants. The Fairbanks area has had periods over the past two decades when it exceeded the carbon monoxide maximum 8-hour average standard. The primary source of carbon monoxide in Fairbanks is vehicle emissions. Levels of carbon

monoxide are highest in winter when cold weather and low winds produce temperature inversions (U.S. Army Corps of Engineers 2001).

Table 3.3.2d. Noise Levels Generated by 105 mm Rounds

	Distance and Noise in dBP		**Distance and Noise in dBP**		**Distance and Noise in dBP**	
Firing Azimuth	2000m	% of time over 115 dBP	3000m	% of time 115 dBP exceeded	4000m	% of time 115 dBP exceeded
45	115	49	108	15	103	5
90	113	42	107	11	102	3.5
180	101	0.9	95	0.08	90	0.02
Firing Azimuth	5000m	% of time over 115 dBP	6000m	% of time over 115 dBP	11500m	% of time over 115 dBP
45	100	1.9	97	0.9	87	0
90	99	1.3	96	0.6	86	0
180	87	0	84	0	73	0

*Calculated with algorithm, SHOT61, by Dr. Nelson D. Lewis, U.S. Army Center for Health Promotion and Preventive Medicine.

3.4.2 Environmental Consequences

Proposed Action

The operation of heavy equipment during construction of the projects would release a non-significant amount of carbon monoxide into the air. Appropriate emission control devices on vehicles would minimize impacts to air quality during construction. Heavy equipment sources of carbon monoxide would not impact air quality during the critical winter season because construction using heavy equipment would only occur during warmer months when air circulation and quality are within standards.

Operation of the facilities would result in minor amounts of additional energy production (primarily electricity), which could increase emissions from the central heat and power plant. Air quality permits would be modified, if required.

Alternative 1 – No Action

Air quality would be unaffected under the No Action Alternative.

3.5 Floral Resources

Additional information regarding floral resources on Fort Wainwright is within the Integrated Natural Resources Management Plan (Natural Resources Branch 2002). Unless stated otherwise, below information is from that source.

3.5.1 Existing Conditions

Vegetation patterns are influenced by climate, soil, topography (slope, aspect, and elevation), depth to water table, permafrost, and fire. Native vegetation was removed from much of the Main Post during original construction of Ladd Field in the 1940s. Due to landscaping and other human activities, vegetation of the Main Post does not reflect natural vegetation patterns of the area (Nakata Planning Group 1987).

Fort Wainwright has four vegetation types: moist tundra, treeless bogs, open, low-growing spruce forests, and closed spruce-hardwood forests. Vegetation types of interior Alaska form a mosaic and reflect fire history, slope and aspect, and presence or absence of permafrost (Viereck and Little 1972).

A typical vegetation profile on Yukon Training Area from lowland, up a south slope, and down the north slope, would include water, barren, high brush, deciduous forest, white spruce forest, moist tundra, black spruce forest, and mixed forest (Bonito 1980). This profile does not precisely match Viereck and Little's (1972) vegetation types, which were mapped on a statewide scale. Wetland occurs at various altitudes and sometimes only during early successional stages. Localized conditions often result in various combinations of vegetation.

3.5.1.1 Floristics Inventory

During 1995-1996, CRREL conducted a vascular plant inventory for USARAK at Fort Wainwright (Tande *et al.* 1996). Cryptogams (*i.e.,* mosses and lichens) were not identified. The inventory found 491 taxa (including subspecies and varieties), representing 227 genera in 72 families, about 26% of Alaska's vascular flora. At least 10 taxa collected represented extensions of known ranges (Tande *et al.* 1996).

3.5.1.2 Listed and/or Rare Plants

A comprehensive survey of rare plants was included as part of the floristic inventory for Fort Wainwright conducted in 1995. Only two plant species on the federal endangered species are known to occur in Alaska. Neither species' current or historic ranges include Fort Wainwright; a report released in 1996 indicated that there are no federally-listed endangered or threatened plant species on Fort Wainwright (Tande *et al.* 1996). Appendix C has a copy of a letter from the U.S. Fish and Wildlife Service confirming that no federally-listed species are known on Army lands in Alaska and that consultation under Section 7(a)(2) of the Endangered Species Act, 16 USC 1536(a)(2) is not required.

There are 16 vascular plant species of concern that are known to occur on Fort Wainwright. These plants are being tracked by the Alaska Natural Heritage Program because they are thought to be uncommon or rare in Alaska and/or uncommon or rare globally (Alaska Natural Heritage Program 2001). These species are listed below in Table 3.5.1.3 and are documented in the survey results of Tande *et al*. (1996).

Table 3.5.1.3. Rare Plant Species Occurring on Fort Wainwright.

SPECIES	ALASKA NATURAL HERITAGE PROGRAM RANKINGS	
	GLOBAL	STATE
Apocynum androsaemifolium	demonstrably secure	imperiled/rare or uncommon
Artemisia laciniata	demonstrably secure	imperiled
Carex crawfordii	demonstrably secure	imperiled or rare
Ceratophyllum demersum	demonstrably secure	imperiled
Cicuta bulbifera	demonstrably secure	critically imperiled or imperiled
Cryptogramma stelleri	demonstrably secure	imperiled or rare

SPECIES	ALASKA NATURAL HERITAGE PROGRAM RANKINGS	
	GLOBAL	STATE
Dodecatheon pulchellum ssp. *pauciflorum*	demonstrably secure	imperiled
Festuca lenensis	cause for concern	imperiled or rare
Glyceria pulchella	demonstrably secure	imperiled or rare
Lycopus uniflorus	demonstrably secure	rare or uncommon
Minuartia yukonensis	rare or uncommon	rare or uncommon
Myriophyllum verticillatum	demonstrably secure	rare or uncommon
Oxytropis tananensis	imperiled or rare	imperiled or rare
Pedicularis macrodonta	cause for concern	rare or uncommon
Rorippa curvisiliqua	demonstrably secure	critically imperiled
Rosa woodsii var. *woodsii*	demonstrably secure	critically imperiled or imperiled

3.5.1.3 Wetlands

Wetlands on Fort Wainwright primarily consist of freshwater marshes and shrub wetland. Some wetlands may qualify as jurisdictional wetland as defined in Section 404 of the Clean Water Act. Jurisdictional wetlands are determined by the Army Corps of Engineers on the basis of soils, vegetation, and hydrology.

Fort Wainwright had a National Wetlands Inventory completed in 1992. The U.S. Army Corps of Engineers, Waterways Experiment Station completed an intensive field survey to revise National Wetlands Inventory maps of the post in 1998. These revised wetland maps provide greater accuracy in delineation of wetlands on Fort Wainwright and are also useful to the Alaska District, Corps of Engineers for jurisdictional wetland determination.

3.5.1.4 Forest Resources

Commercial forestry has never been significant on Fort Wainwright, either before or after Army occupation. A preliminary extensive forest inventory was sponsored by the Bureau of Land Management and was completed by Tanana Chiefs Conference (1993) with assistance from the State of Alaska Division of Forestry. The inventory included the Main Post. Due to requirements for low growing vegetation on firing ranges, there is no potential for producing commercial forest products on proposed project sites at Main Post.

The inventory included Yukon Training Area, except for closed areas, (290,308 acres inventoried). The total inventoried area determined to have commercial forest potential on Yukon Training Area was 217,751 acres or about 75%, while 25% was classified as non-forested land, rivers, and other waters. On Yukon Training Area, sawtimber stands cover 1,215 acres and have a total volume of 13,722,000 cubic feet of lumber. White spruce accounts for 43% of the sawtimber (by acreage); mixed white spruce/balsam poplar accounts for 50%; and the remainder is balsam poplar and white spruce/hardwood.

Poletimber stands at Yukon Training Area comprise 52,656 acres and have a total volume of 95,253,000 cubic feet of lumber. Black spruce/white spruce/hardwood poletimber is found on 17,307 acres with a total volume of 32,882,000 cubic feet. White spruce/hardwood poletimber is found on 8,881 acres with a total volume of 30,195,000 cubic feet. White spruce/black spruce

poletimber is about 2% of the total volume, followed by white spruce, white spruce/balsam poplar, and balsam poplar, each at less than 1%.

Approximately 123 acres of white spruce sawtimber could be harvested annually, producing a sustainable yield of 92,000 cubic feet or 340,000 board feet of lumber. Hardwood harvest could occur on 317 acres/year, yielding 183,000 cubic feet or 676,304 board feet of lumber (Tanana Chiefs Conference 1993).

3.5.1.5 Fire Management Areas

Fire plays a significant role in forest development. More than 100,000 acres have burned on Fort Wainwright since 1980. White spruce *(Picea glauca*) stands may persist for 200 years in the absence of fire. Alternatively, over a 60-year period, a burned stand can progress from willow (*Salix* spp.) to aspen *(Populus tremuloides*)/birch (*Betula paperifera*) to white spruce/birch, and eventually to a mature black spruce *(Picea mariana*) forest. Wet muskeg sites may recover to complete vegetative cover in 3-5 years, while lichens may take 50-100 years. Single fire events in a white spruce/hardwood stand may perpetuate white spruce/birch communities, while repeated fires result in birch/aspen communities (Bonito 1980).

For the last several decades, wildland fire has been actively suppressed on Fort Wainwright, which has helped decrease the natural disturbance level in upland areas. The high level of human-caused disturbance in the early 1900s and fire suppression since the 1950s have resulted in a distribution of timber age classes that is heavy in the 60 to 120 years category with fewer younger stands. Older forests are more susceptible to severe wildland fire and to insect and disease damage.

Fire suppression priorities are grouped into four categories: Critical, Full, Modified, and Limited. Summaries of each category (Anonymous 1982) are presented below.

Critical Management Option: Critical Management areas receive maximum detection coverage and are highest priorities for attack response. Immediate and aggressive initial attack is provided. Land owners/managers are notified of the situation as soon as possible. Critical Management areas receive priority over adjacent lands and resources in the event of escaped fires.

Full Management Option: Full Management areas receive maximum detection coverage and receive immediate and aggressive initial attack responses. If the initial attack response is successful or the fire is otherwise controlled within the first burning period, special agency notification is not required. When fires escape initial attack and require additional suppression, affected land owners/managers are notified to develop further fire strategy.

Modified Management Option: This option provides a management level between Full and Limited. The intent is to provide a relatively high degree of protection during periods of increased fire danger, but a lower level of protection when risks of fires are diminished. Modified Management areas receive maximum detection coverage. Initial attack action, or non-action, is based on a standardized evaluation date determined by the Alaska Interagency Wildland Fire Coordination Group. Unmanned fires are monitored.

Limited Management Option: This option recognizes areas where natural fire is important or the values at risk do not warrant the expense of suppression. Limited Management areas receive routine detection effort. Attack response is based on needs to keep the fire within Limited Management areas and to protect individual Critical management sites within Limited Management areas. Land owners/managers are immediately notified of fires detected. Unmanned fires are monitored.

The U.S. Bureau of Land Management, Alaska Fire Service, has the primary responsibility for fire suppression in the YTA (Natural Resources Branch 2002). Fires in central Alaska are quite common during the summer months, most started by lightening strikes.

3.5.2 Environmental Consequences

Proposed Action

General Vegetation

Main Post

Land potentially affected by the Proposed Action in the Main Post is ecologically classified as Fairbanks Lowland. Fairbanks Lowland is a flat area adjacent to the Tanana River that is dominated by abandoned floodplain cover deposits and occasional organic bogs. Due to thick (1-2 meters) cover deposits, there is little surface expression of the underlying fluvial morphology. The area is hydrologically linked to the Tanana Floodplain by groundwater movement and rare flooding events, but the lack of streams indicates little surface water movement. Permafrost is nearly continuous; it is absent in the occasional collapse scar bogs caused by permafrost degradation. Common vegetation includes black spruce, tamarisk (*Tamarisk* spp.), and birch forests and shrub birch-ericaceous shrub (Jorgenson *et al*. 1998).

Habitat management categories in the area affected by the Proposed Action are classified as either Permanently Cleared (range footprints) or Potential Vegetation Alteration (area in front of proposed ranges) (Natural Resources Branch 2002). Thus, the Proposed Action is consistent with the approved Integrated Natural Resources Management Plan in terms of general land use.

It is desirable to maintain natural ground cover as much as possible for realism and soil and hydrology stabilization. Taller vegetation has already been largely removed in proposed ranges' footprints for existing ranges (as shown in Figure 2.1b), and the lower vegetation would not be significantly affected except where there are construction footprints. Within a short time after construction, there would be very few noticeable changes to general vegetation in the area compared to the present.

Yukon Training Area

Figure 3.5.2a and Table 3.5.2a indicate vegetation potentially affected by the Proposed Action on Yukon Training Area based on the Ecological Land Survey (Jorgenson *et al*. 1998) ecotype geographic information system layer.

Table 3.5.2a. Vegetation Potentially Affected by Proposed Projects on Yukon Training Area

Landcover	Proposed Projects				
	Demo Range	IPBC/MPTR	ISBC	Manchu Road	Total Study Area
Barren	0.00	0.00	0.00	0.00	73.59
Broadleaf Forest	2.54	474.89	86.40	5.49	5,204.47
Lake/Pond	0.00	0.00	0.00	0.00	52.19
Meadow	0.00	33.86	0.00	0.00	569.44
Mixed Forest	0.00	997.87	96.60	0.00	4,071.51
Needleleaf Forest	0.01	519.67	2.32	10.37	5,043.72
River	0.00	0.00	0.00	0.00	973.23
Scrub	0.00	33.82	0.00	0.00	352.32
Shrub	0.00	342.80	0.00	5.04	3,458.35
Totals	2.55	2,402.92	185.31	20.89	19,798.82

Listed and/or Rare Plants

No federal- or state-listed threatened or endangered plants or plant species of concern that are known to occur on proposed sites for these range projects on Main Post or YTA.

Wetlands

Figures 3.5.2b and 3.5.2c show wetlands that could be affected by the construction of the ranges on Fort Wainwright. Most proposed projects footprints on the Main Post (Figure 3.5.2b) involve wetlands. Wetlands potentially affected by the Proposed Action are as follows.

Main Post		**Yukon Training Area**	
AT4 Expansion	32.8 acres	IPBC/MPTR	789.4 acres
Borrow Pit Expansion	10.2 acres	Demolition Range	0.0 acres
Breach Facility	7.8 acres	ISBC	0.0 acres
Firing Points Improvements	59.4 acres	Manchu Road	20.7 acres
Hand Grenade Qualification	1.3 acres	**Total**	**810.1 acres**
Machine Gun Zero	1.5 acres		
Modified Record Fire Range	35.7 acres		
MP Qualification/Combat Pistol	0.7 acres		
Range Maintenance Facility	0.1 acres		
Shoothouse	1.4 acres		
Sniper Range	84.1 acres		
Towers	0.6 acres		

Urban Assault Course	9.1 acres
Total	**244.6 acres**

Figures 3.5.2a and 3.5.2b show total range footprints, including non-construction areas. In the case of ranges, actual impacts would be restricted to only a small portion of their individual footprints where facilities, roads/trails, or targetry construction cannot avoid wetlands. Many of these can be sited to avoid wetlands at final design. Precise acreage of affected wetlands would be calculated after final design to be used for the wetland permit application process

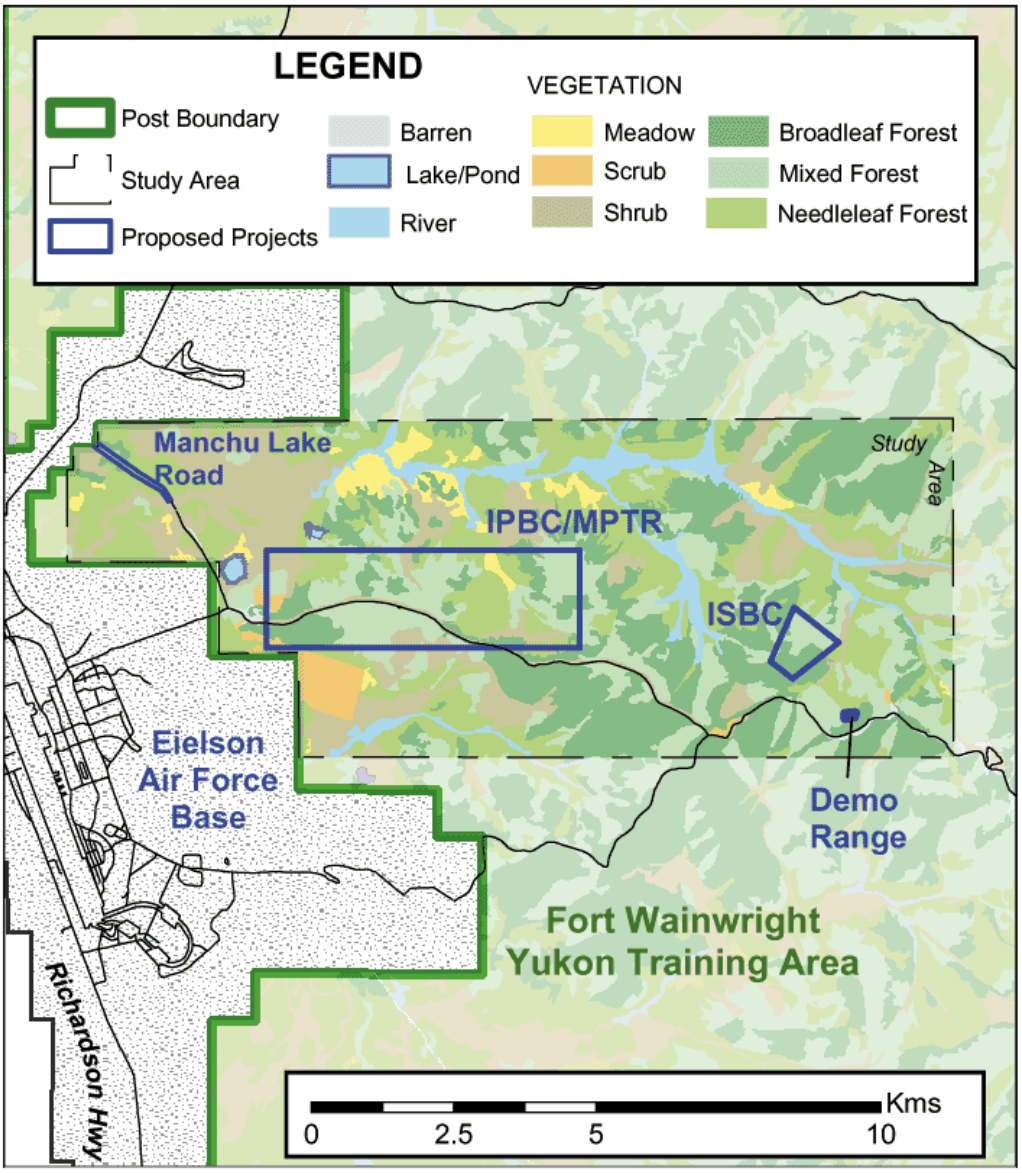
Wetlands protection is required by Executive Order 11990, *Protection of Wetlands*. Silt fences and other construction techniques would be used to prevent siltation of wetlands during construction. Construction would remove the least amount of vegetation possible to avoid melting permafrost, which could affect wetlands.

The U.S. Army Corps of Engineers would be consulted to delineate jurisdictional wetlands within the project area. USARAK would obtain Section 404 permits specific to these individual range projects, as required. Mitigation measures for wetlands would be identified in the wetlands permit and implemented by USARAK.

Forest Resources

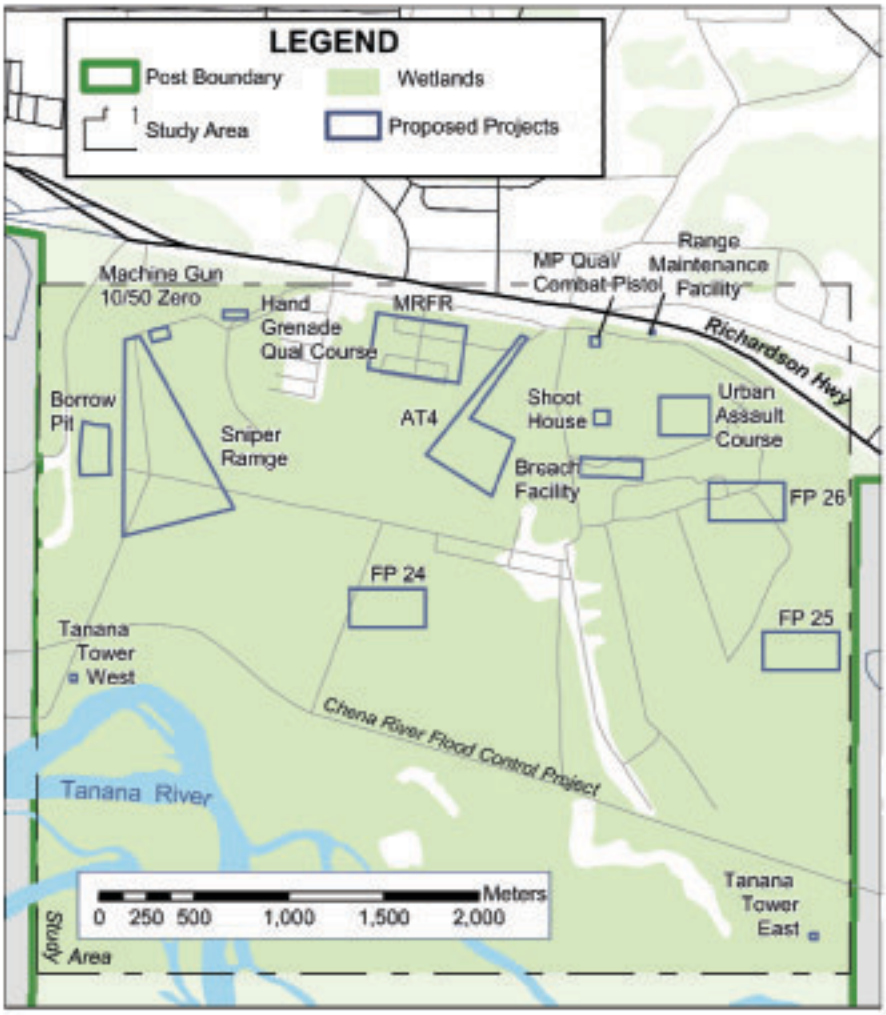
There are no commercial value forest resources on Main Post proposed sites as these are maintained in low-growing vegetation for range visibility. There could be one-time timber sales conducted on proposed sites at Yukon Training Area to clear timber for range construction. However, there are significant issues (primarily available markets) that might make this type of removal impracticable.

Figure 3.5.2a. Vegetation at Proposed Project Sites on Yukon Training Area



The current value of any timber removed by construction contractors would be deposited by contractors in the Army Forestry Reserve Account (Army Regulation 200-3) if it were removed without a timber sale. The contractors would, in effect, purchase the timber from the Army. The current value of such timber, based on State of Alaska, Division of Forestry fuelwood timber sales, is approximately $2.00 per hundred cubic feet of timber. A timber cruise would be conducted to determine the volume and value of affected timber after the final construction footprint is determined.

Figure 3.5.2b. Wetlands at Proposed Project Sites on Main Post



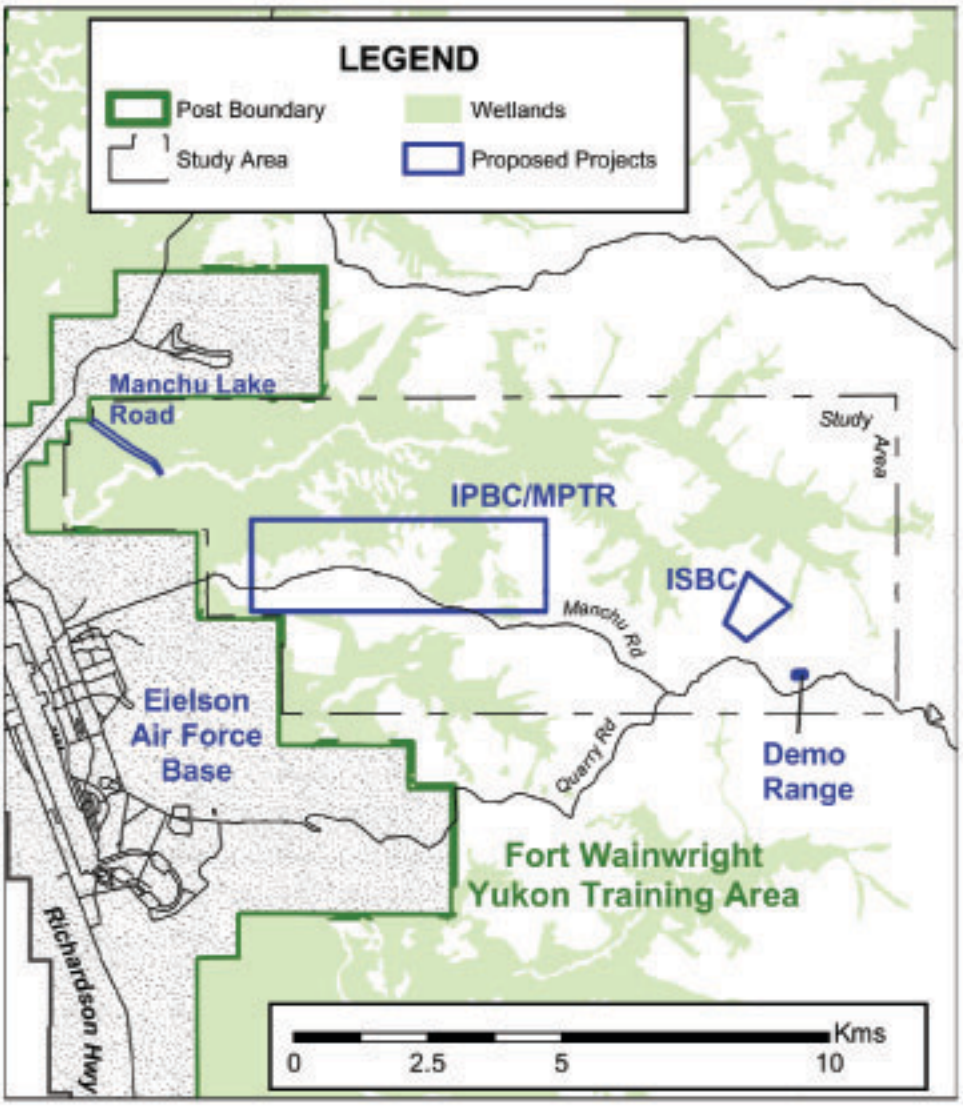
Special Interest Areas

Fort Wainwright has several areas with special natural features. They harbor sensitive or unique wildlife species or represent unique plant communities (Natural Resources Branch 2002). The Proposed Action would not affect special interest areas on Fort Wainwright.

Fire Management

Portions of the sites for the proposed projects on the Main Post Small Arms Complex burned in 1995 and 1999 due to small wildfires restricted to the general Small Arms Complex. Project sites on Main Post are within areas designated for *Limited Fire Management* (Natural Resources Branch 2002). Since the Proposed Action would not change munitions fired in these areas, there should be no impact of proposed projects on fire management or wildfire risks. Due to increased wildfire dangers associated with small arms firing, above natural frequencies of fires can be anticipated to continue in the general downrange area of these proposed ranges. Due to low fuel buildups, these fires should not pose a significant fire danger risk to surrounding lands.

Figure 3.5.2c. Wetlands at Proposed Project Sites on Yukon Training Area



Lands proposed for projects on Yukon Training Area have no recorded wildfires in recent years. Due to increased wildfire dangers associated with small arms firing, above-natural frequencies of fires can be anticipated to occur in the general downrange area of these proposed ranges. Most of the western half of Yukon Training Area, where the proposed projects would be located, is in a fire management area classified as *Full Fire Management*. The nearest fire protection crews are located on Eielson Air Force Base.

Fire Risk Assessments

A ***risk index rating*** provides general information about potential fire behavior at proposed sites. Risk indices depend on site-specific vegetation and topography.

High - During dry and warm weather conditions, wildfires ignite easily, may burn with high intensity, and may have a high potential for rapid fire spread. Typical fire behavior may include crown fires, an active flaming front, and spotting as far as ½ mile ahead of the flaming front.
Moderate - Under dry and warm weather conditions, fires burn with moderate intensity and have a moderate potential for fire spread. Typical fire behavior may include creeping, short runs of active fire in fuel jackpots, and occasional torching.
Low - During dry and warm weather conditions, fires burn with low intensity and have low potential for fire spread. Fire behavior may include smoldering and intermittent creeping.

Fire risk assessments of the proposed MPTR/IPBC were made by the USARAK Forester and two Fuels Management Specialists from the Alaska Fire Service, Bureau of Land Management[1]. The MPTR/IPBC has a risk index of ***Moderate*** due to the availability of fuels; fire weather and seasonal indices in the local area can place the existing range in the ***High*** category in extreme conditions. The MPTR/IPBC is a mixture of black spruce lowland and white spruce upland areas, and the majority of the proposed range area is a hardwood forest. Historically, ignitions in the area are in the grass understory due to military operations. The spruce component will be available to burn from late spring into July. The ISBC and Light Demolition Range proposed sites have similar fire risks.

Wildfire Mitigation Measures
A ***fire danger rating system*** (described in USARAK Regulation 350-2) would be used to minimize fire risks from range operations at all proposed sites during high fire danger periods. The following site-specific mitigation measures would also be used.

Multi-Purpose Training Range/Infantry Platoon Battle Course
1) Coordinate live fire training exercises when fire weather and indices are low to help prevent the spread of wildfire.
2) Locate operational areas within the hardwood forest (*i.e.*, not in black spruce) to minimize risks of wildfire.
3) Plan and implement a prescribed fire within the area to minimize risks of wildfire.
4) Create defensible space around existing and new structures.

Alternative 1 – No Action
Floral resources would not be affected by the No Action Alternative.

3.6 Faunal Resources

Additional information regarding faunal resources on Fort Wainwright is within the Integrated Natural Resources Management Plan (Natural Resources Branch 2002). Unless stated otherwise, below information is from that source.

[1] Dan Rees, Environmental Forester, Fort Wainwright; Chris Hays, Fuels Management Specialist, Southern Fire Management Zone, Alaska Fire Service; and Mark Musitano, Fuels Management Specialist, Military Fire Management Zone, Alaska Fire Service.

3.6.1 Existing Conditions

Most vertebrate species indigenous to central Alaska can be found on Fort Wainwright. A list of verified species is located in Appendix F of the Integrated Natural Resources Management Plan (Natural Resources Branch 2002).

3.6.1.1 Mammals

Game species found on Fort Wainwright are managed by the Alaska Department of Fish and Game, which monitors these species to determine population status, reproductive success, harvest and home ranges. The Alaska Department of Fish and Game sets bag limits and seasons for these species.

Fort Wainwright is included in the Alaska Department of Fish and Game, Game Management Unit 20, which supports the state's largest moose (*Alces alces*) harvest. Although not considered good winter moose habitat, Tanana Flats Training Area supports high concentrations during spring and fall and is the largest known moose calving area in interior Alaska (Nakata Planning Group 1987). Moose are present on Main Post and in larger numbers on Yukon Training Area.

Fort Wainwright is part of the historic range of the Fortymile caribou (*Rangifer tarandus*) herd, but rarely are caribou now found on the installation. During the early 1900s, this herd was the largest in Alaska and one of the largest in the world, ranging over 85,000 square miles. In 1920, the herd was estimated at 568,000, but herd size fell to 10,000-20,000 in the 1930s. The herd grew to perhaps 60,000 in 1956, but it decreased to about 6,500 by 1973, probably due to overharvesting, unfavorable weather, and wolf predation. By 1990, the herd had increased to about 22,000 caribou and has remained stable until 1995. In 1995 the herd began to increase and by 2000, the herd was estimated at 35,500. No caribou have been taken from Fort Wainwright in recent years.

According to the Alaska Department of Fish and Game, there are three wolf (*Canis lupus*) packs whose range may include Army lands in the Tanana Flats. Black bears *(Ursus americanus*) and grizzly bears *(Ursus arctos*) are found throughout Fort Wainwright.

Small mammals play important ecological roles as secondary consumers and as prey for a variety of predators. Small mammals that are inhabitants of Yukon Training Area are listed in Appendix F, Integrated Natural Resources Management Plan (Natural Resources Branch 2002).

Furbearers on Fort Wainwright include the marten (*Martes americana*), lynx (*Lynx canadensis*), beaver (*Castor canadensis*), and others. Furbearers are trapped during winter on Fort Wainwright.

3.6.1.2 Birds

During migration periods, more than 300,000 cranes and 20,000 geese, ducks, and swans pass through the general Tanana River lowland area. Wetland complexes, ponds and lakes of the Tanana Flats Training Area may provide important staging sites for some migrating waterbirds.

3.6.1.3 Fish

The Chena and Salcha rivers are important spawning areas for chum salmon (*Oncorhynchus keta*), Arctic grayling (*Thymallus arcticus*), and king salmon (*Oncorhynchus tshawytsha*). All of these species inhabit the Tanana River seasonally. Fewer species are found in the Tanana River, due to

its higher silt load (Nakata Planning Group 1987). River Road Pond (formerly Sage Hill Pond), Monterey Pond, Weigh Station 1, Weigh Station 2, and Manchu Lake are stocked with fish by the Alaska Department of Fish and Game.

3.6.1.4 Reptiles and Amphibians

Wood frogs (*Rana sylvestris*) are the only amphibians on Fort Wainwright. There are no reptiles.

3.6.1.5 Special Status Fauna

Appendix C has a copy of a letter from the U.S. Fish and Wildlife Service confirming that no federally-listed species are known to reside or breed on Army lands in Alaska and that consultation under Section 7(a)(2) of the Endangered Species Act, 16 USC 1536(a)(2) is not required. The American Peregrine Falcon (*Falco peregrinus anatum*) was recently de-listed from endangered species status. Though not known to nest on Fort Wainwright, it is an infrequent migrant.

A federally listed threatened species in the lower 48 states, the Bald Eagle (*Haliaeetus leucocephalus*), is locally common. It nests along the Salcha and Tanana Rivers (Ritchie and Rose 1998). The Golden Eagle (*Aquila chrysaetos*) is a resident of forest and alpine habitats of the installation (Nakata Planning Group 1987).

Seven birds are listed as state-sensitive (Center for Ecological Management of Military Lands Undated), the Gray-cheeked Thrush, Blackpoll Warbler (*Dendroica striata*), American Peregrine Falcon, Golden Eagle, Olive-sided Flycatcher (*Contropus borealis*), Arctic Peregrine Falcon (*Falco* p*eregrinus tundrius),* and Townsend's Warbler (*Dendroica townsendii)*. The Gray-cheeked Thrush was commonly noted in surveys (Bureau of Land Management and U.S. Army 1994). All but the Arctic Peregrine Falcon have been confirmed on Fort Wainwright (Center for Ecological Management of Military Lands Undated).

Two species confirmed on Fort Wainwright are considered sensitive by the U.S. Forest Service, the Osprey (*Pandion haliaetus*) and Trumpeter Swan *(Cygnus buccinator*). The U.S. Fish and Wildlife Service, Office of Migratory Bird Management maintains a list of *Migratory Nongame Birds of Management Concern in the United States*. Species listed for Alaska that may occur on Fort Wainwright are Trumpeter Swan, Common Loon (*Gavia immer*), Northern Harrier (*Circus cyaneus*), Northern Goshawk (*Accipter gentiles*), Olive-sided Flycatcher, Alder Flycatcher (*Empidonax alnorum*), Gray-cheeked Thrush, and Blackpoll Warbler.

Eighteen species confirmed on Fort Wainwright are included by the Boreal Partners in Flight Working Group as target or priority species for monitoring because of declines in populations noted across the Americas. There are no legal requirements to manage these species, although all migratory bird species are afforded some protection under the Migratory Bird Treaty Act.

3.6.2 Environmental Consequences

Proposed Action

Areas affected by the Proposed Action are not classified as a moose or waterfowl concentration area (Natural Resources Branch 2002). Moose habitat could be enhanced by the Proposed Action due to actions to maintain low vegetation on firing ranges. There are no known significant effects

of construction or operation of any proposed ranges on populations of mammals, birds, fish, or amphibians.

The American Peregrine Falcon migrates through the area and would not be affected by the Proposed Action. There are no Eagle (Bald or Golden) nests in areas potentially affected by the Proposed Action. Affected areas are not used for nesting by raptors due to topography (no cliffs) and a lack of large trees.

Moose Creek supports resident fish, including Arctic grayling and whitefish. Bridge work over Moose Creek would be coordinated with the Alaska Department of Fish and Game and designed to ensure adequate fish passage.

Alternative 1 – No Action
Faunal resources would not be affected by the No Action Alternative.

3.7 Floodplains

3.7.1 Existing Conditions
The Main Post is within the floodplains of the Chena and Tanana rivers. The Chena River Lakes Flood Control Project was completed in 1979 by the U.S. Army Corps of Engineers to protect human settlements in the floodplain (U.S. Army Corps of Engineers 2001). Proposed project sites on Yukon Training Area are near floodplains on Moose Creek and near Manchu Lake.

3.7.2 Environmental Consequences

Proposed Action
The Chena River Lakes Flood Control Project provides flooding protection for the proposed project site. Floodplains would not be significantly affected by the Proposed Action. Bridge work over Moose Creek would be coordinated with the Alaska Department of Fish and Game and designed to accommodate anticipated flood levels and ensure adequate fish passage.

Alternative 1 – No Action
Floodplains would not be affected by the No Action Alternative.

3.8 Land Use

3.8.1 Existing Conditions

3.8.1.1 Land Use and the Military Mission

Military Use
Military land use on Fort Wainwright can be separated into two broad groups: urban areas and training areas. Urban areas include most developed areas on the installation. Training areas also can be separated into two broad categories - maneuver training and weapons training.

Maneuver training is conducted primarily in training areas. A training area is space for ground and air combat forces to practice movements and tactics as specified in the unit's Army Training and Evaluation Program. Different unit types may work in support of one another (combined arms), or the unit may operate on its own to practice a specific set of Army Training and Evaluation Program tasks. Included in these areas are bivouac sites, base camps, drop zones, artillery and mortar firing points, and other miscellaneous training areas. Each training area is managed and scheduled by Range Control.

Weapons training also has land-based requirements. Weapons' training occurs primarily on firing ranges, and munitions from firing ranges land in surface danger zones or impact areas. Military land use categories on Fort Wainwright are shown in Figure 3-1 with descriptions for each military land use category listed in Table 3-3 of the Integrated Natural Resources Management Plan (Natural Resources Branch 2002).

Natural Resources Management Use

There are a number of natural resources management land uses on Fort Wainwright. Integrated Training Area Management, forest management, fish and wildlife management, habitat management, wetland management, watershed management, fire management, endangered species management, special interest areas management, pest management, cultural resources management and minerals management all have spatial components and land-based requirements. These land-uses and their associated programs and projects are discussed in chapters 3-6 of the *Integrated Natural Resources Management Plan* (Natural Resources Branch 2002).

Recreation and Subsistence Use

Hunting, trapping, fishing, off-road vehicle use, skiing, boating, and cutting firewood all have land-based requirements. Maps showing areas open for various recreation and subsistence activities are found in Section 6.2.4 of the *Integrated Natural Resources Management Plan* (Natural Resources Branch 2002).

Commercial Use

Commercial timber sales is the primary potential commercial use. Maps showing potential areas for commercial timber sales are found in Section 5.2.4 of the *Integrated Natural Resources Management Plan* (Natural Resources Branch 2002).

Rights-of-way, Easements, and Leases

There are a number of existing rights-of-way, easements, and leases on Fort Wainwright. The Alaska pipeline, the Richardson Highway, GVEA Intertie, and other utility corridors all have land-based requirements (Natural Resources Branch 2002).

3.8.1.2 Surrounding Land Use

Fort Wainwright is within the Fairbanks North Star Borough, which is lightly populated with several scattered developments. Fairbanks, on the western boundary of Fort Wainwright, is the largest city in the Borough with a population of over 30,000, making it the second largest city in the state (1990 census data). The main cantonment area of Fort Wainwright lies within Fairbanks

city limits. Residential developments have grown eastward, abutting the installation boundary along the North Post, the main cantonment area, and the western side of the Small Arms Complex (site of three proposed projects).

Other developed areas near the Main Post include Fox and Chatanika to the north, and North Pole and Eielson Air Force Base to the southeast. Donnelly Training Area is about 90 miles to the southeast. The George Parks Highway, Steese Highway, Richardson Highway, Alaska Railroad, and the Trans-Alaska Pipeline bisect the area.

The general area within Yukon Training Area that is proposed for the MPTR/IPBC, ISBC, Light Demolition Range, and Manchu Lake upgrade is bordered Eielson Air Force Base to the west and southwest. The other borders are interior portions of Yukon Training Area.

About two miles to the north of the preferred site for the MPTR/IPBC is a seismic array, known as the Eielson Unattended Remote Operation. The array is operated and maintained by the Air Force Technical Application Center's U.S. Atomic Energy Detection System to support national objectives related primarily to the Comprehensive Nuclear-Test-Ban Treaty. The array covers about 23,000 square acres and includes seismic instruments and a microwave tower.

Just to the west of the preferred site for the MPTR/IPBC is an area known as Winter Camp. Winter Camp is used as a staging area for military exercises and training opportunities.

3.8.2 Environmental Consequences

Proposed Action

Main Post

All land for facility construction aspects of the Proposed Action is classified as Weapons Training Land, Firing Ranges. Impact areas for the proposed ranges, including target locations, are classified as Weapons Training Land, Non-Dudded Impact Areas (Natural Resources Branch 2002). Implementation of the Proposed Action would maintain lands within existing military use categories, which is expected since the area's use as a Small Arms Complex would not change.

Lands proposed for use for these projects have no public access, including no hunting (Natural Resources Branch 2002), and this would not change. There is no commercial use potential in affected lands. There would be no impacts on rights-of-way, easements, or leases. Surrounding land use would not be affected.

Yukon Training Area

All land for facility construction aspects of the Proposed Action is classified as Training Areas, Maneuver Training Areas, Maneuver Areas (Natural Resources Branch 2002). Implementation of the Proposed Action would maintain lands within the Training Areas category, but subcategories would shift. In general, all project sites would become Weapons Training. Within the Weapons Training category, range facilities would be classified as Firing Ranges, and downrange portions of ranges would become Non-Dudded Impact Areas.

Munitions would be fired across Manchu Road. Skyline Road is well beyond the surface danger zone for munitions to be used and would not be affected. Gates would be installed, and access to

the range would be denied when in use. Guards would be stationed at the site when the range is in use. Those traditionally using the area would no longer be able to have free access to the site. USARAK would inform residents and employees of both Fort Wainwright and Eielson Air Force Base of land use restrictions and dangers.

Based upon coordination with the Air Force Technical Application Center's U.S. Atomic Energy Detection System, construction and use of the proposed range would have little to no affect on the existing seismic array.

Alternative 1 – No Action
Land use on Fort Wainwright would not be affected by the No Action Alternative.

3.9 Cultural Resources

Alaska's earliest inhabitants were nomadic hunters. They arrived in Interior Alaska at least 13,000 years ago. At that time the region was a treeless steppe-tundra environment, supporting migrating herds of grazing animals, such as bison, horse, and mammoth, that these early peoples preyed upon (Péwé 1975, pp. 87-88, 99-101).

Archaeologists generally divide Interior Alaska's prehistory into three broad archaeological themes. Sites representing each of these have been discovered on Fort Wainwright.

- The Paleoarctic Tradition (12,000-8,000 years ago) represents the earliest human group known to inhabit Alaska. Artifacts recovered from three sites near the Blair Lakes Archaeological District on Fort Wainwright suggest a prehistoric habitation of 10,600 years. Almost 90% of all Paleoarctic Tradition habitation sites identified on Fort Wainwright are located on ridges, hills, bluffs and terraces (Reynolds 1986, pp. 126-127).
- Nine sites on Fort Wainwright have been assigned to the Northern Archaic Tradition (6,500-1,000 years ago), all located on buttes south of the cantonment area in Tanana Flats.
- The Salcha, Chena, Goodpaster, and Wood River bands of the Tanana Athabaskans used certain parts of Fort Wainwright (McKennan 1981, Fig. 1, p. 564). Several villages have been reported on or near Fort Wainwright. One occupied by the Wood River band is said to have been located in the southern part of Fort Wainwright but has not been found (Reynolds 1986, p. 11; Dixon *et al*. 1980, pp. 57-58). The Blair Lakes Archaeological District on Fort Wainwright is believed to relate to the prehistory of the Athabaskan Tradition (2,500-150 years ago).

Russian fur traders entered Interior Alaska from the south in the 1810s (Hanable 1982, p. 29). British traders from the east established Fort Yukon in 1847. Contact between Tanana Athabaskans and white traders steadily increased after the 1860s. With the United States purchase of Alaska in 1867, control of trading stations and the fur trade passed to Americans (Dixon *et al.* 1980, p. 60; McKennan 1981, pp. 566-567).

Natives began to construct permanent houses, abandoning their traditional seasonal hunting. Several village sites associated with the early contact period have been reported near Fort Wainwright (Reynolds 1986, p. 11).

In 1886 gold was discovered on the Fortymile River, bringing white settlers into the Tanana region. In 1894 gold was discovered on Birch Creek, bringing another influx of settlers near present day Fairbanks (Andrews 1975, p. 22; Anonymous 1997, pp. i.2-3). In 1902 a trading post was established at the future town site of Fairbanks. In 1903 gold was discovered southwest of Fairbanks. Within six years the population of Fairbanks swelled to over 15,000 (Historic Preservation Commission of the City of Fairbanks and the Fairbanks North Star Borough 1995, p. 5; Naske and Rowinski 1981, p. 57).

No mining activities have been identified in the project area. Based on an early mining study performed by USARAK, no significant mining occurred on military management lands (Neely 2000).

Riverboat was the primary means of getting people and supplies into the Interior during the early years. Boats traveled to Fairbanks from June 1 through mid-October (Matheson and Haldeman 1981, p. 31).

The U.S. Army developed the Valdez-Fairbanks Trail to open an overland route to Fairbanks and Interior mining camps from Valdez to Eagle. In succeeding years the trail was upgraded to a wagon road; in 1913 the first automobiles used the road. Roadhouses along the route catered to pioneers. Three roadhouses have been reported on Fort Wainwright: Murray's Roadhouse, Pile Driver or 30-Mile Roadhouse, and another roadhouse of uncertain location or affiliation.

Increased mining and trading in Alaska led the Army to consider the need for better communications. The Washington-Alaska Military Cable Telegraph System was constructed between 1899 and 1906. One section crossed the Fortymile region east of Fort Greely. The U.S. Army Signal Corps established a telegraph station three miles from the mouth of the Salcha River in 1902 and another at Big Delta in 1904 (Dixon *et al*. 1980, p.63; Andrews 1975, p. 28; Cloe and Monaghan 1984, p. 1).

The first aircraft to fly in Alaska flew in Fairbanks in 1913 (Cloe and Monaghan 1984, p. 2). By 1920 the Assistant Chief of the U.S. Army Air Corps called attention to Alaska's strategic location. On March 31, 1937 Roosevelt signed Executive Order 7596, officially withdrawing 960 acres near Fairbanks for an airfield (Cloe and Monaghan 1984, p. 21; Anonymous 1937). In August 1939 work began on Ladd Field.

After the Japanese attack on Pearl Harbor on December 7, 1941, Ladd Field was placed on alert status. Japan's invasion of the Aleutians in June 1942 had the most impact on Ladd Field in terms of its growth. Activities of the Sixth Air Depot Group, the Cold Weather Test Station, and later in 1942, the Air Transport Command resulted in a major expansion of facilities at Ladd Field.

Ladd Field's mission as the North American terminus of the Alaska-Siberia Lend-Lease program route was its most important contribution to World War II. From 1942 to 1945 Soviet pilots received training at Ladd Field in U.S. aircraft before flying them across Siberia to the Eastern Front. Almost 8,000 aircraft were delivered over this route. In recognition of the national significance Ladd Field had during World War II, the National Park Service designated Ladd Field as a National Historic Landmark in 1984.

In 1946 the Strategic Air Command organized its first air unit at Ladd Field to begin developing a system of Polar navigation (White 1994, pp. 3-18). After the formation of the U.S. Air Force in 1947, Ladd Field was designated Ladd Air Force Base. As the northern hub for Air Force activities

in Alaska, missions that Ladd Air Force Base was responsible for included air defense (aircraft control and warning, fighter-interceptors/ground control intercept), strategic reconnaissance (photographic, electronic, long-range detection, weather), search and rescue, logistic support of northern region auxiliary military facilities (forward bases, AC&W sites, DEW Line, Clear BMEWS, MIDAS, others), research (cold weather testing, Arctic-Aeromedical Laboratory, ice stations, polar navigation, support of contracted research), communications, Strategic Air Command support, tactical ground support, training, and classified/unknown missions (Price 2000).

The federal government put more than $250 million in construction activities on Ladd and Eielson Air Force bases and approximately $40 million in annual wages between 1950 and 1955 (Cole 1999, p. 163). The City of Fairbanks was ill prepared to meet demands of the swelling population drawn to the area by high wages in construction on the bases. This short period of economic prosperity literally changed the Fairbanks skyline and quality of life.

Although an Air Force Base, the Army's mission at Ladd continued. Antiaircraft artillery batteries were installed around Fairbanks in the early 1950s to support Ladd's defense mission. These were replaced by the Nike missile system in 1959 (Denfield 1988, pp. 2-5). The Army's Cold Weather Testing and training missions were shifted from Ladd Field (Ladd Air Force Base) to Fort Greely in the mid-1950s when Fort Greely was reactivated. The primary Army force, however, was stationed on Eielson Air Force Base, 26 miles east of Ladd Air Force Base (Price 2000). The Ladd Air Force Base Historic District, centered on the runways, has been determined eligible for inclusion in the National Register of Historic Places.

In 1961 the U.S. Air Force moved its operations to Eielson AFB, 26 miles southeast of Fairbanks, and transferred Ladd AFB to the Army. Ladd AFB was renamed Fort Wainwright. From 1963 until 1975 the Vietnam War dominated the American military. During this time, improvements at Fort Wainwright focused on equipment modernization, rather than new construction.

With the introduction of the Intercontinental Ballistic Missile in the 1960s, Fort Wainwright's antiaircraft mission diminished significantly. Fort Wainwright's primary mission became peacetime deployment to support U.S. interests worldwide, the defense of Alaska, and coordination of Army National Guard and Reserve activities in the state. In the 1970s Arctic training began to be emphasized with exercises conducted annually.

The 1960s and 1970s saw a steady decrease in the military population stationed in the Fairbanks North Star Borough. The military population hit a high of 15,000 (both Air Force and Army) in 1955 and steadily decreased to 5,266 (2,550 on Fort Wainwright) by 1990. In contrast, the Borough's population steadily increased from 41,089 to 77,720 over the same period. In 1964 the federal government employed 25.4% of the Borough's population.[2] This steadily decreased to just over 9% by the end of the Cold War (Anonymous 1990). The decrease in military personnel on bases and decrease in spending levels are also reflected in the decrease in the construction industry

[2] Information is not available to identify employment per federal agency. Federal agencies consist of Defense; Transportation; Interior; Health, Education and Welfare; Postal Service; Commerce; Agriculture; and Treasury.

where 33% of the Borough's population was employed in the industry to 7% by the end of the Cold War.

Fairbanks economy stagnated until the discovery of oil on the North Slope in late 1967 that created a very short speculative boom. Delays in developing the oilfields, due to Native land and environmental issues, kept the local economy depressed. With the final permitting of the field development and associated pipeline and resolution of Native lands issues, construction activities beginning in 1974 brought another major boom period to Fairbanks, again resulting in causing major changes on every economic, governmental and social levels of the region (Cole 1999, pp. 201-208).

3.9.1 Existing Conditions

Less than two percent of Fort Wainwright has been surveyed for archeological sites, and 70 sites have been found. Three districts (which include 47 sites) and one other site have been determined to be eligible for inclusion in the National Register of Historic Places by the Army and State Historic Preservation Office. All Main Post buildings have been inventoried. One National Historic Landmark, Ladd Air Force Base Historic District (now called Wainwright Army Airfield), has been formally designated as eligible for inclusion in the National Register (Natural Resources Branch 2002).

Surveys have been generally very site specific, often required for planned construction projects. Most cultural resources sites have been found in the lowland spruce/hardwood vegetation community. Only a relatively small portion of Fort Wainwright has high sensitivity with regard to cultural resources, including the Main Post area. The rest of the installation is low to moderate in sensitivity.

3.9.2 Environmental Consequences

Proposed Action

In summer 2002 archaeological survey crews, comprised of archaeologists employed by the Center for Environmental Management of Military Lands, Colorado State University, conducted a pedestrian survey of proposed range construction areas. Surveys encompassed a larger area than proposed range construction footprints to ensure coverage of areas that may incur secondary impacts during construction or use. No archaeological resources or historic sites were identified within the Proposed Action sites.

Appendix D has a copy of letters from the Alaska State Historic Preservation Officer concurring with USARAK's findings that no properties either eligible or potentially eligible for the National Register of Historic Places would be affected by the Proposed Action. The consultation meets USARAK obligations under Section 106, National Historic Preservation Act of 1966 (as amended, Public Law 89-665; 16 USC 470 *et seq*.).

Alternative 1 – No Action

Cultural resources would not be affected by the No Action Alternative.

3.10 Hazardous Waste/Materials

3.10.1 Existing Conditions

All of Fort Wainwright was listed on the Environmental Protection Agency's National Priorities List on August 30, 1990 under the Comprehensive Environmental Response, Compensation and Liability Act of 1980. In spring 1992 the Army, Environmental Protection Agency, and the Alaska Department of Environmental Conservation signed a Federal Facility Compliance Agreement, which requires a thorough investigation of suspected hazardous waste source areas and remediation actions to protect public health. USARAK is in the process of clean-up activities under an Installation Restoration Plan for Fort Wainwright (U.S. Army Corps of Engineers 2001).

3.10.2 Environmental Consequences

Proposed Action

There are no known hazardous waste sites on proposed project sites. During the exploratory geophysical survey conducted in 1998 on the general area, no on-site or subsurface contamination was observed (R&M Consultants 1999). The likelihood to encounter contamination is remote. If contamination is encountered, appropriate measures would be taken to remediate the site.

Any discovery of hazardous material contamination would require appropriate regulatory coordination and compliance. Construction digging has the potential to expose contaminated soil from historic use of sites. Any discovered contaminated soils during construction would be remediated using methods agreed upon by USARAK, Environmental Protection Agency, and the Alaska Department of Environmental Conservation. Facility operation is not anticipated to generate hazardous substances beyond those already occurring on the area due to operation of small arms ranges.

Neither soil nor groundwater would be removed from construction sites without written approval from an authorized USARAK representative. All operations involving hazardous waste would be accomplished in accordance with USARAK Pamphlet 200-1, *Environmental Quality: Hazardous Waste, Used Oil, and Hazardous Materials Management*.

Alternative 1 – No Action

No additional hazardous wastes would be generated under the No Action Alternative beyond those already being generated there.

3.11 Outdoor Recreation

3.11.1 Existing Conditions

Fort Wainwright is managed for a number of different types of public recreational use. USARAK uses the following classification system to classify recreation areas on the installation (Natural Resources Branch 2002).

> ***Open recreational areas*** are open to all types of recreation during all seasons, unless closed by the Fort Wainwright Range Control Office.

Modified recreational areas are open to hunting, fishing, trapping, hiking, skiing, and berry picking, but they do not support and are not open to any type of off-road vehicle activity, except in the winter.

Limited recreational areas are open to hunting, fishing, trapping, hiking, skiing, and berry picking, but they do not support and are not open to any type of off-road vehicle use at any time.

Off-limits areas are restricted to public access and use year-round.

Motorized Watercraft Trails. In summer all motorized watercraft may use only existing naturally occurring channels, watercourses, and waterways of the Wood and Tanana rivers and the Salchaket Slough. No one may enter any impact area. Motorized watercrafts are not permitted to leave the open water channels of the Tanana and Wood rivers or any of the sloughs and creeks. In the winter, any type of off-road vehicle may use defined trails as long as water is frozen.

3.11.2 Environmental Consequences

Proposed Action
Lands proposed for use for these projects on Main Post have no public access (off-limits designation), including no outdoor recreation (Natural Resources Branch 2002), and this would not change. Proposed ranges on Yukon Training Area would be closed to outdoor recreation during range operations or other military activities that are incompatible with outdoor recreation, the same as the existing policy, Section 3.11.1. Temporary closures would occur on more land than is currently closed due to new ranges.

Alternative 1 – No Action
Outdoor recreation would not be affected by the No Action Alternative.

3.12 Socio-economic Conditions

3.12.1 Existing Conditions

As of October 31, 2001 there were 4,047 military personnel stationed Fort Wainwright; these personnel had 5,233 family members. An additional 662 retirees with 861 family members were considered part of the Fort Wainwright demographics. The post employed 644 Department of Defense civilians and 1,109 non-Department of Defense civilians. The Fort Wainwright school had 690 students and 80 staff and faculty. Total payroll for Fiscal Year 01 was $204,761,939, and other Fort Wainwright expenditures amounted to $137,687,127 for that year.[3]

3.12.2 Environmental Consequences

Proposed Action
The Proposed Action would result in about $50 million for design and construction of proposed facilities. Construction could temporarily increase population and employment levels, particularly in warmer months when it is common practice for construction workers to temporarily move to Alaska. Operation of the facilities would not significantly permanently impact demographic numbers or characteristics since such

[3] USARAK Command Information Card, FY 02, Management Service Division, DCSRM, Fort Richardson, AK.

operation does not significantly impact military or civilian employment at Fort Wainwright. The Proposed Action would not affect public facilities, utilities, transportation systems, or services.

Alternative 1 - No Action
The No Action Alternative would not affect population demographics, public facilities, utilities, transportation systems, or services.

3.13 Visual Resources/Aesthetics

3.13.1 Existing Conditions
Vegetation and other conditions that comprise visual resources/aesthetics at Fort Wainwright are described in other sections of this environmental assessment and in greater detail in the Integrated Natural Resources Management Plan (Natural Resources Branch 2002).

3.13.2 Environmental Consequences

Proposed Action

Main Post
The Proposed Action for the proposed Sniper Field Fire Range Project, MOUT and Range Upgrade Facility, modified Record Fire Range, Tanana River observation towers, Small Arms Complex borrow pit, Machine Gun 10/50 Zero Range, Hand Grenade Qualification Course, reconfigured target array on MK 19 Range, co-location of Military Police Combat Pistol Qualification and Qualification Course, AT-4 Range pad expansion, Consolidated Range Maintenance Facility, and all-season local firing points would be confined to Fort Wainwright Main Post. The primary use of proposed project areas at Fort Wainwright is small arms ranges that support military training. Proposed construction projects are fully consistent with this use. There would be no significant changes visual resources/ aesthetics in these project areas with exception of the two observation towers, which would somewhat affect the skyline view from some points.

Yukon Training Area
The Proposed Action for the MPTR, IPBC, ISBC, Light Demolition Range, and Manchu Lake Road upgrade would be confined to the western portion of Yukon Training Area. Primary uses of this area are military maneuver and related uses that support military training. Proposed range projects would be different from military maneuver in terms of live-fire, but it would be consistent with military training in general.

Lands proposed for proposed ranges are relatively natural ecosystems. There is significant tree cover in proposed sites. Trees that could be destroyed by live-fire that create safety issues or are located on construction footprints would be replaced with lower growing vegetation, and range support facilities (parking areas, control towers, ammo breakdown facilities, access roads, targets, etc.) would somewhat detract from the natural environment. There would be some short-term, construction-oriented loss in visual resources at the sites, but site improvements associated with the projects and natural revegetation would partially mitigate this.

Alternative 1 - No Action
The No Action Alternative would not affect visual resources or aesthetics.

3.14 Cumulative Impacts

A cumulative effect is defined as an effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place locally or regionally over a period of time.

Proposed Action

Since the Proposed Action on Main Post does not involve land use or general military activities changes (lands continue to be used for small arms ranges by similar numbers of troops), there are no cumulative impacts associated with the Proposed Action beyond those already occurring at the Small Arms Complex.

Vegetation impacts would be cumulative at proposed sites on Yukon Training Area due to taller forms of natural vegetation (trees and shrubs) being locally replaced by a lower growing form of natural vegetation (grasses and low growing woody species). Soil integrity would be damaged at facility sites, and this loss would remain indefinitely. Regardless of the efficiency of operating the proposed ranges, there would be slightly more energy required, which would result in slightly more emissions (probably undetectable) from the energy plant.

Alternative 1 - No Action

The No Action Alternative would continue cumulative impacts associated with the Small Arms Complex (minor soil disturbance, temporary changes in vegetation, and very minor air quality impacts). There would be no cumulative impacts elsewhere.

3.15 Past, Present, and Reasonably Foreseeable Future Actions Considered on a Cumulative Basis

3.15.1 Range Development

The Fort Wainwright range area, by definition, is the preferred location for the development of facilities that directly support field-oriented training. Such facilities include firing and nonfiring ranges with support facilities, hardened assembly areas, improved roads, drop zones, combat landing strips, firing points, communications and electric service lines, and similar facilities. Modernization and facilities upgrade requirements will continue over time. Thus, range upgrades/additions/demolitions will continue on a regular basis, as they have in the past. Due to rapidly changing technology, military tactics and strategy, and world events affecting military activities, it is difficult to predict some of these changes beyond a few years.

The Proposed Action is another action in this process. The Main Post projects would continue the development of the Fort Wainwright range area, particularly the Small Arms Complex, which is a cumulative impact. However, this development is planned within the *Range and Training Land Program, Development Plan* (Nakata Planning Group, LLC 2001), avoids significant environmental impacts, has adequate mitigation, and is required to support the USARAK military mission at Fort Wainwright. Military planners recognize that range development beyond current levels, in terms of total acreage, results in a loss of maneuver land, which is critical to military training. Thus, there will continue to be efforts to balance range development with the need for undeveloped lands with natural environments for realistic maneuver training. The siting of many proposed ranges on existing range footprints (those within the Main Post) is another effort to continue to develop ranges with minimal impact on maneuver lands.

3.15.2 Military Mission Evolution

The USARAK military mission can be expected to continue to evolve, in some cases relatively dramatically, as the U.S. armed forces evolve in terms of military units, military equipment, and

tactics/strategies change to meet changing threats to U.S. security. Such changes are expected to continue in the future, as they have done so in the past. However, the nature of these changes with respect to changes at Fort Wainwright is difficult to predict due to rapidly changing technology, military tactics and strategy, and world events affecting military activities.

Proposed projects are examples of changes in training requirements that would result in additional and upgraded facilities at Fort Wainwright. The Sniper Field Fire Range and the Modified Record Fire Range are not new requirements, but the ranges would have targetry and data collection capabilities that were not possible a decade ago. The MOUT range complex with supporting facilities is more important today due to changing requirements for U.S. military response that involves conducting operations in urban environments. Some facilities associated with the MOUT ranges are relatively new designs, and they all use modern range technologies. The ISBC, IPBC, and MPTR are requirements based on changing world threats, and these ranges also would have targetry and data collection capabilities that were not possible a decade ago However, these particular projects and other smaller projects in the Proposed Action are planned, avoid significant environmental impacts, have adequate mitigation, and are required to support the USARAK military mission at Fort Wainwright.

4. SUMMARY OF EFFECTS AND CONCLUSIONS

4.1 Unavoidable Adverse Effects Should the Proposed Action Be Implemented

Some adverse effects due to construction cannot be avoided if the Proposed Action is implemented. Disturbance of soils and vegetation would occur, but almost all soils and vegetation affected on Main Post have a history of disturbance; all Main Post proposed sites are on areas previously or currently occupied by ranges. There would be some effects to wetlands, but any such impacts would be within limits of Section 404 permits, which would be obtained as needed. Short-term noise and air quality degradation would occur during construction, but neither would be significant or long-term. There is a potential for the generation or discovery of hazardous waste or materials; such waste or materials would be disposed of or remediated according to compliance requirements.

The below table summarizes potential effects for each alternative. Environmental effects would not be significant within the larger geographic and temporal context in which they would take place.

Table 4.1. Summary of Potential Environmental Consequences

Resource Area	Environmental Consequence*	
	No Action Alternative	Proposed Action
Geology	No effect	No effect
Soils	No effect	Negative on construction sites
Water Resources	No effect	No effect
Noise Environment	No effect	Slightly negative during construction; no effect on Main Post during operations; negative during range operation on Yukon Training Area but compatible with land uses
Air Quality	No effect	Slightly negative during construction, undetectable impacts during operation
Floral Resources	No effect	Slightly negative at construction sites
Wetlands	No effect	Slightly negative (within permit limitations)
Faunal Resources	No effect	Possibly slightly beneficial for moose; no known effects on other populations
Listed or Sensitive Species	No effect	No effect
Floodplains	No effect	No effect
Land Use	No effect	No effect on Main Post; no effect in terms of general classification (military training) on Yukon Training Area, but changes in

Resource Area	Environmental Consequence*	
	No Action Alternative	Proposed Action
		classification from maneuver land to ranges and associated non-dudded impact areas
Cultural Resources	No effect	No effect
Hazardous Waste/Materials	No effect	No effect
Outdoor Recreation	No effect	Negative effect only during range use at Yukon Training Area
Visual Resources/Aesthetics	No effect	Negative for all sites during construction; slightly negative after construction
Socioeconomic Environment	No effect	Beneficial during construction
Environmental Justice	No effect	No effect
Protection of Children	No effect	No effect
Cumulative Impacts	No effect	No effect

* No effect: Actions have no known demonstrated or perceptible impacts
Beneficial: Actions have apparent beneficial effects
Negative: Actions have apparent negative effects

4.2 Irreversible and Irretrievable Commitments of Resources

The Proposed Action would involve no irreversible or irretrievable commitment of resources other than the consumption of various expendable materials, supplies, and equipment associated with construction.

4.3 Conclusions

The Proposed Action to construct or upgrade various range facilities at Main Post and Yukon Training Area, Fort Wainwright, Alaska was analyzed by comparing potential environmental consequences against existing conditions. Findings indicate that implementation of the Proposed Action would result in either no significant adverse environmental consequences or temporary and relatively minor negative effects on each environmental area, except for socio-economic impacts, which would be temporarily beneficial. The affected environment would not be significantly or adversely impacted by proceeding with the Proposed Action. No significant cumulative effects would be expected.

Based on this environmental assessment, implementation of the Proposed Action (*i.e.*, range upgrade/expansion) would have no significant negative environmental or socioeconomic effects. The Proposed Action does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, preparation of an environmental impact statement is not required, and preparation of a Finding of No Significant Impact is appropriate.

5. PERSONS CONTACTED – USARAK AND OTHER ARMY

George Alexion, Installation Range Officer, Directorate of Plans, Training, Security, and Mobilization
Jeff Andrews, GIS Lab Coordinator, Environmental, Public Works
Mike Davis, GIS Specialist, Environmental, Public Works
Steve Drake, GIS Specialist (former), Environmental, Public Works
L.D. Fleshman, Fort Richardson Range Officer, Range Control, Directorate of Plans, Training, Security, and Mobilization
Kevin Gardner, Environmental Planner, Strategic Planning, Public Works
Marcus Geist, GIS Specialist, Environmental, Public Works
Frank Hall, Range Planner, Directorate of Plans, Training, Security, and Mobilization
Andrea Hunter, NEPA Technician, Environmental, Public Works
Doug Johnson, Chief, Environmental, Public Works
Amy Kearns, Environmental Protection Specialist (Air Quality), Environmental, Public Works
Gary Larsen, Chief, Fort Wainwright/DTA Natural and Cultural Resources, Environmental, Public Works
Scott Lehmkuhl, Fort Richardson Land Rehabilitation and Maintenance Coordinator, Environmental, Public Works
Deb Lipyanic, Fort Wainwright Integrated Training Area Management/Conservation Coordinator, Environmental, Public Works
Dave Patterson, Fort Wainwright Range Officer, Range Control, Directorate of Plans, Training, Security, and Mobilization
Mark Prieksat, Environmental Protection Specialist (Restoration), Environmental, Public Works
Bill Quirk, Environmental Scientist, Environmental, Public Works
Russ Sackett, Cultural Resources Manager, Environmental, Public Works
Catherine Stewart, Noise Specialist, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen, MD
Kerry Walsh, Fort Wainwright Land Condition Trend Analysis Coordinator (former), Environmental, Public Works

6. LIST OF AGENCIES AND EXTERNAL PERSONS CONTACTED

Cultural Resources Impacts
Judith E. Bittner, State Historic Preservation Officer, Anchorage, AK

Environmental Assessment Review
Alaska Department of Fish and Game, Fairbanks, AK
Bureau of Land Management, Fairbanks, AK
U.S. Army Corps of Engineers, Alaska District, Fairbanks, AK
U.S. Fish and Wildlife Service, Fairbanks, AK

7. REFERENCES

Alaska Natural Heritage Program. 2001. AKNHP vascular plant tracking list, April 2000 (http://www.uaa.alaska.edu/enri/aknhp_web/index.html). University of Alaska Anchorage, Anchorage, AK 99501 USA.

Andrews, E.F. 1975. *Salcha: An Athabaskan Band of the Tanana River and Its Culture*. M.A. Thesis, University of Alaska Fairbanks, Fairbanks, AK.

Anonymous. 1937. *960 Acres to be Utilized by Military*. Fairbanks Daily News-Miner, 3 April, Fairbanks, AK.

_____. 1982. *Alaska Interagency Fire Management Plan, Tanana/Minchumina Planning Area*. Signed by nine agencies or organizations. 148 pp.

_____. 1990. *Community Research Quarterly*. Vol. XIII, No. 3, 1990 and Vol. XIII, No 4, North Star Borough, Community Center, Fairbanks, AK.

_____. 1997. *Gold Fever in the North: The Alaska-Yukon Gold Rush*. Anchorage Museum of History and Art, Municipality of Anchorage, Anchorage, AK.

Bonito, L.J. 1980. *Final Environmental Impact Statement Concerning Proposed Land Withdrawal for the 172nd Infantry Brigade (Alaska) at Fort Wainwright*. Fort Wainwright, AK. 112 pp. + appendices.

Bureau of Land Management and U.S. Army. 1994. *Fort Wainwright Yukon Training Area. Resource Management Plan and Final Environmental Impact Statement*. Bureau of Land Management, Anchorage, AK. 109 pp.

Center for Ecological Management of Military Lands. Undated. *Alaska Army Lands Withdrawal Renewal*. Final Legislative Environmental Impact Statement, Volume 1. Prepared by Colorado State University, Fort Collins, CO for U.S. Army Alaska, AK.

Cloe, J.H., and M.F. Monaghan. 1984. *Top Cover for America: The Air Force in Alaska 1920 - 1983*. Anchorage Chapter - Air Force Association and Pictorial Publishing Company, Anchorage, AK.

Cole, D. 1999. *Fairbanks: A Gold Rush Town that Beat the Odds*. Epicenter Press, Fairbanks, AK.

Defense Mapping Agency. 1978. *Terrain Analysis (Including the Yukon Command Training Site and the Fairbanks Permafrost Station)*. Prepared by the Hydrographic/Topographic Center for Fort Wainwright, AK.

Denfield, C. 1988. *Nike Hercules in Alaska*. Alaska District, U.S. Army Corps of Engineers, Anchorage, AK.

Dixon, E.J., G.S. Smith, and D.C. Plaskett. 1980. *Archaeological Survey and Inventory of Cultural Resources, Fort Wainwright, Alaska*. University of Alaska Museum, Fairbanks, AK.

Hanable, W.S. 1982. *Alaska's Copper River: The 18th and 19th Centuries*. No. 21, The Alaska Historical Commission, Anchorage, AK.

Harding Lawson Associates. 1996. *Operable Unit 5, Draft Remedial Investigation Report, Fort Wainwright, Alaska, Volume 1*. HLA Project 32523 for U.S. Army Corps of Engineers, Alaska District. Anchorage, AK.

Historic Preservation Commission of the City of Fairbanks and the Fairbanks North Star Borough. 1995. *The Historic Preservation Plan: A Guide to Preservation Management*. Fairbanks, AK.

Jorgenson, M.T., K.E. Roth, M.K. Reynolds, M.D. Smith, W. Lentz, and A.L. Zusi-Cobb. 1998. *An Ecological Land Survey for Fort Wainwright, Alaska*. Final Report prepared for Cold Regions Research Engineering Laboratory, Hanover, NH by ABR, Inc., Fairbanks, AK.

Matheson, J., and B.F. Haldeman. 1981. *Historic Resources in the Fairbanks North Star Borough, Fairbanks, Alaska*. Fairbanks North Star Borough, Fairbanks, AK.

McKennan, R.A. 1981. *Tanana*. In *The Handbook of North American Indian: Subarctic, Vol. 6*. Smithsonian Institution, Washington, D.C.

Montgomery Watson Harza. 2001. *Final Installation Environmental Noise Management Plan, Fort Wainwright, Alaska*. Contract No. DACA 85-98-D-007, Delivery Order No. 0009. Prepared for Department of the Army, U.S. Army Corps of Engineers District, Alaska, Anchorage, AK.

Nakata Planning Group. 1987. *Master Plan Report*. Prepared for U.S. Army Corps of Engineers, Alaska District, Anchorage, AK.

Nakata Planning Group, LLC. 2001. *Range and Training Land Program Development Plan*. Prepared for U.S. Army Engineering and Support Center, Huntsville, AL under Contract No. DACA87-95-D-0021, Delivery Order No. 147. Colorado Springs, CO.

Naske, C.M., and L.J. Rowinski. 1981. *Fairbanks: A Pictorial History*. Donning Company Publishers, Norfolk, VA.

Natural Resources Branch. 2002. *US Army Alaska, Integrated Natural Resources Management Plan, 2002-2006, Volume 3, Fort Wainwright*. Draft final, 1 February. U.S. Army Alaska, Fort Wainwright, AK. 317 pp.

Neely, R. 2000. *Early Mining on Fort Wainwright and Fort Greely*. Center for Ecological Management of Military Lands, Colorado State University, Fort Collins, CO.

Péwé. 1975. *Quaternary Geology of Alaska*. U.S. Geological Survey Professional Paper 835, U.S. Government Printing Office, Washington, D.C.

Price, K. 2000. *Northern Defenders: Cold War Context of Ladd Air Force Base Fairbanks, Alaska, 1947-1961*. Center for Ecological Management of Military Lands, Colorado State University, Fort Collins, CO.

R&M Consultants, Inc. 1999. *Preliminary Geotechnical Investigation and Site Conditions Report, Proposed National Missile Defense Site, Eielson Air Force Base, Alaska*. Prepared for the U.S. Army Engineer District, AK.

Reynolds, G. 1986. *Inventory of Cultural Resources and Overview: Phase I.* In *Historic Preservation Plan for U.S. Army Lands in Alaska*. Prepared for the 172nd Infantry Brigade by: Alaska Heritage Group, Inc., Fairbanks, AK.

Rieger, S., D.B. Schoephorster, and E.E. Furbush. 1979. *Exploratory Soil Survey of Alaska*. Soil Conservation Service, U.S. Department of Interior, Washington, DC.

Ritchie, R.J., and J.R. Rose. 1998. *Results of Raptor Surveys on the Tanana River and in Yukon MOAs 1-5, Alaska, 1997*. Final Report prepared for the U.S. Fish and Wildlife Service, Fairbanks, AK by ABR, Inc., Fairbanks, AK. 41 pp.

Sorensen and Magnusson. 1979. *Annoyance Caused by Noise from Shooting Ranges*. Journal of Sound and Vibration, 62(3):437-442.

Tanana Chiefs Conference, Inc. 1993. *Forest Resources of Bureau of Land Management and Military Lands Within a 100 Mile Radius of Fairbanks, Alaska*. Prepared for the Bureau of Land Management, Fairbanks, AK. 137 pp.

Tande, G.F., R. Lipkin, and M. Duffy. 1996. *A Floristic Inventory of Fort Wainwright Military Installation, Alaska*. Prepared by the Alaska Natural Heritage Program for Eagan, McAllister Associates, Inc., Lexington Park, MD, using Cold Regions Research Engineering Laboratory Contract No. N00140-95-C-H026. 33 pp. + appendices.

U.S. Army Corps of Engineers. 2001. *Alert Holding and Pallet Processing Facilities, Fort Wainwright, Alaska*. Draft. Prepared and edited by J. Sargent, B. Abadie, and D. Walters, Environmental Resources Section, Alaska District, Anchorage, AK.

Viereck, L.A., and E.L. Little, Jr. 1972. *Alaska Trees and Shrubs*. Agricultural Handbook 410. U.S. Forest Service, Washington, D.C. 265 pp.

White, K.W. 1994. *World in Peril: The Origin, Mission & Scientific Findings of the 46th/72nd Reconnaissance Squadron*. K.W. White & Associates, Elkhart, IN.

8. ENVIRONMENTAL ASSESSMENT PREPARERS

This environmental assessment was prepared by Gene Stout and Associates, with support from the Environmental Division, Public Works, USARAK. Below are backgrounds of personnel within Gene Stout and Associates who either prepared or edited this assessment.

Jeffrey Blythe

Ph.D. Social Anthropology, University of Cambridge, England
M.Phil. Social Anthropology, University of Cambridge, England
B.A. Anthropology, Bard College, Annandale-on-Hudson, NY
Years of Experience: 8

Gene Stout

M.S. Zoology (Wildlife), Arizona State University
B.S. Zoology, Penn State University
Years of Experience: 31

Jeffrey Trousil

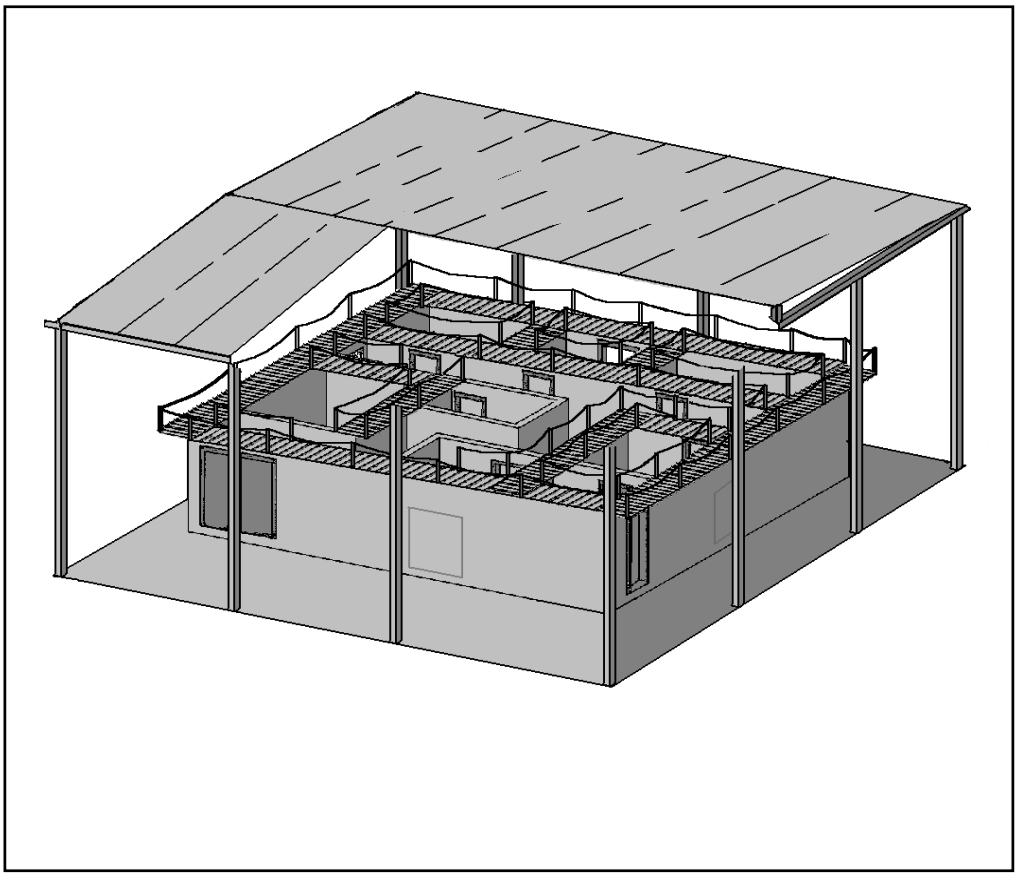
B.S. Wildlife, University of Wisconsin, Stevens Point
Years of Experience: 16

9. ACRONYMS

CFR	Code of Federal Regulations
db	decibel
DNL	day-night average sound level
F	Fahrenhite
FM	Field Manual
IPBC	Infantry Platoon Battle Course
ISBC	Infantry Squad Battle Course
mm	millimeter
MOUT	Military Operations in Urban Terrain
MPTR	Multi-Purpose Training Range
NEPA	National Environmental Policy Act
TC	Training Circular
USARAK	United States Army Alaska
USC	United States Code

APPENDIX A. Standard Descriptions of MOUT Facilities Proposed for Main Post

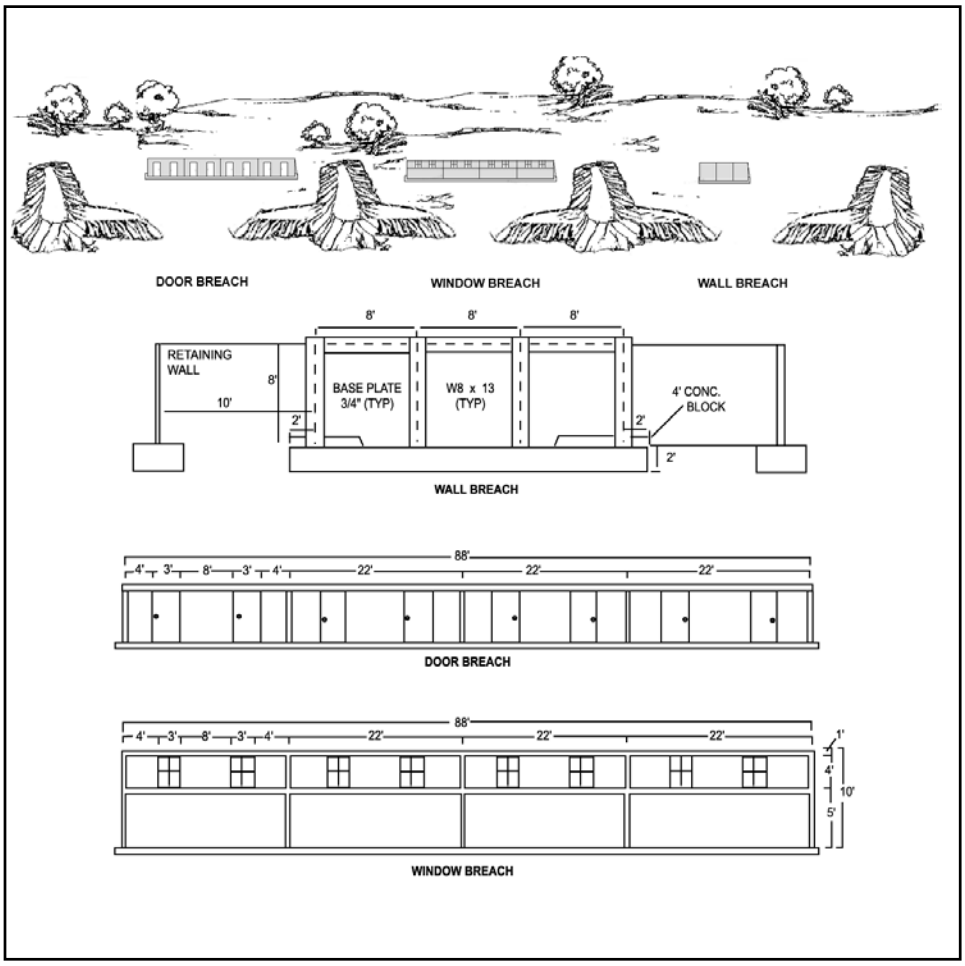
Shoot House



Use: Soldiers conduct live fire training under simulated close combat conditions. Soldiers would be trained and evaluated on their ability to move tactically, engage targets, and practice target discrimination in an urban environment.

Characteristics: Must have a minimum of 2 internal rooms. Catwalk with barn roof. Catwalk for pre-training observation only. House has four entrances. Shoot house design must accommodate 5.56mm ball and 5.56mm short-range training ammunition. Floor and interior walls must prevent ricochet effects. House can possess automated targetry that can be modified to change the scenario. Video capture capability for after-action review. Can be used with laser force-on-force blank fire.
Targetry - There are 13 precision targets for this station. These targets are re-configurable to represent combatants or non-combatants.
Ammunition requirements - 5.56 mm blank, SESAMS, SRTA, 5.56 mm ball, M84 stun grenade, practice grenades, smoke grenades, detonation cord, non-electric firing blasting caps.
Additional information - Barn roof does not reduce 360-degree surface danger zone but is there to reduce light and enhance realism.

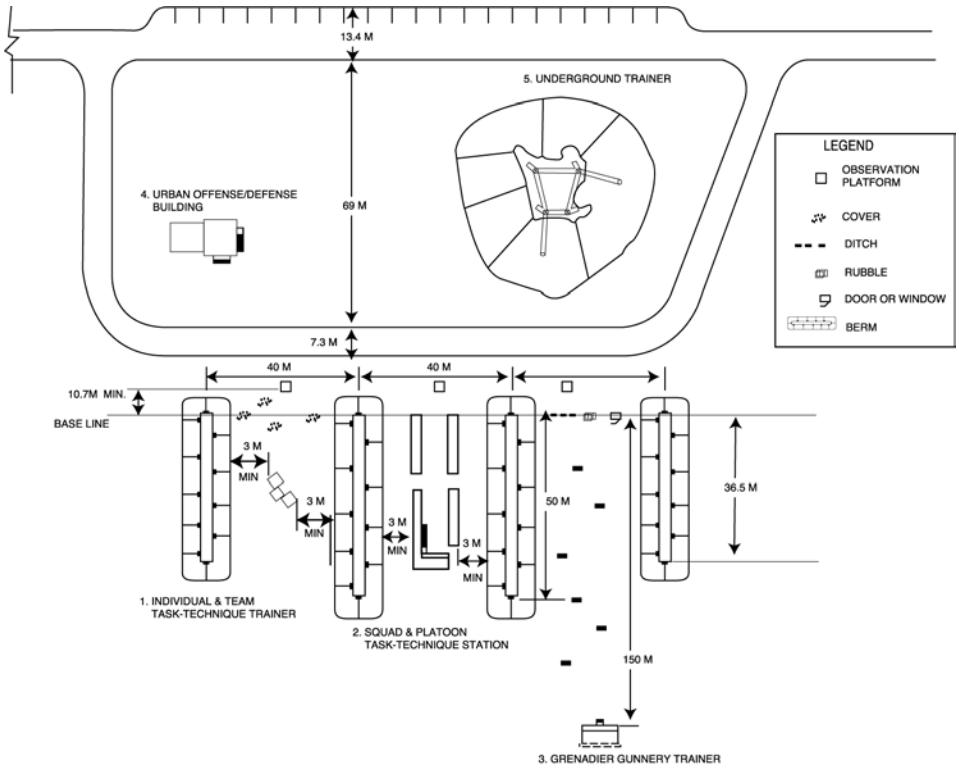
Breach House



Use: Soldiers learn to breach walls, windows, and doors. Soldiers learn to employ mechanical, thermal, ballistic, and explosive breach techniques.

Characteristics: Standard breach facilities should require mechanical, thermal, ballistic, and explosive breach techniques. Doors would accommodate breaching by all techniques. Man-sized holes would be 2 feet x 4 feet.
Ammunition requirements - Shotgun rounds, RLEM, detonation cord, C-4 blocks, non-electric firing blasting caps.

Urban Assault Course

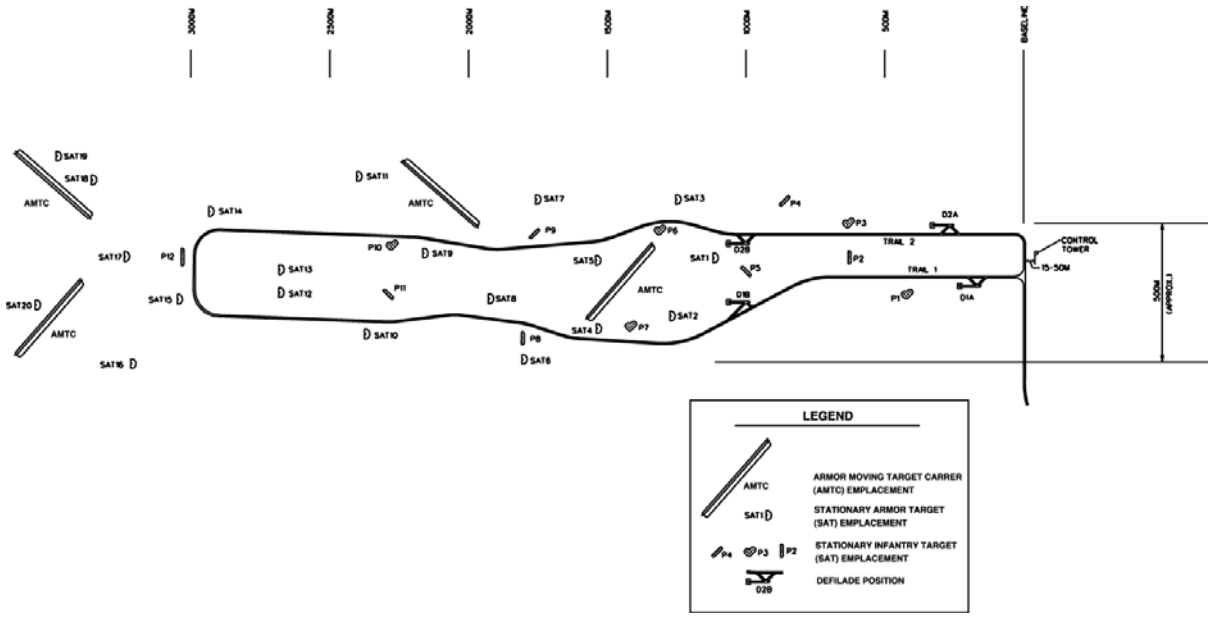


Use: Individual/collective tasks and techniques are trained. Soldiers and small unit leaders begin to learn the skills to operate with more confidence during deployments in urban areas.

Characteristics: Five stations. Techniques required at each station are used to build on for the next station. Each station has its own ammunition and targetry requirements.

APPENDIX B. Standard Description of Ranges Proposed for Yukon Training Area

Multipurpose Training Range

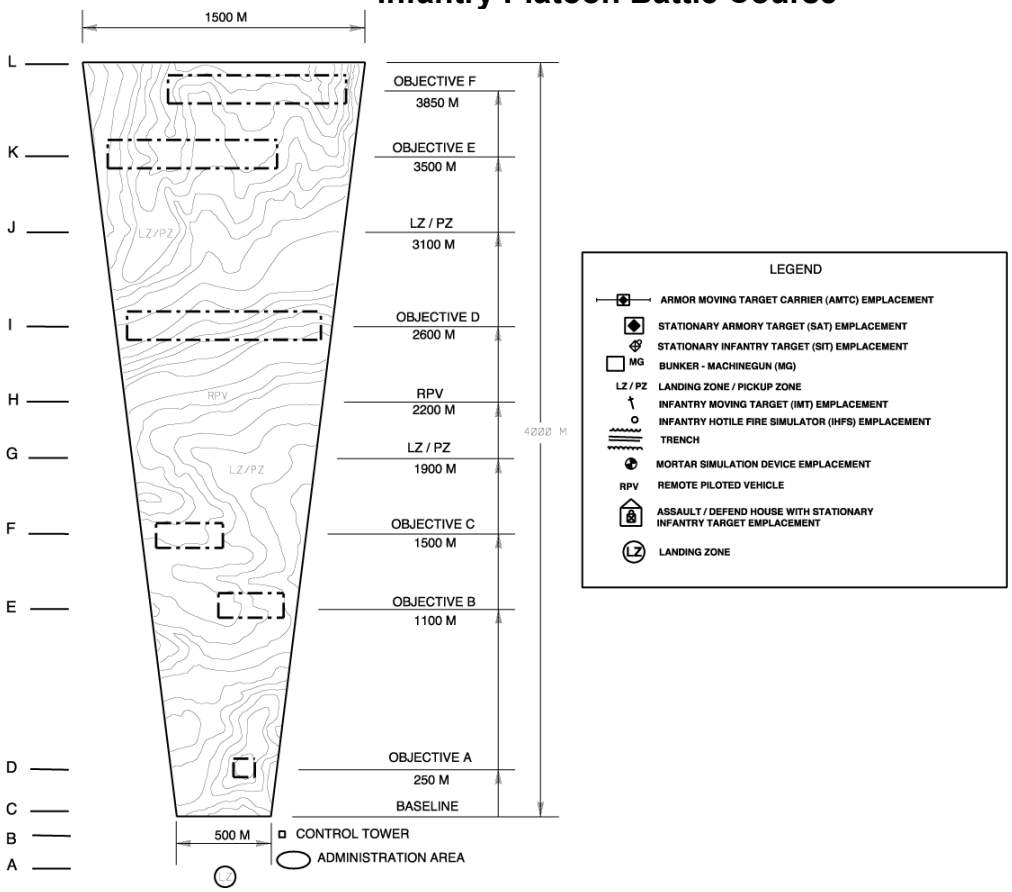


Use: Soldiers learn vehicle-mounted, crew-served weapon skills needed to defeat stationary and moving targets in a tactical array. The Multi-Purpose Training Range is also used for crew qualification, dry firing, and subcaliber engagements. Operations are conducted from moving vehicles.

Characteristics:
Number of firing positions - two trails.
Firing line width - 50 meters (minimum).
Firing point configuration - numbered markers on each trail.
Target configuration - 20 stationary vehicle targets, four moving vehicle targets, 50 E-type silhouette targets placed in tactical arrays along trails. Stationary vehicle targets are frontal views; moving targets are flank. The range uses the target array for tank or BFV Table IX.
Associated facilities - standard facilities, holding station, vehicle maintenance station.
References - FM 17-12-1, FM 23-1, CEHNC 1110-1-23.

Additional Information: This course channels the armored vehicle crew into the best engagement route (tactically sound) for target arrays on the range. Range may be used by two armored vehicles employing the wingman principle, per FM 17-12-1 and FM 23-1.
Numbered markers are emplaced for controllers to identify locations and provide point cues for target display. They should be positioned with care to be concealed from continuous observation by crews.
Crew qualification can be accomplished.
Target array and firing position/distance scenarios are according to Table VIII in the appropriate reference (FM 17-12-1, FM 23-1).
Bradley suppressive fire engagements may require up to four sets of Stationary Infantry Targets (SIT) patterned in a "W."

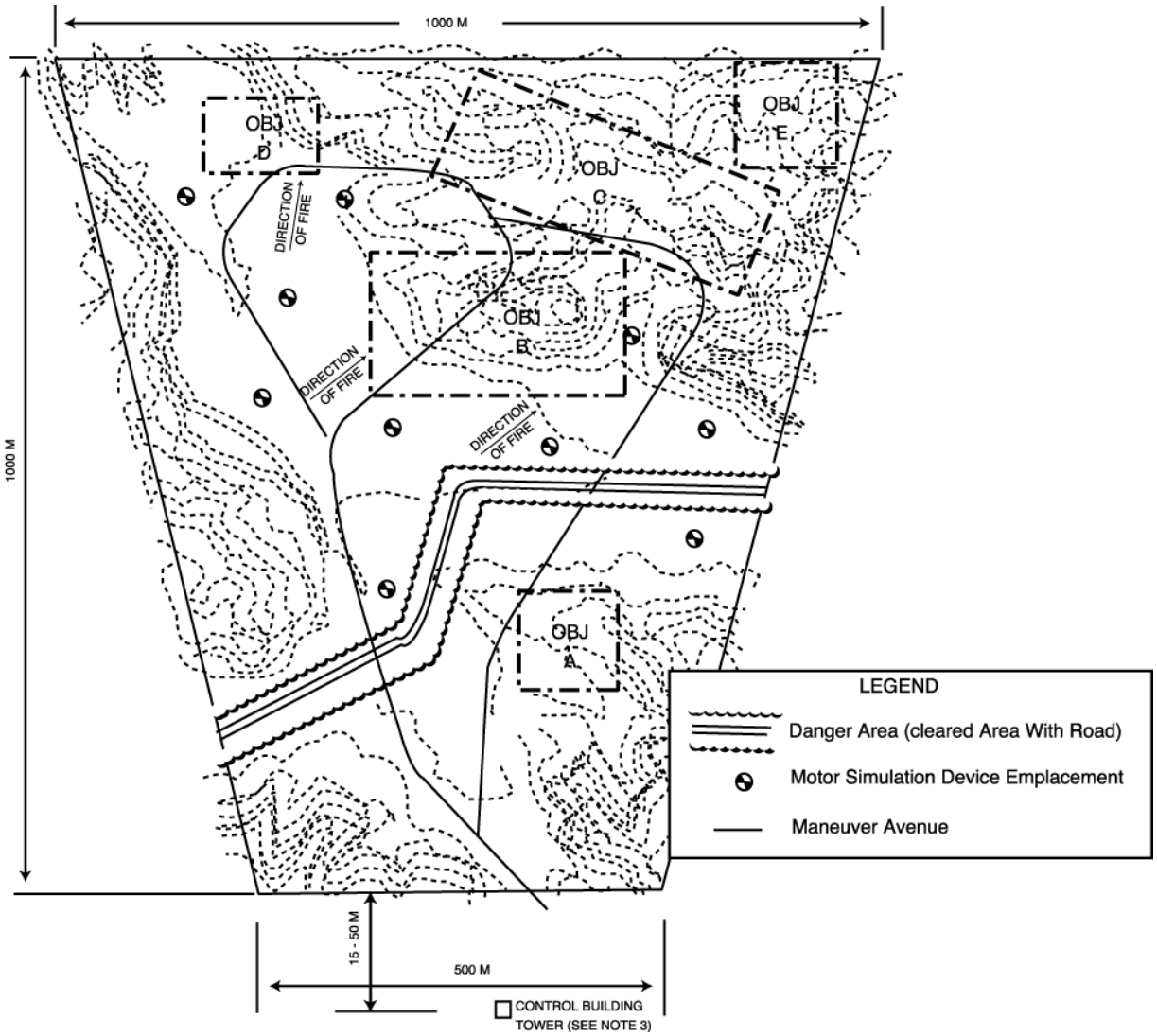
Infantry Platoon Battle Course



Use: The Infantry Platoon Battle Course gives dismounted and mounted infantry platoons the opportunity to conduct fire and movement exercises in offense, defense, and retrograde operations.

Characteristics: Baseline width is 500 meters; downrange width, 1,500 meters; length of downrange area, 4000 meters. Downrange activity areas consist of –
Control Area - 600 meters behind baseline.
Area A: LZ/PZ - 400 meters behind baseline.
Area B: Control Tower - 15-20 meters behind baseline.
Area C: LD or baseline - 0 meters.
Area D: OP - 250 meters downrange.
Area E: Interim Objective - 1100 meters downrange.
Area F: Counterattack area - 1500 meters downrange. Area G: LZ/PZ - 1900 meters downrange.
Area H: remotely piloted vehicle (RPV) TASC RCMAT - 2200 meters downrange.
Area I: Wire/trench/minefield obstacles – 2600 meters downrange.
Area J: LZ/PZ – 3100 meters downrange.
Area K: Final objective - 3100 meters downrange.
Area L: Counterattack area - 3850 meters downrange.
Target configuration – Targetry must be emplaced to present a target for both the base of fire element and the maneuver element throughout the entire range.
Associated facilities – standard facilities

Infantry Squad Battle Course



Use: A dismounted infantry squad can train in offense, defense, and retrograde. The squad practices ambush, movement to contact, attack, raid, retrograde, defense, and reconnaissance/security. A squad can conduct both individual and collective tasks.

Characteristics:
Number of firing positions – 5 target zones (Objectives A-E).
Firing line width – 500 meters at baseline.
Target area width – 1000 meters at furthest target.
Firing point configuration – hasty positions selected throughout the course, using natural cover and concealment.
Target configuration – area has five objectives. Objective A simulates a threat outpost, 200-300 meters downrange on a ridgeline or other area the squad can attack in a frontal suppressing engagement or a flanking engagement. Objective B, the final objective, has two target groupings;

targets in each group are approximately 15 meters apart and located with a threat trench. The objective has a stationary armored target and two machine-gun bunkers, 500-600 meters downrange from the baseline. Objective C is a threat counterattack force that repels the squad's advance into Objective B. Objective C is located another 200 meters downrange from Objective B. Objectives D and E are also counterattack forces, 900-1000 meters downrange from the baseline.
Associated facilities – standard facilities.
References – CEHNC 1110-1-23, ARTEP 7-8-MTP, ARTEP 7-8-Drill.

Additional information: Target locations are site-adapted. All must be located in areas that support desired tactics and the user's training requirements.
All trenches, bunkers, and armored vehicle emplacements must simulate typical threat styles.
Mortar simulation device emplacements are located in areas from which unfriendly mortar fire is to be simulated.
Helicopter landing areas, designed for heavy use, should be located to support aerial insertion and extraction of the squad.
Depending on training requirements, a danger area may be incorporated into the range layout.
Training exercises can use either live fire (if all safety requirements can be met) or non-live fire (if safety concerns so dictate).
For non-live-fire exercises, troops would use personnel-safe laser equipment.

APPENDIX C. Section 7, Endangered Species Act Exemption

United States Department of the Interior
Fish and Wildlife Service
Fairbanks Fish and Wildlife Office
101 12th Ave., Box 19, Room 110
Fairbanks, Alaska 99701
August 6, 2002

Colonel David Snodgrass
Director, Public Works
600 Richardson Drive #6000
Fort Richardson, Alaska 99505-6000

Re: Restructuring 172nd Infantry Brigade's associated ranges, facilities and infrastructure

Dear Colonel Snodgrass:

This responds to your request for a list of endangered and threatened species and critical habitats pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act). This information is being provided for the proposed restructuring of the 172nd Infantry Brigade's associated ranges, facilities and infrastructure. The proposed locations for changes include Fort Wainwright, the Donnelly Training Area, and outlying areas such as Gerstle River and Black Rapids.

No listed species occur in these project areas and there is no designated or proposed critical habitat in the vicinity of the proposed projects. Therefore, the Service concludes that this project is not likely to adversely impact listed species. Preparation of a Biological Assessment or further consultation under section 7 of the Act regarding this project is not necessary.

This letter applies only to endangered and threatened species under our jurisdiction. It does not preclude the need to comply with other environmental legislation or regulations such as the Clean Water Act.

Thank you for your cooperation in meeting our joint responsibilities under the Act. If you need further assistance, please contact Jonathan Priday at (907) 456-0499.

Sincerely,

Ted Swem

Ted Swem
Branch Chief
Endangered Species

APPENDIX D. Section 106, National Historic Preservation Act Consultation

FAI D2

MAR 21 2002

OHA

3130-1R ARMY

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON, ALASKA
600 RICHARDSON DRIVE #5000
FORT RICHARDSON, ALASKA 99505-5000

15 MAR 2002

Reply To:
APVR-RPW-EV

Judith E. Bittner
State Historic Preservation Officer
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Dear Ms Bittner:

This is to request your concurrence with U.S. Army Alaska (USARAK) finding of No Historic Properties Affected by range upgrades proposed for Fort Wainwright (FWA). These projects include the development of a Breach Facility, Shoot House, Unit Assault Course (UAC), Sniper Range, Infantry Squad Battle Course (ISBC), and a Modified Record Fire Range. Map 2 provides the design and location for the proposed Shoot House, UAC, and Breach Facility. Map 3 indicates the proposed location and design of the ISBC. Map 4 indicates the proposed location and layout of the Sniper Range. This project will be overlaid over an existing Sniper Range but will require modification of berms and target locations. Map 5 provides the layout and location of the proposed MRFR. This project is a redesign of an existing MRFR.

These projects are proposed to replace existing ranges south of FWA's cantonment between the Richardson Highway and the Tanana River (see Map 1 for project location). This area is heavily disturbed by initial development of ranges in the 1960s and subsequent redesign/rebuild over the past 40 years. The existing ranges are used for live fire training. They have not achieved exceptional importance over the past 20 years in the development of training doctrine. The Army's historic context with which these ranges are associated with has been determined not to have achieved exceptional importance as required for less the 50 years (see previous DOE submittals). Julia Steele of the COE surveyed the area where the proposed Shoot House is to be located in 1982 as part of the Range Control Headquarters Building project.[1] Georgeane Reynolds of the COE surveyed areas just north of the ranges in 1983.[2] No archaeological material was found during either survey. The proposed projects areas have been heavily disturbed and have a low potential of containing archaeological material.

If you require additional information, contact Russell Sackett at 384-3041.

Sincerely,

No Historic Properties Affected
Alaska State Historic Preservation Officer
Date: 3-22-02
File No.: 3130-1R ARMY

David B. Snodgrass
Colonel, U.S. Army
Director, Public Works

Enclosures

[1] Steele, Julia L. "Archeological Assessment of Proposed Range Control Headquarters Building, Fort Wainwright, Alaska." Manuscript on file at the U.S. Army Corps of Engineers, Alaska District. 1982.
[2] Reynolds, Georgeanne L. "Archeological Reconnaissance of Four Borrow Pits, Fort Wainwright, Alaska." Anchorage, Alaska: Corps of Engineers. 1983.

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON, ALASKA
600 RICHARDSON DRIVE #5000
FORT RICHARDSON, ALASKA 99505-5000

10 JUL 2002

RECEIVED

Reply To:
APVR-RPW-EV

Judith E. Bittner
State Historic Preservation Officer
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

No Historic Properties Affected
Alaska State Historic Preservation Officer
Date: 7-30-02
File No.: 3130-1R ARMY SR

Dear Ms Bittner:

The United States Army Alaska has proposed a range development project at Ft. Wainwright's Yukon Training Area, to begin in 2003. The project involves the construction of a training range, located in the vicinity of Manchu Road immediately to the east of Eielson Air Force Base (figure 1). A section 106 (NHPA) review of the proposed training area was conducted in June and July 2002. No cultural resources were identified.

Application of Section 106 Criteria for Identification and Evaluation of Historic Properties [36 CFR 800.4(d)] indicates a finding of "No Historic Properties Affected" for the proposed range construction project, based on the findings outlined below. U.S. Army Alaska (USARAK) requests your concurrence with this finding.

Undertaking

United States Army Alaska (USARAK) will construct a Multi-Purpose Training Range (MPTR) at the Yukon Training Area on Fort Wainwright, Alaska. The range will be sited just east of Eielson Air Force Base, along Manchu Road. Work will include construction of a control tower, an after-action-review building, warm-up facility, ammo break down facility, vehicle maintenance facility, vehicle holding area, gravel training roads, targets, arctic latrines, and utilities. The range will be approximately 850 acres. Work will also include upgrades to the existing Manchu Lake Road from Moose Creek to Transmitter Road. Road upgrades will include, paving, ditching and replacing the abutments on the Bailey bridge over Moose Creek.

Setting

Fort Wainwright is located in central Alaska (Figure 2.1a), north of the Alaska Range in the Tanana River Valley. The Post lies 120 miles south of the Arctic Circle near the cities of Fairbanks and North Pole in the Fairbanks North Star Borough. The installation consists of the Main Post, Tanana Flats Training Area, Yukon Training Area, and Dyke Range (Natural Resources Branch 2002). This project is located within the Yukon Training Area, approximately 20 miles southeast of Fairbanks.

Fort Wainwright has the northern continental climate of the Alaskan interior, characterized by short, moderate summers; long, cold winters; and little precipitation or humidity. Average monthly temperatures in Fairbanks range from –11.5° Fahrenheit (F) in January to 61.5°F in July, with an average annual temperature of 26.3°F. The record low temperature is –66°F, and the record high is 98°F. Average annual precipitation is 10.4 inches, most of which falls as rain during summer and early fall. Average annual snowfall is 67 inches, with a record high of 168 inches during the winter of 1970-71 (Natural Resources Branch 2002).

Literature Review

Archeological research on Fort Wainwright's training has resulted in numerous technical reports (Bacon 1978; Bacon and Holmes 1979; Dixon et al. 1980; Frizzera 1973; Higgs et al. 1999; Holmes 1979; Potter

FA1 C1
XBD C6

T

3130-1R/ARN

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON, ALASKA
600 RICHARDSON DRIVE #5000
FORT RICHARDSON, ALASKA 99505-5000

RECEIVED
DEC 12 2002
OHA

10 DEC 2002

Reply To:
APVR-RPW-EV

Judith E. Bittner
State Historic Preservation Officer
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Dear Ms Bittner:

This is to request concurrence with the United States Army Alaska (USARAK) finding of No Historic Properties Affected by proposed development of two training ranges at Ft. Wainwright's Yukon Training Area in 2003 (Figure 1). These ranges will be located in the vicinity of Manchu Road immediately to the east of Eielson Air Force Base (Figure 2 and 3). Archaeological surveys of the proposed training ranges were conducted in June and July 2002. No cultural resources were identified.

Undertaking

United States Army Alaska (USARAK) will construct an Infantry Platoon Battle Course (IPBC) and an Infantry Squad Battle Course (ISBC) at the Yukon Training Area on Fort Wainwright, Alaska. The ranges will be sited just east of Eielson Air Force Base, along Manchu Road.

The Infantry Squad Battle Course will include a Breach Facility, an Urban Assault Course, and a Shoot House (Figure 4). Weapons fired on this course will use small arms ammunition (*e.g.*, 9 mm tracer (AT4 subcaliber), 5.56 mm (M-16), 7.62 mm (M-60 machine gun), 40 mm training practice round – orange smoke (M-203)) using non-dudded ammunition. Small explosive charges (up to 5 pounds of C4) will be used at the Breach Facility.

The Infantry Platoon Battle Course is a larger-scale course designed for more combat realism and larger unit (platoon) training (Figure 5). Weapons fired on this course will be the same as those on the Infantry Squad Battle Course. Both courses will include an After-Action Review Facility to allow the control, monitoring, and reviewing of simulations and training operations. Supporting facilities for both courses will also include communications, electric service, an ammo breakdown facility, control tower, warm-up facility, crushed aggregate access roads and parking areas, and self-contained dry-flush, Arctic latrines.

Setting

Fort Wainwright is located in central Alaska (Figure 2.1a), north of the Alaska Range in the Tanana River Valley. The Post lies 120 miles south of the Arctic Circle near the city of Fairbanks, in the Fairbanks North Star Borough. The installation consists of the Main Post, Tanana Flats Training Area, Yukon Training Area, and Dyke Range (Natural Resources Branch 2002). This project is located in the Yukon Training Area, approximately 20 miles southeast of Fairbanks.

Fort Wainwright has a northern continental climate characterized by short, moderate summers; long, cold winters; and little precipitation or humidity. Average monthly temperatures in Fairbanks range from –11.5° Fahrenheit (F) in January to 61.5°F in July, with an average annual temperature of 26.3°F. The record low temperature is –66°F, and the record high is 98°F. Average annual precipitation is 10.4 inches, most of which falls as rain during summer and early fall. Average annual snowfall is 67 inches, with a record high of 168 inches during the winter of 1970-71 (Natural Resources Branch 2002).

Literature Review

Archeological research on Fort Wainwright's training has resulted in numerous technical reports (Bacon 1978; Bacon and Holmes 1979; Dixon et al. 1980; Frizzera 1973; Higgs et al. 1999; Holmes 1979; Potter et al. 2000; Rabich and Reger 1977; Staley 1993), scientific papers (Holmes and Anderson 1986; West 1967; 1975), and the identification of at least 155 archeological sites. Work on Fort Wainwright has been largely stratified sampling in nature, resulting at times in as little as 1% of the survey universe being inventoried. This work has largely focused on known sites and areas thought to be of very highest potential for containing archeological sites. Areas of less than ideal site potential have often been neglected and sites that may be eligible for nomination to the NRHP have been incompletely documented or left un-evaluated. Thus, while a large number of important sites have been identified on Fort Wainwright, a number of important gaps exist in the cultural resource inventory.

This archeological record represents all of the accepted prehistoric cultures of the Alaskan interior. Of particular significance is the role played by archeological resources located on Army lands in the definition of the Denali Complex of the American Paleoarctic Tradition (Anderson 1970; West 1967; 1981). Though not located on Army lands, two of the oldest well-dated sites in North America, Swan Point and Broken Mammoth, dated to between 11,500 and 12,000 bp, are located just to the north of Donnelly Training Area East in the vicinity of Shaw Creek (Holmes 1996, 1998; Holmes et al. 1996; Yesner et al. 1999). Sites reflecting the influence of what has been termed Northern Archaic (e.g. Anderson 1968; Workman 1978), dating to perhaps 6,000 to 2,000 bp, are also present on Fort Wainwright training lands, as are late prehistoric Athapaskan (e.g. Andrews 1975; 1987; Cook 1989, Mishler 1986; Sheppard et al. 1991; Shinkwin 1979; Yarborough 1978) and Euro-American archeological sites (Gamza 1995; Phillips 1984). The significance of these known sites on Army Withdrawal Lands is attested by the fact that despite that nearly 50 of these sites remain to be evaluated 27 individual sites and 2 archeological districts have been deemed eligible for inclusion on the National Register of Historic Places, a third archeological district remains to be evaluated. Several known prehistoric archeological sites are located in the vicinity of this project APE. These include FAI-157, XBD-093, XBD-094, XBD-095, XBD-103, XBD-104, XBD-105, 111, and XBD-162. Of these only FAI-157 and XBD-104 are located near these project APEs.

FAI-157

FAI-157 was first reported by Holmes (1979:23) as consisting of a single chert flake and a segment of an obsidian microblade (see Figure 3). The site was re-located by USARAK archeologists during the 2002 field season based on map coordinates and the presence of partially filled in test units. The site was shovel tested extensively and no additional cultural material was recorded. It is probable that the site was almost completely collected during the initial testing of the site. This site is not considered eligible for inclusion on the National Register of Historic Places and no further work is required at this site.

XBD-104

XBD-104 was also reported by Holmes (1979:21). The site consists of two gray chert flakes and possible biface thinning flake found on the surface in a disturbed context. Site area, located near the intersection of Quarry and Manchu Roads, has been scraped by heavy equipment (see Figure 3). Attempts were made during the 2002 field season to relocate the site, no cultural material was observed.

Archaeological Survey

In June and July 2002, an archaeological survey crew, comprised of four archaeologists employed by the Center for Environmental Management of Military Lands, Colorado State University, conducted a pedestrian survey of the proposed range construction area. The project's Area of Potential Effect (APE) encompassed an area larger than the proposed range construction footprint in order to ensure coverage of areas that may incur secondary impacts during construction or use. The survey area included approximately 30 square kilometers located to the north and south of Manchu Road.

Parallel pedestrian transects spaced at 20m were walked in all areas that were not deemed too wet or too steep (>40°) to contain cultural material. Transect survey units were partitioned according to

existing roads and trails where possible. When existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined.

Systematic sub-surface testing was undertaken in areas determined to be high probability (e.g., lake margins, ridges, benches adjacent to steeper slopes) during initial review of the proposed project area, and as determined by the supervising archaeologist and field crew leader based on survey findings. Shovel tests were approximately 50 x 50cm, and screened through ¼" hardware cloth. No cultural materials were identified or recovered during the field inventory.

Results/Summary

Survey and sub-surface testing did not reveal any cultural resources within the boundaries of the proposed projects' areas of potential effect.

If you require additional information, please contact William Hedman, USARAK Archeologist, at 353-3002.

Sincerely,

David B. Snodgrass
Colonel, U.S. Army
Director, Public Works

enclosures

No Historic Properties Affected
Alaska State Historic Preservation Officer
Date: 1-14-03
File No.: 3130-1R ARMY SL

DRAFT – Do Not Cite

FINDING OF NO SIGNIFICANT IMPACT

Range Upgrade/Expansion
Fort Wainwright, Alaska

Description of Action. U.S. Army Alaska proposes to construct a Sniper Field Fire Range Project, Military Operations in Urban Terrain, modified Record Fire Range, Tanana River observation towers, Small Arms Complex borrow pit, Machine Gun 10/50 Zero Range, Hand Grenade Qualification Course, reconfigured target array on MK 19 Range, co-location of Military Police Combat Pistol Qualification and Qualification Course, AT-4 Range pad expansion, Consolidated Range Maintenance Facility, and all-season local firing points at Main Post, Fort Wainwright, Alaska to provide training to meet Army standards. These projects would be sited on located previously or currently occupied small arms ranges that have signs of previous disturbance within the Fort Wainwright Small Arms Complex.

U.S. Army Alaska also proposes to construct a Multi-Purpose Training Range, Infantry Platoon Battle Course, Infantry Squad Battle Course, Light Demolition Range, and Manchu Lake Road upgrade in Yukon Training Area, Fort Wainwright to provide training to meet Army standards. These projects would be sited on lands that are mostly used for military maneuver.

Design and construction of all projects would be completed by 2005.

Anticipated Environmental Effects. Adverse impacts identified were disturbance of soils and changes in vegetation, but soils and vegetation in the Main Post affected have a history of disturbance. There would be some effects to wetlands, but any such impacts would be within limits of Section 404 permits, which would be obtained. Short-term noise and air quality degradation would occur during construction, but none would be significant or long-term on Main Post and increased noise levels on Yukon Training Area would be consistent with current land use and Department of the Army noise policies. There is a potential for the generation or discovery of hazardous waste or materials; such waste or materials would be disposed of or remediated according to compliance requirements. Potential negative impacts to air quality would be eliminated following construction with the exception of very minor increases in energy required to operate the ranges, which would be partially offset by decreased use or removal of other ranges.

No significant adverse environmental impacts are anticipated for geology, surface or ground water quality, biological resources (including federally-listed threatened or endangered plant or animal species), wetlands, land use, cultural resources, outdoor recreation, aesthetics, socioeconomics, environmental justice, and protection of children. This Proposed Action would provide a temporary positive impact on the local economy through the addition of major construction projects and a potential beneficial impact to moose habitat. There are potential minor cumulative impacts associated with soil disturbance, regional air quality (very minor), and vegetation changes, but these would be identical to ongoing cumulative impacts.

Conclusions. Based on a review of the information contained in this Environmental Assessment, it is concluded that construction or upgrades of proposed range facilities on Fort Wainwright is not a major federal action that would significantly affect the quality of the

environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the preparation of an Environmental Impact Statement for this Proposed Action is not required.

Point of Contact. Requests for further information or submittal of public comments may be made for 30 days after first publication date to:

Chief, Environmental Resources
Public Works
Building 724
Fort Richardson, AK 99505-6505

Approved by:

_____ _____

Fredrick J. Lehman Date
Colonel, U.S. Army
Commander
U.S. Army Garrison Alaska