Environmental Assessment
for
Implementation of 2005 Base Realignment and Closure Commission Recommendations
at
Eielson Air Force Base, Alaska

Prepared for Pacific Air Force
August 2007

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FINDING OF NO SIGNIFICANT IMPACT

NAME OF PROPOSED ACTION. Implement the 2005 Base Realignment and Closure Commission (BRAC) Recommendations at Eielson Air Force Base (Eielson AFB).

DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE. The United States Air Force (Air Force) at Eielson AFB proposes the implementation of the 2005 BRAC Commission's mandated realignment of Eielson AFB. These actions include two major components. The first component is the transfer of all A/OA-10 aircraft (18), currently operating as part of the 355 FS, to two bases with existing A/OA-10 aircraft operations, Moody and Barksdale Air Force Bases. This will vacate 435,300 square feet of facility space, including hangers, equipment storage, and administrative offices. In addition the action would transfer all currently assigned personnel including pilots, maintenance, and logistical support personnel. Dependents of active duty personnel will also be transferred. The second component of the BRAC Commission's findings is to transfer of the Combat Alert Cell (CAC) Forward Operations Location (FOL) from Galena, Alaska to Eielson AFB. The FOL functions would include providing temporary aircraft hanger space, squadron support crew housing, and facility, maintenance and logistical support as required for the CAC. Activities would include mobilizing the 3rd Operations Support Squadron and deploying them to Eielson AFB 3 to 5 times per year as a FOL facility. Each event would be 1 to 2 weeks in duration with an accompanying contingency consisting of 3 to 6 F-15C aircraft and a support crew of up to 30 personnel (flight, security and support crews). Eielson AFB could be used as an FOL to conduct training exercises, temporarily store aircraft, and stage during times of perceived or real threat.

Since the proposed action is mandated by law and must be implemented, the only other alternative being analyzed is the no action alternative. The no action alternative represents the base as it is currently being operated.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES. This EA provides an analysis of the potential environmental consequences under the proposed action and no action alternative. Environmental resources evaluated in detail for potential environmental consequences were land use, noise, air quality, socioeconomics, infrastructure, cultural resources, water and soil resources, physical resources, hazardous materials and waste management, and biological resources. The two proposed actions were found to be consistent with base land use planning, noise, air quality, and resource management. Overall, short-term socioeconomic impacts are expected in the region due to the loss of federal spending in the local economy and resultant loss of employment. This will be mitigated by actions that the U.S. Army will take relative troop and unit strength. Current infrastructure elements would adequately support project implementation of the CAC, with some increase in vehicular traffic likely during some construction. Hazardous materials, such as asbestos and lead-based paint, and solid waste would be generated during associated demolition projects, but overall be reduced by the transfer of A/OA-10 aircraft. All federal and state regulations regarding asbestos and lead will be followed. Removal of asbestos and lead-based paint from aging facilities would eliminate some existing environmental hazards. Solid waste would be recycled when possible; no appreciable amount of waste is expected. No impacts to biological resources are anticipated. Air pollutants and noise levels would increase

slightly during construction, but not to harmful levels and long-term these levels would be reduced to below current levels as a result of the transfer of aircraft.

CONCLUSION. Based on the findings of this EA conducted in accordance with the requirements of the National Environmental Policy Act (42 United States Code 4321-4347), Council on Environmental Quality (40 Code of Federal Regulations §§ 1500-1508), and 32 CFR 989, et seq., *Environmental Impact Analysis Process*, and after careful review of the potential impacts, I conclude implementation of the proposed action would not result in significant impacts to the quality of the human or the natural environment. Therefore, a Finding of No Significant Impact is warranted, and an Environmental Impact Statement is not required for this action.

BRIAN D. MAAS
Colonel, USAF
Vice Commander

13 Sep 2007
Date

ACRONYMS AND ABBREVIATIONS

°F	degree Fahrenheit
354 CEV	354th Civil Engineer Squadron Environmental Flight
354 FW	354th Fighter Wing
AAC	Alaska Administrative Code
ACM	Asbestos-Containing Material
ADEC	Alaska Department of Environmental
AFB	Air Force Base
AFI	Air Force Instruction
Air Force/	United States Air Force
AKANG	Alaska Air National Guard
ANR	Alaska NORAD Region
AP	Accumulation Point
AQCR	Air Quality Control Region
BDA	Base Developed Area
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CAC	Combat Alert Cell
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Compensation, and Liability
CEV	Civil Engineer Environmental
CEVR	Civil Engineer Environmental
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CZ	Clear Zone
dB	decibel
DoD	Department of Defense
EA	Environmental Assessment
EFI	Efficient Facilities Initiative
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FFA	Federal Facilities Agreement
FICON	Federal Interagency Commission on
FOL	Forward Operation Location
FONSI	Finding of No Significant Impact
HW	Hazardous Wastes
ICRMP	Integrated Cultural Resources Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental
INRMP	Integrated Natural Resource
I	Installation Restoration
k	kilograms
MFE	Major Flying Exercises
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOI	Notice of intent
NORAD	North American Aerospace Defense Comm.
NPDES	National Pollutant Discharge Elimination Sys.
NRHP	National Register of Historic Places
NSPS	New Source Performance Standard
O_3	Ozone
OSHA	Occupational Safety and Health Administration
OSS	Operation Support Squadron
PAA	Primary Assigned Aircraft
PAC	Pacific Air Command
PACAF	Pacific Air Forces
Pb	Lead
PCB	polychlorinated biphenyl
PM_{10}	particulate matter less than or equal to 10 micrometers in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 micrometers in diameter
POL	Petroleum, Oil, and Lubricants
ppm	parts per million
PPWG	Pollution Prevention Working Group
PSD	Prevention of Significant Deterioration
QAPP	Quality Assurance Program Plan
RCRA	Resource Conservation and Recovery Act
RF-A	RED FLAG-Alaska
ROD	Record of Decision
ROI	Region of Influence
SAP	Satellite Accumulation Point
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	sulfur dioxide
S	Standard Operating Procedure
$\bar{S}$	sulfur oxides
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
TPY	Tons Per Year
US	United States
USACE	United States Army Corps of Engineers
USBC	United States Bureau of the Census
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
$\mu g/m^3$	micrograms per cubic meter

EXECUTIVE SUMMARY

This Environmental Assessment (EA) was prepared to analyze the potential environmental affects that could result at Eielson AFB from the realignment of two existing Air Force groups. At the present time the 354 Fighter Wing operates at Eielson Air Force Base (Eielson AFB) A/OA-10 aircraft as part of their flying mission. These aircraft would be relocated to other bases within the Air Force. The second group that would be affected by the realignment would be the Galena Forward Operating Location (FOL) function that is currently based at Galena, Alaska. The Galena FOL would close and transfer the Combat Alert Cell (CAC) functions to Eielson AFB. This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and Air Force Environmental Impact Analysis Process (EIAP), as promulgated in Title 32 of the Code of Federal Regulations (CEQ) Part 989.

PURPOSE AND NEED FOR THE ACTION

The purpose of the proposed action is to implement mandated actions of the 2005 BRAC Commission. The Secretary of the Department of Defense (DoD) initiated the Department's BRAC process with his November 15, 2002, memorandum, *Transformation Through Base Realignment And Closure*. The Secretary emphasized eliminating excess capacity and transforming DOD by rationalizing infrastructure. To reflect these requirements, the Air Force analyzed Eielson Air Force Base's mission and force structure and came up with recommendations that would accomplish these goals. These include:

- Relocate the 355th Fighter Squadron's A/OA-10 aircraft to Moody Air Force Base, Georgia and Barksdale Air Force Base, Louisiana, consolidating their operations with base's that have existing A/OA-10 aircraft operations.
- Make space available at Eielson AFB, thereby increasing the capacity for transient aircraft participating in the Red Flag-ALASKA (RFAK) flying exercises that Eielson hosts each spring and summer.
- Relocate the CAC FOL from Galena, Alaska to Eielson AFB, resulting in the consolidation of the function with a base that has excess capacity and allowing for the closure of a remote airstrip (Galena) that is expensive to operate.

This EA assesses the potential impacts and environmental consequences of all BRAC actions.

PROPOSED ACTION AND ALTERNATIVES

The proposed action would result in the implementation of the 2005 BRAC Commission's mandated realignment of Eielson AFB. These actions include:

- The transfer of all A/OA-10 aircraft (18), currently operating as part of the 355 FS, to two bases with existing A/OA-10 aircraft operations, Moody and Barksdale Air Force Bases.

- Vacate 435,300 square feet of facility space, including hangers, equipment storage, and administrative offices.
- Transfer of all currently assigned personnel including pilots, maintenance, and logistical support personnel. Dependents of active duty personnel will also transfer.
- The transfer of the CAC FOL from Galena, Alaska to Eielson AFB. FOL functions would include providing temporary aircraft hanger space, squadron support crew housing, and facility, maintenance and logistical support as required for the CAC.
- Activities would include mobilizing the 3rd OSS and deploying them to Eielson AFB 3 to 5 times per year as a FOL facility. Each event would be 1 to 2 weeks in duration with an accompanying contingency consisting of 3 to 6 F-15C aircraft and a support crew of up to 30 personnel (flight, security and support crews). Eielson AFB could be used as an FOL to conduct training exercises, temporarily store aircraft, and stage during times of perceived or real threat.

Since the proposed action is mandated by law and must be implemented, the only other alternative being analyzed is the no action alternative. The no action alternative represents the base as it is currently being operated.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

Environmental Consequences Matrix

Resource Category	***Proposed Action-BRAC Realignment***	***No-Action Alternative***
Noise	Demolition and construction of facilities would be localized and temporary. Noise from occasional flight traffic (3 to 5 times per year) would be of short-term duration. Overall impacts from noise would be reduced due to relocation of A/OA-10 aircraft.	Baseline conditions would continue within current noise contours. The F-16 and KC-135 aircraft that also operate at Eielson drive the noise contours.
Air Quality	Emissions generated by construction, demolition, and paving would be localized and temporary. Maximum emissions of any criteria pollutant would not exceed *de minimis* thresholds. Overall there would be a reduction in aircraft emissions as a result of the transfer of A/OA-10 aircraft.	No change to existing emissions.
Socioeconomics and Infrastructure	There would be a slight change in employment as well as reduced expenditures by Eielson in the local economy. Approximately 32 civilian jobs would be lost and $16.8 million of military related expenditure in the local economy would be eliminated. CAC related activities would result in approximately $1.2 million additional expenditures for construction of facilities and $735,000 annually thereafter, depending on the number of times the Alert Cell would mobilize.	No change to existing socioeconomic resources or infrastructure.
Water and Soil Resources	Construction and demolition activities would disturb 120 cy of soils for drainage improvements. Approximately 3.94 acres of soils would be exposed during asphalt and concrete removal. Impacts would be minimized using best management practices	Ongoing activities at Eielson AFB would continue at baseline levels; no additional effects on

	required by the base and permits. No impacts to water resources.	water and soils resources would occur.
Biological Resources	No adverse impacts to sensitive vegetation or wildlife from the proposed action. Approximately 3.9 acres of grass areas will be disturbed during excavation for construction related to the CAC facility.	No change to current baseline conditions on Eielson AFB.
Cultural Resources	All of Eielson AFB has been inventoried with results subjected to consultation under Section 106 of the NHPA. No eligible or National Register properties are in the Area of Potential Effect.	The effect on the environment would be unchanged relative to baseline.
Hazardous Materials and Waste Management	There would likely be a small reduction in the amount of hazardous materials used and wastes generated at Eielson AFB as a result of the relocation of the operation of the A/OA-10 aircraft to other Air Force bases. There would be no noticeable increase in hazardous materials use or waste disposal as a result of the periodic operation of the Alert Cell at Eielson AFB.	Ongoing activities at Eielson AFB would continue at baseline levels.

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for the
Base Realignment and Closure (BRAC)
Actions at Eielson Air Force Base

1.0 Purpose and Need for Action

Section 1.0 provides a description of the purpose and need for the proposed action.

The purpose of the proposed action is to implement the BRAC Commission's recommendation pertaining to the relocation of the Galena Forward Operating Location Combat Alter Cell function to Eielson AFB.

1.1 Background and Objectives for the Proposed Action

1.1.1 In July 2001, the Department of Defense (DoD) announced an Efficient Facilities Initiative (EFI). This consolidation was projected to save an estimated $3.5 billion annually. The purpose of the EFI was to enable the US military to match facilities to forces. All military installations were to be reviewed, and recommendations made based on the military value of the facilities and the structure of the force. The EFI was designed to encourage a cooperative effort between the President, the Congress, and the military and local communities to achieve the most effective and efficient base structure for America's Armed Forces.

1.1.2 In mid-December 2001 House and Senate negotiators authorized a new round of military base closings, but delayed any action until 2005. Under the plan, the Secretary of Defense was to submit a force structure plan and facility inventory, with a certification that proposed closings were justified by the force structure plan and that they would produce net savings. The closings would also consider environmental costs and community impact.

1.1.3 On January 6, 2004, the DoD announced that it had requested commanders of installations in the United States, territories and possessions to gather information about their installations as part of the 2005 round of BRAC. All installations were to participate in these calls, and every base and military installation in the United States by conducting internal assessments of their operations, land, personnel, and facilities.

1.1.4 The DoD's BRAC recommendations were developed by the military services and seven joint cross-service groups in consultation with the combatant commanders. Each recommendation was created under the procedures established in the Base Closure and Realignment Act of 1990, as amended. The BRAC analysis started with the 20-Year Force Structure Plan and the department's inventory of facilities, and then applied BRAC selection criteria (Table 1-1) that had been published early in 2004.

1.1.5 Consistent with the criteria, the Secretary of the Air Force established the following four goals to support right-sizing the force and enhancing its capabilities through BRAC 2005:

- Transform by maximizing the war fighting capability of each squadron,
- Transform by realigning Air Force infrastructure with the future defense strategy,
- Maximize operational capability by eliminating excess physical capacity, and
- Capitalize on opportunities for joint activity.

Table 1-1. BRAC Statutory Selection Criteria

Military Value (Given Priority Consideration)
1. The current and future mission capabilities and the impact on operational readiness of the total force of the DoD, including the impact on joint war fighting, training, and readiness.
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.
4. The cost of operations and the manpower implications.
Other Considerations
5. The extent and timing of potential costs and savings, including the number of years, beginning with the date of completion of the closure or realignment, for the savings to exceed the costs.
6. The economic impact on existing communities in the vicinity of military installations.
7. The ability of the infrastructure of both the existing and potential receiving communities to support forces, missions, and personnel.
8. The environmental impact, including the impact of costs related to potential environmental restoration, waste management, and environmental compliance.

Source: BRAC Commission 2005

1.1.6 On May 13, 2005, the Secretary of Defense announced DoD's recommendations to close or realign military facilities in the United States. These recommendations called for closing 33 major military bases in the United States. In addition to calling for realigning an additional 29 major military bases, the Pentagon's proposal called for the closure or realignment of another 775 smaller military locations.

1.1.7 The May 2005 DoD recommendation included a major realignment of Eielson AFB and the placement of the base in a "warm" status. The DOD proposed that Eielson be used only as training base during the summer months, primarily for USAF/Joint/Combined exercises.

1.1.8 Though not included in the May 2005 DoD recommendation, the BRAC Commission added the Galena Forward Operating Location for further consideration on July 19, 2005. The BRAC Commission determined that the rationale for maintaining two forward operating locations in Alaska was derived during the Cold War, however, the security environment had changed and the requirement for maintaining these forward operation locations was no longer essential. The Commission found the air sovereignty mission could be conducted from Eielson AFB and recommended closure of Galena Forward Operating Location, AK. It was also recommended that the other forward operating location in King Salmon, AK continue to be maintained in the current status.

1.1.9 On August 25, 2005, the Defense Base Closure and Realignment Commission (BRAC) substantially altered the original DoD proposal. The final recommendation of the 2005 BRAC to

realign Eielson AFB, as officially denoted in the Final Report to the President as *BRAC Recommendation #79 (Air Force 6)* (p. 112), reads as follows:

> The proposed DOD realignment at Eielson Air Force Base, AK involves the distribution of eighteen A-1 0 Thunderbolt aircraft from the 354th Fighter Wing to the 91 7th Wing at Barksdale Air Force Base, LA (three aircraft); to a new active-duty unit at Moody Air Force Base, GA (12 aircraft); and to backup inventory (three aircraft). The Air National Guard Tanker unit and rescue alert detachment will remain as tenants on Eielson Air Force Base.

1.1.10 The final proposal called for Eielson AFB to remain open using the active duty Air Force assets, resident Air National Guard units, and a portion of the infrastructure to continue operating the base for the USAF/Joint/Combined exercises. The BRAC Commission also recommended the closure of Galena Forward Operating Location (FOL) and transferring the Combat Alert Cell (FOL) functions to Eielson AFB.

1.1.11 The United States Air Force (Air Force) proposes to implement the 2005 Base Realignment and Closure Commission's (BRAC) mandated realignment for Eielson Air Force Base (AFB), Alaska. On September 8, 2005, the BRAC Commission recommended a set of domestic realignment and closure actions (BRAC Commission 2005). After the President approved these recommendations on September 15, 2005, he forwarded them to Congress (DoD 2005), which did not alter any of the BRAC Commission's recommendations. Thus, on November 9, 2005, the recommendations became law (DoD 2006). For this reason, the Air Force must now implement the 2005 BRAC Commission recommendations stipulated in the Defense Base Closure and Realignment Act of 1990 (Public Law 100-526, as amended).

1.1.12 This Environmental Assessment (EA) analyzes the potential environmental consequences resulting from the Eielson AFB proposal to implement the 2005 BRAC Commission recommendations, made law on November 9, 2005 in accordance with the Defense Base Realignment and Closure Act of 1990, as amended. The Air Force, through Pacific Air Command (PAC), proposes to implement the BRAC realignment of Eielson AFB by moving the Combat Alert Cell (CAC) mission from Galena FOL, AK to Eielson AFB and to move 18 A/OA-10 aircraft to other Air Force facilities.

1.1.13 In accordance with National Environmental Policy Act (NEPA) of 1969 (42 United States Code 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Sections 1500-1508), and 32 CFR Part 989, et seq., Environmental Impact Analysis Process (EIAP), this EA was prepared to consider the potential consequences to the human and natural environment. The EA examines the consequences of implementing the proposed BRAC realignment and no-action alternative. Under BRAC law, the Air Force must implement the proposed BRAC realignment; therefore, analysis of the no-action alternative occurs primarily for comparison purposes.

1.2 Location of the Proposed Action

1.2.1 Eielson AFB is located in the interior of Alaska, within the Fairbanks North Star Borough. The base is located approximately 23 miles southeast of Fairbanks, and 9 miles southeast of the city of North Pole (Figure 1-1). Other communities near Eielson AFB include Moose Creek, located to the north, and the Salcha area which lies several miles to the south. The base is located in the Tanana River Valley on a relatively flat, floodplain terrace approximately 2 miles from the active river channel.

1.2.2 The main base area encompasses 63,195 acres with the base managing an additional 37,824 acres at four other locations. The developed portion of the base consists of 19,790 acres and is located in a relatively undeveloped area bordered to the north and east by undeveloped military reservation lands. A mixture of commercial, light industrial, and residential areas have been developed along the Richardson Highway (Highway 2) between the base and the city of Fairbanks. The Richardson Highway passes through the western portion of the base.

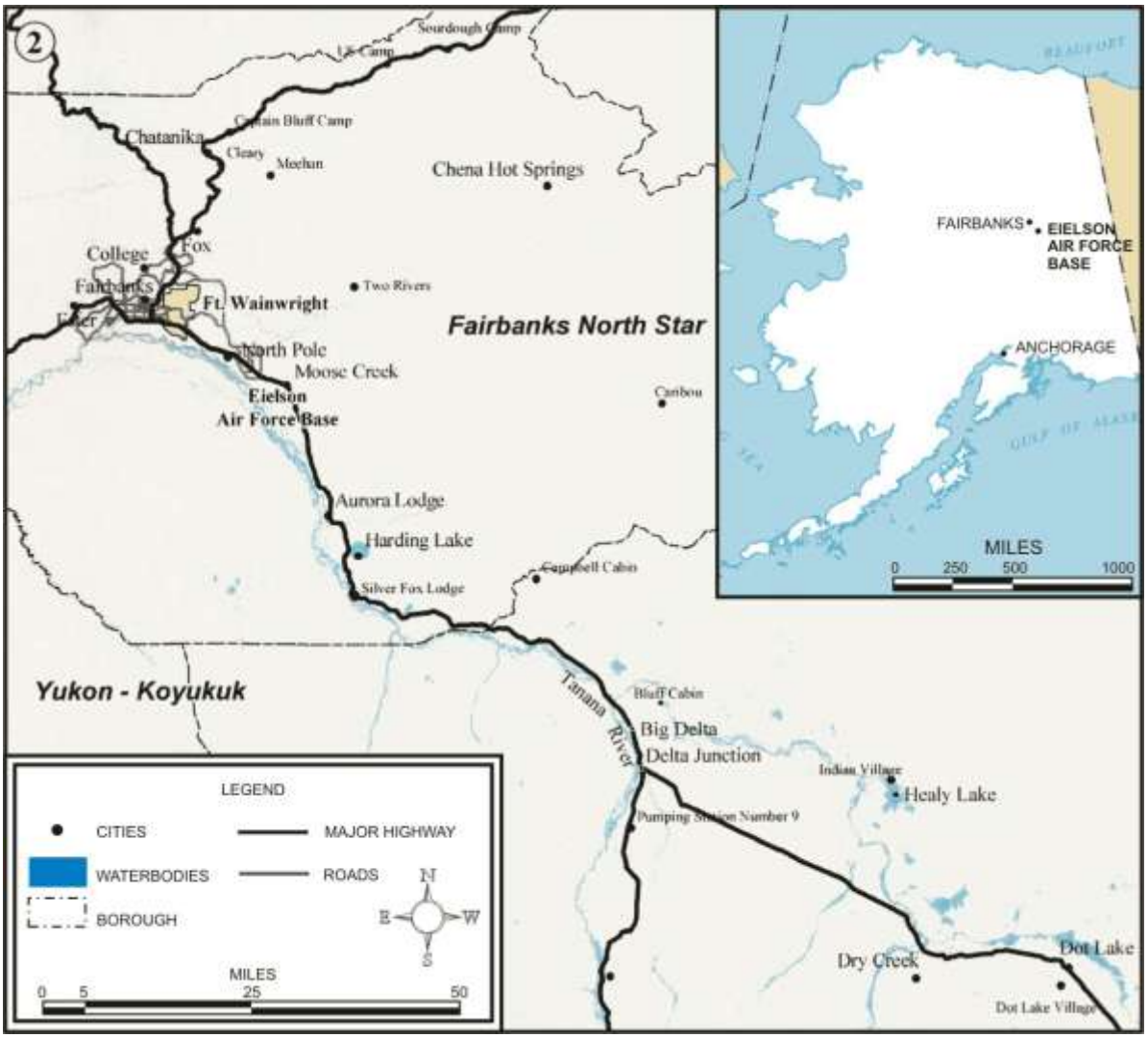

Figure 1-1 – Regional Location Map

1.3 Decision to be Made

1.3.1 As required by Air Force Instruction 32-7061, an *Environmental Impact Analysis Process* (EIAP) must be completed to determine the environmental consequences of the proposed 2005 BRAC Commission recommendations signed into law on November 9, 2005. The completion of this EA is intended to satisfy these requirements. The proposed action and the no action alternative will be addressed in detail in Section 2.0 of this document. A description of the resources involved with each alternative is provided in Section 3.0, and the impacts that could result from each one are discussed in Section 4.0.

1.3.2 The EA, a draft Finding Of No Significant Impact (FONSI), if applicable, and all other appropriate planning documents will be provided to the Pacific Air Forces (PACAF) Installation and Mission Support Commander, the decision maker, for review and consideration. If, based on a review by the decision maker of all pertinent information, a FONSI is proposed, a notice of intent (NOI) will be published in accordance with 40 CFR 1506.6. All interested parties will have 30 days to comment on the decision to the Air Force. If, at the end of the 30-day public comment period, no substantive comments are received, the decision maker will sign the FONSI.

1.3.3 Two Executive Orders (EOs), 11988 (Floodplain Management) and 11990 (Protection of Wetlands), require the heads of federal agencies to find that there is no practicable alternative before the agency takes certain actions impacting wetlands or floodplains. The Proposed Action and No Action Alternative would not result in impacts to 100-year floodplains or wetlands.

1.4 NEPA Actions That Influence This Assessment

1.4.1 *Alaska Military Operations Areas-Environmental Impact Statement (EIS) 11th Air Force, 1995*. This EIS was prepared to address the environmental impacts of restructuring the Air Force Special Use Airspace in Alaska. This document assesses airspace management, biological resources, recreational resources, subsistence, land use, air quality, and noise as they relate to operation of military aircraft.

1.4.2 *Eielson Air Force Base Infrastructure Development in Support of RED FLAG-Alaska Environmental Assessment US Air Force 2007.* This EA analyzes the potential environmental effects of specific identified projects in support of RED FLAG-Alaska at Eielson AFB, as well as infrastructure projects within the developed portion of the base property.

1.4.3 *Alaska Army Lands Withdrawal Renewal-Final Legislative EIS, US Army 1998.* This EIS assesses the environmental consequences associated with the continued military use of US Army lands and the renewal of the withdrawal of the Fort Wainwright Yukon Maneuver Area, Fort Greely West Training Area, and Fort Greely East Training Area.

1.4.4 *Integrated Natural Resources Management Plan Eielson Air Force Base, Alaska 2003-2008.* This document addresses natural resource management on Eielson Air Force Base and provides guidance for management activities and long-range planning on Eielson managed lands.

1.4.5 *Integrated Cultural Resources Management Plan. Eielson AFB, Alaska, 2006 to 2011.* This document addresses cultural resource management on Eielson Air Force Base.

1.4.6 *Environmental Assessment of Major Flying Exercises in Alaska, 11th Air Force, Elmendorph Air Force Base, Alaska 1993.* This EA analyzes the potential environmental effects associated with conducting major flying exercises in Alaska airspace.

1.5 Project Scoping/Significant Issues

1.5.1 On December 19, 2006 a scoping meeting was held at Eielson AFB to identify and discuss issues considered pertinent to the proposed BRAC recommendations of transferring the Galena FOL to Eielson AFB. Subsequent scoping meetings were held to identify issues with the transfer of A/OA-10 aircraft from Eielson AFB to three other locations. Scoping participants are listed in Section 5.2. Issues raised in the scoping meeting are briefly discussed in this section and discussed in greater detail in Sections 2.0, 3.0, and 4.0.

1.5.2 Infrastructure: Under the Proposed Action, renovations to existing facilities would be required. These would be interior, as well as, exterior renovations. All proposed actions would be within the developed portion of the base and environmental impact analysis would be addressed under the auspices of an existing programmatic EA.

1.5.3 Economic Impacts: The proposed BRAC actions will result in substantial reductions in military related spending in the Fairbanks North Star Borough. This will be addressed in the analysis.

1.5.4 Hazardous Material and Hazardous Waste: The proposed renovations may result in generation of hazardous waste such as contaminated soils, asbestos, and lead paint.

1.6 Federal and State Permits or Licenses Needed to Implement the Project

1.6.1 Eielson AFB is guided by relevant statutes (and their implementing regulations) and Executive Orders (EO) that establish standards and provide guidance on environmental and natural resources management and planning (Table 1-2).

Table 1-2

Major Environmental Statutes, Regulations, and Executive Orders Applicable to Federal Projects	
Environmental	***Statutes***
Noise	Noise Control Act of 1972 (PL 92-574) and Amendments of 1978 (PL 95-609); USEPA, Subchapter G-Noise Abatement Programs (40 CFR 201-21 1)
Air	Clean Air Act (CAA) of 1970 (PL 95-95), as amended in 1977 and 1990 (PL 91-604); USEPA, Subchapter C-Air Programs (40 CFR 52-99)
Environmental Justice	Executive Order 12898-Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations; Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045)

Water	Federal Water Pollution Control Act of 1972 (PL 92-500) and Amendments; Clean Water Act (CWA) of 1977 (PL 95-217); USEPA, Subchapter D-Water Programs (40 CFR 100-145); Water Quality Act of 1987 (PL 100-4); USEPA, Subchapter N-Effluent Guidelines and Standards (40 CFR 401-471); Safe Drinking Water Act of 1972 (PL 95-923) and Amendments of 1986 (PL 99-339); USEPA, National Drinking Water Regulations and Underground Injection Control Program (40 CFR 141-149)
Biological Resources	Migratory Bird Treaty Act of 1918; Fish and Wildlife Coordination Act of 1958 (PL 85-654); Sikes Act of 1960 (PL 86-97) and Amendments of 1986 (PL 99-561) and 1997 (PL 105-85 Title XXIX); Endangered Species Act of 1973 (PL 93-205) and Amendments of 1988 (PL 100-478); Fish and Wildlife Conservation Act of 1980 (PL 96-366); Lacey Act Amendments of 1981 (PL 97-79)
Biological Resources	Migratory Bird Treaty Act of 1918; Fish and Wildlife Coordination Act of 1958 (PL 85-654); Sikes Act of 1960 (PL 86-97) and Amendments of 1986 (PL 99-561) and 1997 (PL 105-85 Title XXIX); Endangered Species Act of 1973 (PL 93-205) and Amendments of 1988 (PL 100-478); Fish and Wildlife Conservation Act of 1980 (PL 96-366); Lacey Act Amendments of 1981 (PL 97-79)
Wetlands and Floodplains	Section 401 and 404 of the Federal Water Pollution Control Act of 1972 (PL 92-500); USEPA, Subchapter D-Water Programs 40 CFR 100-149 (105 ref); Floodplain Management-1977 (Executive Order 11990); Emergency Wetlands Resources Act of 1986 (PL 99-645); North American Wetlands Conservation Act of 1989 (PL 101-233)
Cultural Resources	National Historic Preservation Act of 1966 (16 USC 470 et seq.) (PL 89-865) and Amendments of 1980 (PL 96-515) and 1992 (PL 102-575); Protection and Enhancement of the Cultural Environment-1971 (Executive Order 11593); Indian Sacred Sites-1966 (Executive Order 13007); American Indian Religious Freedom Act of 1978 (PL 94-341); Antiquities Act of 1906; Archaeological Resources Protection Act (ARPA) of 1979 (PL 96- 95); Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (PL 101-601)
Solid/Hazardous Materials and Waste	Resource Conservation and Recovery Act of 1976 (PL 94-5800), as Amended by PL 100-582; USEPA, subchapter I-Solid Wastes (40 CFR 240-280); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601) (PL 96- 510); Toxic Substances Control Act (PL 94-496); USEPA, Subchapter R-Toxic Substances Control Act (40 CFR 702-799); Federal Insecticide, Fungicide, and Rodenticide Control Act (40 CFR 162-180); Emergency Planning and Community Right-to-Know Act (40 CFR 300-399)

1.6.2 Construction and renovation of facilities associated proposed action would require permits from various regulatory agencies. Since the site is greater than 1 acre, a National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge permit would be required prior to construction. This permit would require that a SWPPP be prepared and a Notice of Intent (NOI) be filed with the Environmental Protection Agency (EPA). Furthermore, compliance with the Operational Safety and Health Administration (OSHA) guidelines (29 CFR 1910 for General

Industry and 29 CFR 1926 for Construction) would be required during the renovation of facilities.

1.6.3 Prior to demolition/renovations or additions to buildings, asbestos surveys are required by Air Force regulation. For the removal of asbestos and/or lead based paint, a notification process with the United States Environmental Protection Agency (EPA), and the base asbestos and lead-based paint coordinator is required. Removal would be contracted out to state-certified and licensed contractors. Contractors would obtain the necessary permits for the removal, handling, and transportation of asbestos. Contractors must have access to a permitted landfill for disposal of asbestos.

1.6.4 Excavated soils would need to be sampled using approved field screening methods to test for petroleum, oil, and lubricant (POL) contamination. In the event that soil contaminated soils are encountered, approval would need to be obtained from CES/CEV and ADEC prior to removal and transport of contaminated soils.

2.0 Description of the Proposed Action and Alternatives

Section 2.0 provides a description of alternatives considered to achieve the purpose and need described in Section 1.0. The proposed action and the no action alternative will be addressed. A summary of the environmental consequences for these alternatives will also be discussed.

2.1 Proposed Action – Implement all BRAC 2005 recommendations proposed for Eielson AFB, including transfer of all currently assigned A/OA-10 Aircraft to other Air Force Installations and movement of Galena Forward Operating Location Combat Alert Cell functions to Eielson AFB.

2.1.1 Currently the 355 FS operates 18 A/OA-10 aircraft at Eielson AFB. The 354th Fighter Wing (FW), of which the A/OA-10 aircraft are an integral part, operates, maintains, and trains combat forces in close air support and interdiction missions in support of the war plans in three operational theaters. The 354 FW's mission is to train and equip personnel for close air support of ground troops in an arctic environment. The BRAC 2005 actions would move these aircraft from Eielson AFB to two other operational units. Twelve aircraft would go to Moody Air Force Base, Georgia and three to Barksdale Air Force Base, Louisiana. Two additional aircraft would be placed in backup inventory. Military personnel currently associated with operation and support of the A/OA-10s would be transferred with the aircraft.

2.1.2 Movement of the A/OA-10 aircraft the two bases in the lower 48 would function to consolidate Air Force A/OA-10 operations and thereby save money. The existing A/OA-10 aircraft operations at Moody would be expanded resulting in a more efficient unit. The addition of aircraft at Barksdale would serve to locate the O/OA-10 near Army units that they would be associated with in real world war scenarios. At Eielson AFB, the facilities that would be vacated by the A/OA-10 aircraft departure would be taken over and utilized by transient aircraft that will be at Eielson AFB in conjunction with the RED FLAG-Alaska (RF-A). These facilities include two 8-bay hangers and associated buildings.

Figure 2-1 – 8-Bay Hanger

2.1.3 The Alaskan NORAD Region (ANR) conducts aerospace control within its area of operations and contributes to NORAD's aerospace warning mission. ANR is one of three North American Aerospace Defense Command (NORAD) regions. The other two subordinate regional headquarters are located at Canadian Forces Base, Winnipeg, Manitoba, and Tyndall Air Force Base, Florida. NORAD is the bi-national Canada- U.S. command that continuously provides worldwide detection, validation and warning of a ballistic missile attack on North America and maintains continental detection, validation, warning and aerospace control of air-breathing threats to North America, to include peacetime alert levels and appropriate aerospace defense measures to respond to hostile actions against North America.

2.1.4 With its headquarters located at Elmendorf Air Force Base, Alaska, ANR provides an ongoing capability to detect, validate, and warn of any aircraft and/or cruise missile threat in its area of operations that could threaten North American security. By maintaining surveillance of Canadian and U.S. airspace, ANR is able to determine what goes on in and near North American airspace 24 hours a day, seven days a week. Aerospace control requires capabilities to intercept, shadow, escort, divert, direct landings, and if necessary, use force up to and including the destruction of airborne objects.
2.1.3 The 3rd Operations Support Squadron (OSS) based at Elmendorph AFB, operating under ANR, is assigned the Combat Alert Cell mission that operates in a state of readiness to include daily air sovereignty in peacetime, contingency and/or deterrence in times of tension, and active air defense against manned and unmanned air-breathing airborne vehicles in times of crisis.

2.1.4 Under the Proposed Action, the Combat Alert Cell FOL function would be transferred from Galena Airfield to Eielson AFB. FOL functions include providing temporary aircraft hanger space, squadron support crew housing, and facility, maintenance and logistical support as required for the CAC. It is proposed that the 3rd OSS would utilize Eielson AFB 3-5 times per year as a FOL facility. It is anticipated that each event would be 1-2 weeks in duration with an accompanying contingency consisting of 3-6 F-15C aircraft and a support crew of up to 30 personnel (flight, security and support crews). Eielson AFB could be used as a FOL for the following purposes:

F-15 Jet

- Conduct training exercises;
- Temporary storage of aircraft (i.e. maintenance at Elmendorph AFB etc.); and
- Staging area during times of perceived or real threat.

2.1.5 Building 1300 was identified as the facility best suited to provide necessary requirements (hanger space, housing facilities) for the Proposed Action. Building 1300 is located at the south end of the base (Figure 2-1). The building footprint occupies approximately 14,400 square feet and is serviced by base utilities (water, heat, electric) and a septic system for wastewater. The building has an asphalt taxiway, concrete apron and four (4) large aircraft bays. Additional aircraft parking is available outside the hanger. The second and third floors are designated for office and housing space. A portion of building is currently being used by the Eielson AFB Fire Department to house equipment and personnel to provide fire protection for the base's south

loop. During periods of CAC use, the Fire Department would vacate the facility and use their primary station located on Flightline Avenue to provide fire protection for the south loop.

2.1.6 Under the proposed action, interior and exterior building renovations/modifications would be required on Building 1300 (Table 2-1) with renovations planned to begin in summer of 2008. Communication upgrades are required for mission and logistical support of CAC with Elmendorph AFB. Renovation (removal and replacement) of asphalt and concrete pavement is necessary to reduce generation of foreign objects (jet engine intake).

North-West Side of Building 1300

2.1.7 One time renovation costs to Building 1300 in support of the Proposed Action are estimated at 8.7M. Annual operating expenses for 3rd OSS CAC functions occurring at Eielson AFB are estimated at 1.2M – 2.0M. The Proposed Action will not result in a loss nor gain of permanent employment at Eielson AFB.

Table 2-1 Proposed Building 1300 Renovations

Bldg. Interior
1. Upgrade communication control center (equipment, communication lines). 2. Improve energy efficiency (heating, insulation). **Estimated Costs = 5.2M**
Bldg. Exterior
3. Remove 93,375 square feet of taxiway asphalt paving and replace with 107,325square feet of asphalt. 4. Remove 78,600 square feet of concrete building apron and replace with 45,350 square feet of concrete. 5. Surface drainage upgrades to include removal and replacement of 310 lineal feet of 24" storm drain. 6. Taxiway and apron lighting upgrades. **Estimated Costs = 3.5 M**
Total Estimated Costs = 8.7M

2.1.8 All asphalt removed during demolition of taxiway will be recycled and reused during repaving. Concrete removed for apron demolition will hauled to base landfill for disposal. During excavation, all soils will be field screened for contamination. In the event that

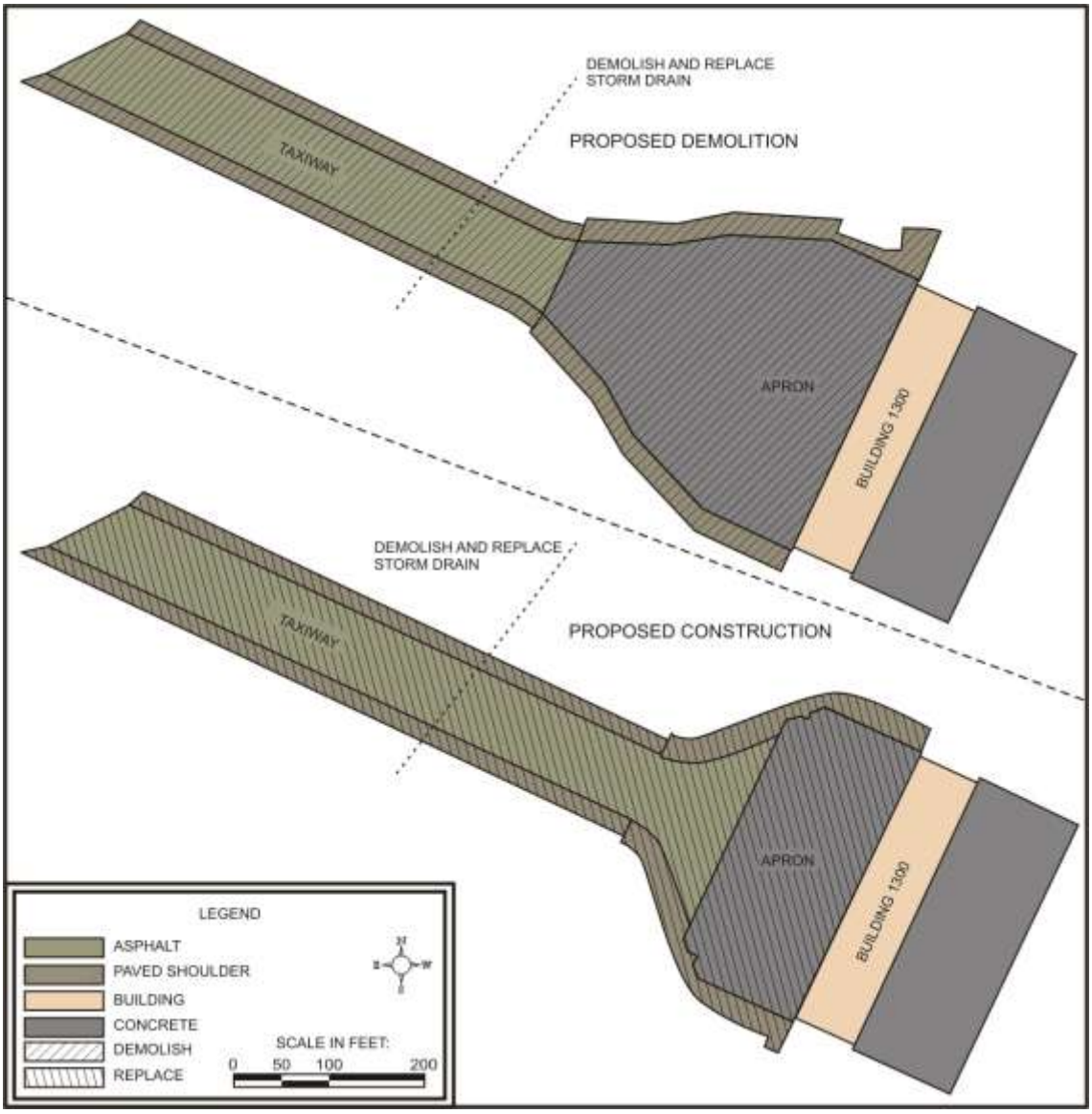

Figure 2-1

contaminated soils are encountered, soils will be excavated, removed and transported off-site for thermal remediation. The proposed action would disturb approximately 900 square feet of grass vegetation for excavation associated with on-site drainage improvements.

2.2 No Action Alternative

The Council on Environmental Quality's (CEQ) regulations require inclusion of a no action alternative. Under the No Action Alternative, Eielson AFB would operate in its current status. However, since the relocation of Galena FOL to Eielson AFB has been mandated by Congress and the President, the No Action Alternative is not a viable alternative, but will serve as a baseline against which the impacts of the proposed action can be evaluated.

2.3 Other Alternatives Considered

No other alternatives were considered under this EA

2.4 Impact Summary Matrix

Table 2-2
Summary of Comparison of Environmental Consequence

Resource Category	***Proposed Action-BRAC Realignment***	***No-Action Alternative***
Noise	Demolition and construction of facilities for the CAC would be localized and temporary. Noise from occasional flight traffic (3-5 time per year) would be short-term in duration. Transfer of A/OA-10 aircraft would result in overall noise reduction.	Baseline conditions would continue within current contours for most of the year. If RF-A increases the amount of transient aircraft, increases in noise during those periods may occur.
Air Quality	Emissions generated by construction, demolition, and paving associated with the CAC would be localized and temporary. Maximum emissions of any criteria pollutant would not exceed *de minimis* thresholds. Emissions from aircraft would be temporary. Transfer of A/OA-10 aircraft would result in overall reduction of aircraft emissions. Increased RF-A exercises could negate that reduction.	No change to existing emissions unless increases in numbers of transient aircraft associated with RF-A exercises occurs.
Socioeconomics and Infrastructure	Arrival of the CAC would not result in permanent changes in employment. Loss of O/OA-10 aircraft and associated personnel would result in the loss of 198 active duty military positions and 32 civilian positions. This could translate into a direct loss in the local economy of $12 million and 68 jobs that are dependent on the military presence. This represents a decrease of 8 per cent from previous years.	No change to existing socioeconomic resources or infrastructure.
Water and Soil Resources	CAC related construction and demolition activities would disturb 120 cubic yards of upland soils for drainage improvements. Approximately 3.94 acres of underlying soils will be exposed during asphalt and concrete removal. Impacts would be minimized by use of best management practices required by the base and permits. The transfer of A/OA-10 aircraft from Eielson AFB will reduce demand on water resources associated with the base water systems.	Ongoing activities at Eielson AFB would continue at baseline levels; no additional effects on water and soils resources would occur. If RF-A increases transient aircraft numbers, some increases on water resources may occur.
Biological Resources	No adverse impacts to vegetation or wildlife from the Proposed Action. Approximately 3.9 acres of vegetation will be disturbed for CAC construction. Transfer of A/OA-10 aircraft will not impact biological resources.	No change to current baseline conditions on Eielson AFB.
Cultural Resources	All of Eielson AFB has been inventoried with results subjected to consultation under Section 106 of the NHPA. No eligible or National Register properties are in the Area of Potential Effect.	The effect on the environment would be unchanged relative to baseline.

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3.0 Affected Environment

Section 3.0 describes the existing environment and resource components that would be impacted by the proposed project and the alternatives. The resources discussed in this section are presented as a baseline for comparisons of environmental consequences. Resources discussed in this section are as follows:

- Physical Resources, which include general site location, topography, geology, soils, climate, air quality, ground and surface water, wetlands, visual resources, noise, hazardous material and waste management, and infrastructure improvements.
- Biological Resources, which includes vegetation, wildlife, fish, threatened or endangered species, and wetlands.
- Cultural Resources including Archeological and Historical Resources.
- Socioeconomic Factors.

3.1 Physical Resources

3.1.1 General Site Location

3.1.1.1 Eielson AFB is located 23 miles southeast of Fairbanks, Alaska. The base installation comprises 19,790 acres of federal land in Interior Alaska (Figure 1-1). The base is bordered by the Yukon Training Area (Fort Wainwright Army range lands) to the east. The city of North Pole and residential community of Moose Creek are located northwest of Eielson AFB and the community of Salcha to the south.

3.1.1.2 Land uses within the base developed area (BDA) include military industrial, commercial, and residential (base housing). Building 1300 is located at the southern end of the BDA (Figure 3-1) at 550 feet above Mean Sea Level (MSL).

3.1.2 Topography

The portions of the base that will be most affected by the BRAC actions lies on an ancient floodplain terrace of the Tanana River. Building 1300 is located outside the designated 100-year floodplain limit. The site is situated on the extreme southern edge of the Yukon-Tanana Uplands physiographic province and east of the Tanana Valley Lowlands province. The land slopes gently towards the Tanana River which is 5 miles to the southwest. The land is generally flat with a gradient of less than 5-6 ft/mile. The facilities that will be vacated by the A/OA-10 lies immediately adjacent to the flightline.

3.1.3 Geology

During the most recent ice age (Wisconsonin), the area in the vicinity of Eielson was not glaciated. The majority of the subsurface geologic formations of the central plateau of Alaska are primarily from the Permian and Devonian periods of the Paleozoic era. The hills to the northeast of the base are composed of Precambrian and Paleozoic-age schists, micaceous

quartzites, and subordinate phyllite and marble. These formations have been locally intruded by a series of Cretaceous lower tertiary intrusions. Many of surrounding hills support a thick loess mantle.

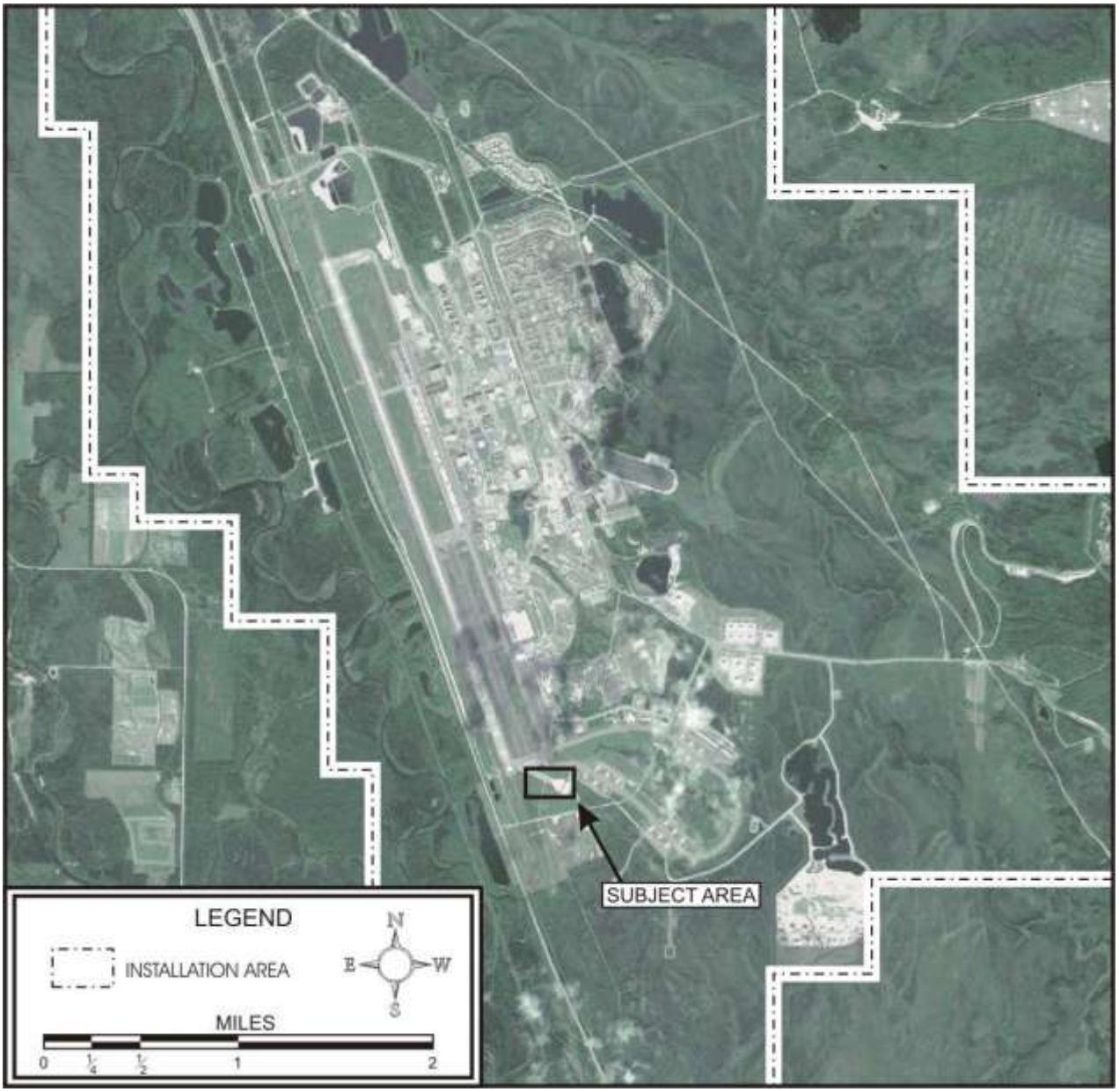

Figure 3-1

3.1.4 Soils

3.1.4.1 Soils in the Tanana River Valley consist of unconsolidated silty sands and gravels, organic and sandy silts, and clays. Floodplain soils nearest the active channels are sandy with a thin silt loam layer on the surface. On higher terraces, the soils become predominately silt from the Salchaket series. Along older river terraces, silt loam soils, which contain significant organic

components, often dominate. There soils tend to be cold and wet and are generally underlain by permafrost. Approximately two-thirds of Eielson is covered with soils containing discontinuous permafrost. This preponderance of permafrost soils contributes to the large percentage of vegetated wetlands occurring on undeveloped base lands. Soils within the proposed project area consist of unconsolidated fill material.

3.1.4.2 Approximately 120 cubic yards of unconsolidated fill material will be disturbed with the proposed drainage improvements around Building 1300. In addition, approximately 3.94 acres of underlying soils will be exposed during removal of asphalt taxiway and concrete apron.

3.1.5 Climate

3.1.5.1 The area surrounding Eielson AFB is classified as having a continental Subarctic climate. This is characterized by a wide range of extreme temperature changes from summer to winter, large mean annual diurnal temperature changes, and extreme seasonal contrasts in sunlight duration. The region typically has clear skies and cold temperatures (lows of -60 F, highs of +40 F) in winter and hot (lows of +30 F, highs of +90 F), dry summers. This results in a low relative humidity and a high evaporation rate of surface waters and a high sublimation rate of ice and snow. Annual precipitation averages slightly more than 12 inches. The frost-free period is generally from the third week in May until the end of August.

3.1.5.2 May and June have the highest winds with average wind speeds of 7.7 and 7.2 miles per hour, respectively. During most of the year, the prevailing wind direction is from the north at an average of 5.15 miles per hour. However, in June and July the wind direction is typically from the southwest. Wind speed can vary with elevation and roughness of surrounding terrain.

3.1.6 Air Quality

3.1.6.1 Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin, and local and regional meteorological influences. The significance of a pollutant concentration in a region or geographical area is determined by comparing it to federal and/or state ambient air quality standards. Under the authority of the Clean Air Act (CAA), the United States Environmental Protection Agency (USEPA) has established nationwide air quality standards to protect public health and welfare, with an adequate margin of safety.

3.1.6.2 These federal standards, known as the National Ambient Air Quality Standards (NAAQS), represent the maximum allowable atmospheric concentrations and were developed for six "criteria" pollutants: ozone (O3), nitrogen dioxide (NO2), carbon monoxide (CO), respirable particulate matter less than or equal to 10 micrometers in diameter (PM10), sulfur dioxide (SO2), and lead (Pb). The NAAQS are defined in terms of concentration (e.g., parts per million [ppm] or micrograms per cubic meter [$\mu g/m^3$]) determined over various periods of time (averaging periods). Short-term standards (1-hour, 8-hour, or 24-hour periods) were established for pollutants with acute health effects and may not be exceeded more than once a year. Long-term standards (annual periods) were established for pollutants with chronic health effects and may never be exceeded.

3.1.6.3 Based on measured ambient criteria pollutant data, the USEPA designates areas of the US as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (non-attainment). Upon achieving attainment, areas are considered to be in maintenance status for a period of 10 or more years. Areas are designated as unclassifiable for a pollutant when there is insufficient ambient air quality data for the USEPA to form a basis of attainment status. For the purpose of applying air quality regulations, unclassifiable areas are treated similar to areas that are in attainment of the NAAQS.

Table 3-1
National and Alaska Ambient Air Quality Standards

Air Pollutant	*Averaging Time*	*NAAQS*	
		Primary	***Secondary***
Carbon Monoxide (CO)	8-hour 1-hour	9 ppm (10 jtg/m^3) 35 ppm (40 jtg/m^3)	--- - --
Nitrogen Dioxide (NO2)	AAM	0.053 ppm (100 jtg/m^3)	0.053 ppm (100 jtg/m^3)
Sulfur Dioxide (SO2)	AAM 24-hour 3-hour	0.03 ppm (80 jtg/m^3) 0.14 ppm (365 jtg/m^3) ---	--- --- 0.5 ppm (1,300 jtg/m^3)
Particulate Matter (PM10)	AAM 24-hr	50 jtg/m^3 150 jtg/m^3	50 jtg/m^3 150 jtg/m^3
Particulate Matter (PM2.5)[1]	AAM 24-hour	15 jtg/m^3 35 jtg/m^3	15 jtg/m^3 35 jtg/m^3
Ozone (O3)[2]	8-hour	0.08 ppm	0.08 ppm
Lead (Pb) & Lead Compounds	3-month	1.5 jtg/m^3	1.5 jtg/m^3

Note: 1. The PM 2.5 standard (particulate matter with a 2.5 jtm diameter or smaller) was promulgated in December 2004 and is in effect as of April 5, 2005. The standard will be implemented over the next few years.

Note: 2. The 8-hour O3 standard replaced the 1-hour standard in June 2005. AAM = Annual Arithmetic Mean; ppm = parts per million; jtg/m^3 = micrograms per cubic meter.
Source: 40 CFR 50.

Table 3-2 - Actual Emissions (2005) at Eielson AFB

Description	**ANNUAL EMISSIONS (TONS PER YEAR)**					
	PM10	***NOx***	***CO***	***SO2***	***VOC***	***Hazardous Air Pollutants***
Boilers – Coal Fired	6.4	347.6	99.6	292.7	4.5	10.4
Boilers – Other	0.03	0.17	0.04	0.18	0.005	0.0004
Internal Combustion Engines	0.31	18.0	12.9	1.1	6.4	0.25
Hush House	0.62	9.2	9.3	0.70	5.5	0.08
Waste Water Treatment Plant (Flare)	0.08	0.04	0.005	0.01	0.01	0.32
Incinerator	0.28	0.03	0.19	0.00	0.14	

Portable Asphalt/Crusher (Engines)	0	0	0	0	0	0
Tanks & Fuel Loading					3.0	0.39
Miscellaneous Chemicals						2.1
Paint Booths						0.44
EOD			0.04			0.00002
Small Arms Firing Range			0.03			0.0004
Fire Training	0.00 1	0.008	0.002		0.003	0.000 1
Total	7.7	374.9	122.1	294.6	19.5	14.0

PM10 = particulate matter less than or equal to 10 micrometers in diameter; NO_x = nitrogen oxides; CO = carbon monoxide; SO2 = sulfur dioxide; VOC = volatile organic compound
Source: CH2M Hill 2006.

3.1.6.4 A review of federally published attainment status for Alaska indicates that the Fairbanks North Star Borough is in attainment of NAAQS for all criteria pollutants except for CO. Eielson AFB is located south of this area and therefore is considered to be in attainment.

3.1.7 Ground and Surface Water

3.1.7.1 The upper unconfined aquifer extends from the ground surface to a depth of about 200 feet. Groundwater at the Eielson sites typically occurs at depths of less than 10 feet below ground surface and flows regionally toward the north-northwest (HLA, 1989). Horizontal groundwater gradients are reported to be 4 to 6 feet per mile at the base, resulting in relatively slow groundwater movement. The hydraulic properties of the aquifer are typically high (approximately 200 feet per day) for sand and gravel sediments. Groundwater within the sedimentary aquifer occurs under unconfined to semi-confined conditions. No distinct aquitard horizons have been identified in the unconsolidated deposits. Shallow groundwater beneath the sites is classified as a sole source aquifer and provides the base with drinking water as well as domestic, irrigation, and industrial water supplies. The base monitors groundwater quality in a number of locations as part of its IRP.

3.1.7.2 Water bodies within Eielson AFB boundaries include streams, wetlands, and lakes. There are approximately 28 miles of streams; 10,133 acres of wetlands; 12 lakes (Lilly Lake is the only natural lake); 80 ponds (10 naturally occurring and 70 man-made) totaling 560 acres; and 6,770 acres of floodplains on the main base. The man-made lakes and ponds were created during the excavation of gravel deposits for use as fill material for construction projects on the BDA and surrounding satellite facilities on base. Surface drainage on Eielson is generally in a north-northwest direction and parallel to the Tanana River. Five streams flow through the base and discharge into the Tanana River via Piledriver Slough.

3.1.7.3 Piledriver and Garrison sloughs are the two largest streams in the vicinity of the airfield. Piledriver Slough, which discharges into the Tanana River, is located along the western edge of Eielson, approximately 4,000 feet west of the airfield, and flows parallel to the runway. Approximately 12 miles of Piledriver Slough occurs on Eielson. The slough receives no runoff from the urban, developed area of the base and has good water quality. Garrison Slough is a small drainage that goes through the heart of the industrial area of the base. In addition to normal surface runoff, Garrison Slough also receives input from groundwater and discharge

water from the drinking water treatment plant that is located adjacent to the slough approximately 2 miles downstream from the project area. The course of Garrison Slough has been channelized and straightened over the years as the base has expanded and developed and encroached on the stream. Water quality of Garrison Slough is generally good with the exception of elevated levels of polychlorinated biphenyls (PCBs) in a segment that runs through main cantonment area. Fishing in that portion of the stream has been designated off-limits because of the potential for bioaccumulation of PCBs in fish tissue.

3.1.8 Wetlands

3.1.8.1 Wetlands are a predominating physical feature of Eielson AFB lands. The discontinuous permafrost of the Tanana River Valley provides a setting for extensive forested (black spruce) wetlands within Eielson AFB property. Based on current delineation figures for wetlands on Eielson AFB, this constitutes 51.5 percent of the total acreage. This includes 10,197 acres of vegetated wetlands and 723 acres of lakes, ponds and streams. The proposed actions are not located in wetlands.

3.1.8.2 These wetlands provide habitat for a variety of waterfowl and aquatic species. Managed quarrying has led to an expansion of open water (lacustrine) wetlands within base property, improving habitat for wildlife. Quarried material is provided to base uses, including supporting construction activites within the BDA. Base development and substrate improvements ultimately enhance wetlands.

3.1.9 Visual Resources

Eielson AFB buildings generally do not exceed three stories in keeping with the base and surrounding visual environment. The base maintains Architectural Compatibility Standards for continuity amongst the buildings. Landscape development consists of lawns and planting of native plants throughout the BDA.

3.1.10 Noise

The primary sources of noise at Eielson AFB include military aircraft, vehicle traffic, construction, and from military support operations. Eielson AFB has implemented noise abatement procedures, including timing and runway restrictions to reduce the noise that affects Eielson AFB and surrounding areas. Traffic in the cantonment areas of Eielson AFB usually peaks in the morning (before 8:00 am) and between 4:00 pm and 5:30 pm. On-base noise contours can exceed 80 decibels (dB) in the vicinity of the flightline, however, the noise level contours are 70 dB or lower in the closest residential area, Moose Creek, just north of the base. Housing is not recommended within 65 dB or greater noise contours. Existing noise contours

associated with Eielson's airfield are shown in Figure 3-2 (next page). Based on noise contours, Building 1300 is exposed to noise levels of 70-80 dB.

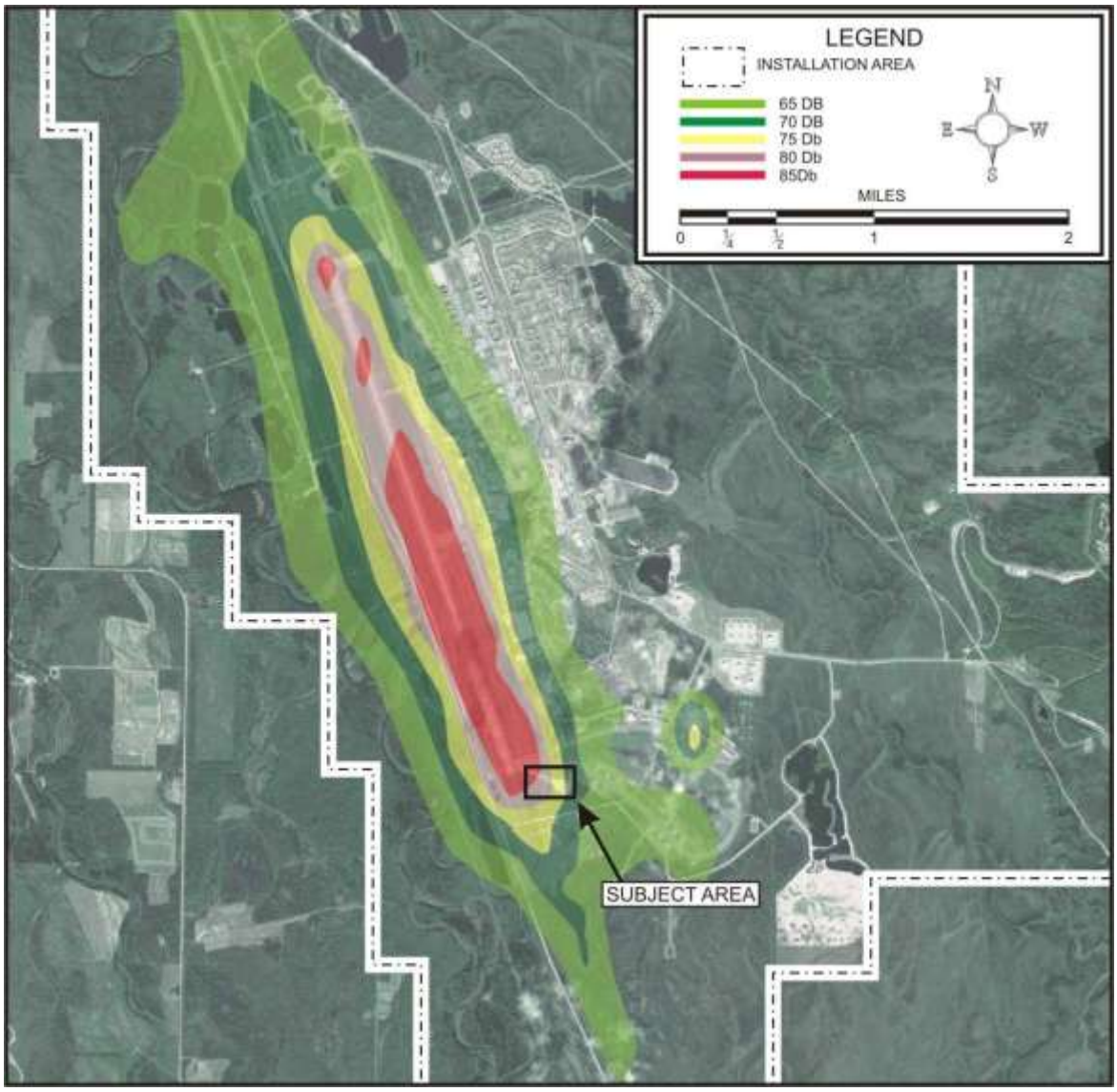

Figure 3-2

3.1.11 Hazardous Materials and Waste Management

3.1.11.1 Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Occupational Safety and Health Administration (OSHA); and the Emergency Planning and Community Right-to-Know Act (EPCRA). Hazardous materials have been defined in AFI 32-7086, Hazardous Materials Management, to include any substance with special characteristics which could harm people, plants, or animals. Hazardous waste is defined in the Resource Conservation and Recovery Act (RCRA) as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that could or do pose a substantial hazard to human health or the

environment. Waste may be classified as hazardous due to its toxicity, reactivity, ignitibility, or corrosivity. In addition, certain types of waste are "listed" or identified as hazardous in 40 CFR 263.

3.1.11.2 Eielson's Hazardous Waste Management Plan (Air Force 2006a) provide for centralized management of the procurement, handling, storage, and issuing of hazardous materials and turn-in, recovery, reuse, or recycling of hazardous materials. Processes in place ensure review and approval by Air Force personnel so users are aware of exposure and safety risks. Base management plans further serve to ensure compliance with applicable federal, state, and local regulations.

3.1.11.3 Aircraft flight operations and maintenance, as well as installation maintenance, require the storage and use of many types of hazardous materials. These materials, such as flammable and combustible liquids, include acids, corrosives, caustics, glycols, compressed gases, aerosols, batteries, hydraulic fluids, solvents, paints, pesticides, herbicides, lubricants, fire retardants, photographic chemicals, alcohols, and sealants. Under RCRA and AF regulations, generators of hazardous wastes (HW) are responsible for properly segregating, storing, labeling, marking, packaging, and transferring all HW for disposal from the time of generation at a facility to transfer to Eielson AFB's 90-day storage facility.

3.1.11.4 Asbestos-containing materials (ACMs) are those materials that contain greater than 1 percent asbestos. Friable, finely divided, and powdered wastes containing greater than 1 percent asbestos are subject to regulation. Nonfriable ACMs, such as floor tiles, are considered to be nonhazardous, except during removal and/or renovation and are not subject to regulation. Eielson's Asbestos Management and Operations Plan (Air Force 2006b) provides guidance for the identification of ACMs during renovation or remodeling projects and the management of asbestos wastes. The design of building alteration projects and requests for self-help projects are reviewed to determine if ACMs are present in the proposed work area. ACM wastes are removed by the contractor and disposed of in accordance with state and federal regulations at Eielson's permitted asbestos and coal ash landfill and remediation site.

3.1.11.5 As an Air Force installation operating since World War II, Eielson AFB has a long history of past hazardous spills and other releases occurring under a variety of regulatory frameworks. Concerted action to address these issues began in 1982 with Eielson's IRP. In 1990, Eielson signed a three-party Federal Facilities Agreement (FFA) with USEPA and the State of Alaska that specified the framework and schedule for environmental cleanup efforts at Eielson AFB. The FFA identified 66 source areas. Since that time Eielson has worked diligently to restore environmentally impacted sites under the CERCLA. Of the 61 identified sites that are on base lands, all have been addressed in a Record of Decision (ROD). The 61 site cleanups were reviewed by the state and EPA and resulted in 40 receiving no further action status, 20 receiving further action/long-term monitoring with institutional controls, and 1 receiving no further action status with institutional controls (Air Force 2003).

3.1.11.6 According to records, Building 1300 is located in the Installation Restoration Program (IRP). The EPA Superfund Record of Decision dated 09/29/1992, indicated that petroleum contaminated groundwater and soil was identified in the area surrounding Building 1300 (ST49

Building 1300) and the adjoining taxiway. The source area was estimated to encompass approximately 8-acres in size and was the result of leaky underground fuel storage tanks and overfilling. Free product recovery was implemented along with long-term monitoring of the groundwater. The site is located in Operable Unit 1 (OU-1).
3.1.11.7 ADEC records indicate that when the OU-1 was signed, it established institutional controls (IC) for this site. These ICs included the following:

- prohibition on the installation or use of drinking water wells,
- requirement that all monitoring wells are secured with locks,
- any activity that may result in exposure to contaminated groundwater or moving contaminated groundwater requires approval of CES/CEV;
- any activity disturbing a remedial action requires approval of CES/CEV,
- any activity that may result in exposure to or removal of contaminated soil requires approval of CES/CEV,
- if contaminated soil or groundwater. are removed from the source, they must be disposed of or treated in accordance with regulation; and
- a requirement to notify ADEC and EPA of any proposal to change the existing land use or land use controls at the site.

3.1.11.8 As of 6/21/2005, ADEC records indicate that this site remains open under 18 AAC 75 due to remaining petroleum contamination in the groundwater, however, the site is closed under CERCLA. According to ADEC, monitoring is no longer ongoing because BTEX concentrations are below cleanup levels but that in order to close site under 18 AAC 75, confirmation sampling for DRO/GRO/RRO must be done.

3.1.11.9 Primary hazardous wastes of concern under the proposed action are lead-based paint debris and asbestos associated with the building renovation. Secondary concerns are associated with the excavation of contaminated soils during construction and their remediation.

3.1.12 Infrastructure Improvements

3.1.12.1 Eielson is situated in the Fairbanks North Star Borough and contains within its boundaries the Richardson Highway (State Highway 2), a major artery which provides direct access to the base between the cities of Fairbanks, Delta Junction, and points south. A newly constructed base entrance gate and visitor's center is located on the north end of the base and leads vehicular traffic along the Old Richardson Highway to Flight Line and Central Avenues. Flight Line and Central Avenues are the main north-south traffic routes within the BDA. Eielson AFB is accessed by the Alaska Railroad. This rail system moves freight (mainly coal) to Eielson AFB from points south.

Interior of Building 1300

3.1.12.2 Eielson AFB has its own coal-fired power/heat plant located on base. During winter months, the plant uses up to 730 tons of coal daily. Peak heat and electrical demand is currently at 76 percent of capacity. Eielson AFB also has a wastewater processing plant and a water supply distribution system to include base wells and an underground utilidor distribution system. There are eight water wells on Eielson, five of which supply potable water. All water and wastewater treatment services are performed by base personnel or contracted operations, including the base's own water treatment plant.

3.1.12.3 Site improvements for the Proposed Action include a 14,000 square foot building (footprint) with taxiway and outside aircraft apron. The building interior consists of 4 aircraft hanger bays, office space along with accommodations for housing.

3.2 Biological Resources

3.2.1 Vegetation

3.2.1.1 The vegetation of the Tanana River Valley in the vicinity of Eielson is typical of boreal forest or taiga habitats. The boreal forests of Eielson are predominantly evergreen forests dominated by balack spruce and white spruce (Picea glauca), but also include extensive stands of deciduous forests containing paper birch (Betula papyrifera), quaking aspen (Polulus tremuloides), and balsam poplar (P. balsamifera). Extensive areas of shrub and herbaceous begetation are found in wetlands, lowland areas, and the active floodplain, and are dominated by willows and other shrubs,sedges, and grasses. Bog areas are dominated by black spruce stands intermixed with peat moss (Sphagnum spp.) and cottongrass (Eriophorum vaginatum).

3.2.1.2 Vegetation in the project area has already been impacted by previous development and use. Most of the project area is a combination of asphalt and concrete. Other portions of it are grassed areas that are mowed on a regular basis during the growing season.

3.2.1.3 Occasionally, the black spruce wetlands are interspersed with wet meadows that support emergent aquatic vegetation (sedges, grasses) in conjunction with seasonally persistent shallow open water areas. This habitat is used in spring and fall by migrating waterfowl and shorebirds for resting and feeding and for nesting by resident birds on water bodies that have stable water levels. Moose forage on emergent aquatic plants and grasses associated with ponds.

3.2.2 Wildlife

3.2.2.1 The surrounding Tanana Valley provides breeding habitat for a wide variety of migratory bird species. Bird species found on Eielson include spruce grouse (Dendragapus canadensis), ruffed grouse (Bonasa umbellus), northern goshawk (Accipiter gentilis), sharp-shinned hawk (A. striatus), great horned owl (Bubo virginianus), red-tailed hawk (Buteo jamaicensis), and American kestrel (Falco sparverius). Over 20 species of waterfowl, including geese, ducks, loons, grebes, and scoters, use aquatic habitat on the installation.

The area surrounding Eielson AFB provides habitat for wildlife species typical of interior Alaska.

3.2.2.2 There are 32 species of mammals found on Eielson. Common species include moose (Alces alces), black bear (Ursus americanus), grizzly bear (U. arctos), red fox (Vulpes vulpes), lynx (Lynx canadensis), coyote (Canis latrans), snowshoe hare (Lepus americanus), marten (Martes americana), red squirrel (Tamiasciurus hudsonicus), beaver (Castor canadensis), muskrat (Ondatra zibethicus), mink (Mustela vison), meadow vole (Microtus pennsylvanicus), red-back vole (Clethrionomys rutilus), and meadow jumping mice (Zapus hudsonius).

3.2.3 Fish

3.2.3.1 Lakes and streams on Eielson contain both native fish and fish stocked by the Alaska Department of Fish and Game. Native fish found in the Tanana River drainage include chinook salmon (Oncorhynchus tshawytscha), chum salmon (O. keta), silver salmon (Oncorynchus kisutch), burbot (Lota lota), arctic grayling (Thymallus arcticus), northern pike (Esox lucius), chub (Semotilus spp.), several species of whitefish (Coregonus spp.), sheefish (Stenodus leucichthys nelma), rainbow trout (Oncorhynchus mykiss), and arctic char (Salvelinus alpinus).

3.2.3.2 The Alaska Department of Fish and Game stocks five lakes and one stream on Eielson: Grayling Lake, Hidden Lake, Polaris Lake, 28 Mile Pit, Moose Lake, Mullins Pit, and Piledriver Slough. Fish stocked by the Alaska Department of Fish and Game include rainbow trout, arctic grayling, arctic char, silver salmon, and chinook salmon. There are no known federally listed threatened or endangered fish species, fish species proposed for listing, or critical fish habitats on Eielson AFB. Fish screening prevents fish from entering Garrison Slough within the BDA.

3.2.4 Threatened or Endangered Species

No threatened or endangered species, as designated by the USFWS, typically occur or find habitat within the BDA. This was the conclusion of an Eielson contract study entitled Biological Survey, Final Report 1994, that addressed the potential for the presence of endangered species on base lands.

3.2.5 Wetlands

The discontinuous permafrost of the Tanana River Valley provides a setting for extensive forested (black spruce) wetlands within Eielson AFB property. These wetlands provide habitat for a variety of waterfowl and aquatic species.

3.3 Cultural and Historic Resources

3.3.1 A prehistoric and historic archaeological survey of large portions of Eielson AFB has been completed, and no historic properties or traditional cultural properties were identified (Gerlach et al. 1996). The areas chosen for the survey were based on a predictive model for the location of archaeological sites developed specifically for the installation (Mason et al. 1994). The results of the survey indicate there is a very low probability of site occurrence at Eielson AFB. The areas associated with the Proposed Action have been determined to not contain cultural or archeological resources. In the event that during project excavation/ construction any cultural resources were encountered, activities would cease until the resources were evaluated.

3.3.2 Two historic building inventories have been conducted at Eielson AFB (Eielson AFB 2004). Three NRHP-eligible historic districts have been identified at Eielson AFB (Eielson AFB 2004): the Flightline Historic District, with 20 contributing buildings and one contributing structure, a runway; Engineer Hill Munitions Historic District, with 8 contributing buildings; and Quarry Hill Munitions Historic District, with 21 contributing buildings. The Proposed Action is not with a historic district.

3.4 Socioeconomic Factors

Socioeconomic factors are defined as the basic attributes and resources associated with the human environment. The relevant factors related to the proposed infrastructure improvements at Eielson AFB assessed in this section include:

- Population and housing
- Economic activity
- Environmental justice

3.4.1 Executive Orders

Various Executive Orders (EO) direct federal agencies to address and assess actions affecting disadvantaged communities, minority and low-income communities, and children to include the following:

- EO 12898 - *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.* This EO directs federal agencies to address disproportionate environmental and human health effects in minority and low-income communities.
- EO 13045 - *Protection of Children from Environmental Health Risks and Safety Risks:* This EO directs federal agencies to identify and assess environmental health and safety risks to children, coordinate research priorities on children's health, and ensure that their standards take into account special risks to children.

3.4.2 Population and Housing

3.4.2.1 Eielson AFB is situated 23 miles southeast of Fairbanks, Alaska. The city of Fairbanks is located in the Fairbanks North Star Borough. Socioeconomic activities associated with the base are concentrated in the Fairbanks North Star Borough, which comprises the ROI for this analysis.

3.4.2.2 The Eielson AFB population of 6,825 persons is composed of 2,442 active duty military personnel, 3,043 military family members, 789 civilian personnel, and 551 AKANG personnel (Air Force 2005b). The military family housing inventory at Eielson AFB includes 1,476 units. Unaccompanied permanent party housing provides a total of 523 dormitory rooms. Housing for transient use includes 151 temporary duty dormitory rooms, 40 temporary living facilities, and 390 lodging rooms.

3.4.2.3 The estimated 2005 population for Fairbanks was 30,970 persons. Fairbanks makes up 35.4 percent of the Borough population of 87,560 persons and 4.7 percent of the state population of 663,661 persons (USBC 2006). Population in the region has increased 5.7 percent since 2000, compared to 5.9 percent increase for the state and 5.3 percent for the nation as a whole. According to the USBC, there were a total of 34,046 housing units in Fairbanks North Star Borough in 2005. Fairbanks and comparative populations, minority and income status is shown in table 3-3.

Table 3-3. Total Population and Populations of Concern

	Total Population	***Percent Minority***	***Percent Low-Income***	***Percent Youth***
Fairbanks	30,970	35.8%	10.5%	29.4%
Fairbanks North Star Borough	87,560	25.6%	7.8%	28.9%
Alaska	663,661	33.5%	9.9%	28.4%
United States	281,421,906	30.9%	12.4%	25.7%

Source: USBC 2006.

3.4.3 Economic Activity

3.4.3.1 Eielson AFB contributes to the Fairbanks economy through employment of military and civilian personnel and expenditures for goods and services from local businesses. In addition to base employment, annual payroll associated with Eielson AFB personnel amounts to $201 million. In FY 2005, local construction, service contracts, and purchases totaled $29 million. Eielson AFB activities are estimated to generate 1,119 indirect jobs in the region with associated wages totaling $41 million (Air Force 2005b).

3.4.3.2 Fairbanks enjoys a strong military presence in the area. Eielson AFB and Fort Wainwright contribute substantially to Fairbanks' economic development, with an estimated annual economic impact of $800 million (Fairbanks Economic Development Council 2006). Additional economic factors contributing to the Fairbanks economy include mining, education and research, tourism, and industry support activities. The civilian labor force in Fairbanks North Star Borough included 42,600 persons in 2005, of which 40,025 were employed (USBC 2005). The unemployment rate in 2005 was 6.0 percent. Median household income was $56,560, and persons below the poverty level represent 9.5 percent of the population.

3.4.4 Environmental Justice

3.4.4.1 To comply with EO 12898, ethnicity and poverty status in the vicinity of Eielson AFB were examined and compared to state and national data. Minority persons represent 35.8 percent of the Fairbanks population, compared to 25.6 percent of the borough and 33.5 percent of the state. Blacks are the predominant minority group in Fairbanks, while Alaskan Natives are the predominant minority in the borough and the state. While the aggregate racial and ethnic minority population in Fairbanks are proportionately higher than the borough and slightly higher

than the state, their incidence is relatively consistent throughout the region and is not disproportionate within the vicinity of Eielson AFB.

3.4.4.2 To comply with EO 13045, the number of children under age 18 was determined for the vicinity of Eielson AFB and compared to state and national levels. Youth make up 29.4 percent of the Fairbanks population, with no known concentrated areas of concern in the vicinity of Eielson AFB where youth might experience special health or safety risks. Children under 18 years account for 28.9 percent and 28.4 percent of the population in Fairbanks North Star Borough and Alaska, respectively.

3.4.4.3 The low-income population in Fairbanks is slightly higher than borough and state levels but less than the national level. In Fairbanks, 10.5 percent of the population is designated low-income, composed of persons and families with incomes below the poverty level. By comparison, low-income population rates for the Borough and state are 7.8 percent and 9.9 percent, respectively. Consequently, the low-income population could be considered disproportionate in Fairbanks.

3.4.4.4 To comply with EO 13045, the number of children under age 18 was determined for the vicinity of Eielson AFB and compared to state and national levels. Youth make up 29.4 percent of the Fairbanks population, with no known concentrated areas of concern in the vicinity of Eielson AFB where youth might experience special health or safety risks. Children under 18 years account for 28.9 percent and 28.4 percent of the population in Fairbanks North Star Borough and Alaska, respectively.

4.0 Environmental Consequences

4.1 Section 4.0 presents the environmental consequences of the implementation of the BRAC Commission recommendations at Eielson AFB for each of the resource areas discussed in Section 3.0. Since the proposed action is by BRAC law the prescribed course of action is compared to the no action alternative.

4.2 An impact (consequence or effect) is defined as a modification to the human or natural environment that would result from the implementation of an action. The impacts can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action (secondary, indirect, or synergistic effects). The effects can be temporary (short-term), long-lasting (long-term), or permanent. For purposes of this EA, temporary effects are defined as those that would last less than 3 years after completion of the action. Long-term impacts are defined as those that would last 3 to 20 years. Permanent impacts would require an irretrievable commitment of resources.

4.3 Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. The significance of the impacts presented in this EA is based upon existing regulatory standards, scientific and environmental knowledge, and/or best professional opinions of the authors of the EA. The significance of the impacts on each resource will be described as significant, moderate, minimal, insignificant (or negligible), or no impact. Significant impacts are those effects that would result in substantial changes to the environment (as defined by 40 CFR 1508.27) and should receive the greatest attention in the decision-making process.

4.1 Physical Resources

4.1.1 Topography/Geology

4.1.1.1 Impacts Common to all Action Alternatives: There would be no effect on the regional topography/geology by implementing the proposed action or the no action alternative.

4.1.2 Soils

4.1.2.1 Proposed Action: The proposed renovations and limited new construction associated with the proposed action would likely not result in significant impacts to the existing geology underlying soils. Soils at the site consist of unconsolidated fill material placed during area wide build up of the BDA. No previously undisturbed soils (native) soils would be impacted with the proposed action. Approximately 120 cubic yards of soils (fill material) will be excavated for drainage improvements with installation of drain pipe for runway apron improvements. Another 3.94 acres of underlying soils will be exposed during removal of asphalt taxiway and concrete apron.

4.1.2.2. Based on EPA and ADEC records, excavated soils may potentially be POL contaminated. Soils would be field screen during excavation activities to determine presence or

absence of contamination. In the event that contaminated soils are encountered, excavation would cease and CEVC and ADEC would be contacted. It is anticipated that contaminated soils would be removed and transported off-site for thermal remediation.

4.1.2.3 No Action Alternative: There would be no disturbance to soils associated with the no action alternative.

4.1.3 Air Quality

4.1.3.1 Proposed Action:

4.1.3.1.1 Emission sources identified as associated with the proposed action include heavy construction machinery exhaust , dust from disturbed soils during construction, vehicle exhaust emission, changes (decrease) in aircraft emissions as a result of overall reductions in aircraft population, and changes (either increase or decrease) to the base power plant emissions as a result of increases or decreases in base population and activities.

4.1.3.1.2 Renovation of the facilities would create minor increases in particulates by disturbing soils. Application of water or other wetting solutions at the construction site would minimize fugitive dust. Likewise, surfaces in the building interior requiring asbestos or lead based paint removal would be wetted prior to removal to minimize fugitive particles. Air quality measures such as operation of air exchangers with high efficiency particulate air (HEPA) filters would also be utilized to maintain air quality during abatement activities. Impacts to air quality would be minimal and only temporary in duration.

4.1.3.1.3 Similarly, operation of gasoline or diesel powered construction equipment would result in temporary and minor increases in sulfur dioxides, nitrogen oxides, volatile organic compounds and carbon monoxide. These emissions would be insignificant and short-term. Short-term emissions of air pollution are generally not considered to adversely affect air quality because the pollutants are typically dispersed to acceptable levels in a short period of time (minutes or hours). However, at no time is a proposed activity allowed to contribute to a violation of any National Ambient Air Quality Standards (NAAQS) or exceed worker exposure levels defined by the OSHA permissible exposure limits. The increased emissions associated with the construction would return to pre-project conditions within 1 month after cessation of the construction activities. Construction is expected to be completed in less than 2 years.

4.1.3.1.4 Operation of the CAC facility would result in minor increases in emissions, particularly during periods of F-15C aircraft use and maintenance/refueling activities. Similar types and amounts of emissions are currently generated at Eielson AFB. Therefore, long-term adverse impacts to air quality would be sporadic and occur for short periods of time.

4.1.3.1.5 The movement of 18 A/OA-10 aircraft from Eielson AFB to other locations would result in decreased aircraft emissions at the base and in the air space regularly used by the aircraft. In addition, the movement of military personnel (355 FS) and their dependents could result in reduced demands by vacant housing for utility infrastructure support, resulting in less output by the Central Heating and Power Plant. This would translate into less coal burned by the

plant. Whether this will actually occur has not yet been determined due to other increased demands from expanded infrastructure that has been programmed or already built.

4.1.3.1.6 Whether there is a decrease or the demand remains stable, air quality at Eielson AFB would not be impacted as emission sources on base are constantly monitored and sampled to be sure that no violations of existing air standards occur.

4.1.3.2 No Action Alternative: No noticeable changes to ambient air quality would occur under the No Action Alternative.

4.1.4 Ground and Surface Water

4.1.4.1 Proposed Action: Under the Proposed Action, up to 3.94 acres of soils would be exposed during asphalt and concrete removal and consequently susceptible to erosion during construction activities. Nearby surface waters could be affected by storm water runoff and suspended sediments resulting from precipitation events during the construction period if best management practices (BMP) are not properly implemented. The potential effects on surface waters, if they occurred, would be limited to Garrison Slough and would not likely extend downstream past its confluence with Moose Creek.

4.1.4.1.2 However, because the construction area is greater than 1 acre, a NPDES Storm Water Discharge permit would be required prior to construction. This permit would require that a SWPPP be prepared and a NOI to be filed with the EPA. Specific erosion and sedimentation controls and other BMPs would limit the amount of erosion that occurs on site and restrict potential impacts to the Garrison Slough. Therefore, no significant impacts to surface waters would occur.

4.1.4.1.3 The potential for contamination to ground and surface waters is greater during construction activity due to increase risks associated with fuel transfer spills and accidents. The USAF would respond to hazardous spills accordingly in cooperation with state and federal agencies.

4.1.4.1.4 The proposed renovations would increase demands on water supplies during the construction period. Water would be needed for a variety of construction activities such as dust suppression and concrete mixing. These increases would be temporary and minimal.

4.1.4.1.5 Available records from EPA and ADEC indicate that groundwater in the vicinity of Building 1300 is POL contaminated. Groundwater would not be encountered or disturbed under the Proposed Action. Long-term groundwater monitoring would continue at the site in accordance with the ROD for OU-1.

4.1.4.1.6 The relocation of 18 A/OA-10 aircraft from Eielson AFB would likely result in only minimal changes to ground and surface water resources. Reduced aircraft flying activities would likely result in less handling of fuel and reduced chances for spills of hazardous materials. In addition, there may a small reduced load of waste water sent to the Waste Water Treatment Facility on base, ultimately resulting in reduced treated waste water discharge into surface water.

4.1.4.2 No Action Alternative: There would be no impact to groundwater or surface water with this alternative.

4.1.5 Wetlands

4.1.5.1 Impacts Common to all Action Alternatives: There would be no impact to wetlands under the proposed action or the no action alternative. There are no hydric soils and no potential jurisdictional wetland sites or other waters of the U.S. in the immediate vicinity of Building 1300 where construction for the CAC facility would take place. All other improvements would be in the interior of existing structures.

4.1.6 Visual Resources

4.1.6.1 Proposed Action: Visual resources would only be affected for the duration of the exterior renovation of Building 1300 with the presence of heavy equipment at the site. The effects would be minimal and of short duration.

4.1.6.2 No Action Alternative: There would be no impact to visual resources with this alternative.

4.1.7 Noise

4.1.7.1 Proposed Action: Temporary and minimal increases in noise would occur during the renovation of Building 1300. The construction activities potentially causing elevated noise levels within the project area would include diesel and gasoline powered generators, trucks, and construction equipment. As indicated in Table 4-1, heavy duty trucks generate a noise level of approximately 90 dBA at 50 feet. Attenuation to 65 dBA would occur at a distance of approximately 800 to 1,000 feet depending on climatic conditions, topography, vegetation, and man-made barriers (Generac Power Systems, Inc. 2004). Noise levels for other types of construction equipment range from the loudest, tractors and backhoes (70 to 95 dBA) to pumps and generators (65 to 85 dBA) (Bugliarello et al. 1976). No noise sensitive receptors (e.g., parks, schools, churches, hospitals) are located within 1,000 feet of the proposed site and, therefore, no significant impact would occur from the renovation at the proposed site.

Table 4-1. A-Weighted (dBA) Sound Levels of Typical Noise Environments

dBA	Overall Level	Noise Environment
120	Uncomfortably Loud (32 times as loud as 70 dBA)	Military jet takeoff at 50 feet
100	Very loud (8 times as loud as 70 dBA)	Jet flyover at 1,000 feet
90	Very Loud	Heavy-duty truck, average traffic
80	Loud (2 times as loud as 70 dBA)	Propeller plane flyover at 1,000 feet Diesel truck 40 mph at 50 feet
70	Moderately loud	Freeway at 50 feet from pavement edge Vacuum cleaner (indoor)
65	Moderately loud	Gas powered generator

60	Relatively quiet (1/2 as loud as 70 dBA)	Air condition unit at 10 feet Dishwasher at 10 feet (in door)
50	Quiet (1/4 as loud as 70 dBA)	Large transformers Small private office (in door)
40	Very quiet (1/8 as loud as 70 dBA)	Bird calls Lowest limit of urban ambient sound
10	Extremely quiet (1/64 as loud as 70 dBA)	Just audible
0	Threshold of hearing	

Source: Wyle Research Corporation 1992.

4.1.7.2 Operation of F-15C aircraft would result in increased noise levels. It is anticipated that the CAC could utilize Eielson AFB from 3-5 times per year for 1-2 weeks each duration. Similar types and amounts of emissions are currently generated at Eielson AFB from transient military aircraft as well as MFE's. Therefore, long-term adverse impacts from noise would be sporadic and occur for relatively short periods of time.

4.1.7.3 The relocation of 18 A/OA-10 aircraft from Eielson AFB would result in reduced aircraft related noise, mainly along the flightline.

4.1.7.3 No Action Alternative: There would be no change in noise levels with this alternative.

4.1.8 Hazardous Materials and Waste Management

4.1.8.1 Proposed Action: Hazardous materials and/or waste may be generated during the renovation of Building 1300. Hazardous materials and/or waste may consist of POL contaminated soils, asbestos, and lead-based paints. Hazardous materials and/or waste generated during operation of CAC hanger may include cleaning solvents, chemicals, fuel, oil, and lubricants. Hazardous materials and waste generated will be handled and disposed of properly following Eielson's Hazardous Waste Management Plan.

4.1.8.2 Eielson AFB operates a 90-day accumulation site and wastes are collected at specified initial accumulation points (IAP). After the waste is properly contained, labeled and readied for shipping, the IAP contacts the Defense Reutilization and Marketing Office (DRMO), which organizes off-site disposal of waste by private contractors (Air Force 2006a).

4.1.8.3 The potential exists for petroleum, oil, and lubricants (POL) storage and use at the temporary staging areas to maintain and refuel construction equipment. However, these activities would include secondary containment to hold 110 percent of the largest container capacity (40 CFR 112.12). Clean-up materials (e.g., oil mops) would also be maintained at the site to allow immediate action in case an accidental spill occurs. Drip pans would be provided for stationary equipment to capture any POL accidentally spilled during maintenance activities or leaks from the equipment. In addition, a Spill Prevention, Containment and Countermeasures Plan (SPCCP) would be in place prior to the start of construction and all personnel would be briefed on the implementation and responsibilities of this plan. The proposed action would not result in a significant hazard to the public or the environment from the transport, use, or disposal of hazardous materials

4.1.8.4 The relocation of 18 A/OA-10 aircraft from Eielson AFB would likely result in reduced handling of hazardous material and generation of hazardous waste. This may be partially offset by increased transient aircraft traffic associated with RED FLAG-Alaska major flying exercises.

4.1.8.4 No Action Alternative: Hazardous material use and waste generation management would remain status quo with this alternative.

4.1.9 Infrastructure Improvements

4.1.9.1 Proposed Action: Upgrading Building 1300 for use as a forward operating location for the 3rd OSS Combat Alert Cell would help meet Air Force goals and objectives as stated in Section 1.0. Proposed building renovations would improve operational effectiveness of the CAC mission. Increased demands on base utilities such as water, electric, and steam heat are considered minimal over present use. The departure of the A/OA-10 aircraft would not result in any infrastructure improvements. It would result in the freeing up of infrastructure for other uses.

4.1.9.2 No Action Alternative: There would be no changes to infrastructure at Eielson AFB with this alternative.

4.2 Biological Resources

4.2.1 Vegetation

4.2.1.1 Proposed Action: Approximately 900 square feet (0.02 acres) of grass vegetation would be disturbed as a result of excavation for proposed drainage improvements. The disturbed area would be reseeded upon project completion. The effects on vegetation are considered minimal. No impacts to vegetation would result from the departure of the A/OA-10 aircraft.

4.2.1.2 No Action Alternative: There would be no change to vegetation under this alternative.

4.2.2 Wildlife

4.2.2.1 Proposed Action: There may be the possibility of minor disruptions to wildlife movement in the area during construction phase. Increased activities such as operation of heavy equipment could result in temporary displacement of wildlife. However, these impacts would be limited in duration and scope. Loss of habitat to small mammals is limited to 900 square feet (0.02 acres) of grass vegetation for a short duration and is considered negligible. No impacts to wildlife would result from the departure of the A/OA-10 aircraft.

4.2.2.2 No Action Alternative: There would be no change to wildlife with the no action alternative.

4.2.3 Fish

4.2.3.1 Impacts Common to all Action Alternatives: There would be no effect on fish or fish habitat with the proposed action and no action alternatives.

4.2.4 Threatened or Endangered Species

4.2.4.1 Impacts Common to all Action Alternatives: No known threatened or endangered species inhabit the area, therefore there would be no effect to threatened or endangered species from implementation of the BRAC actions.

4.3 Cultural and Historic Resources

4.3.1 Impacts Common to all Action Alternatives: There are no historic properties or protected cultural resources in the vicinity of the proposed action. There are historic properties on base, but none of the actions associated with the BRAC proposals would impact these properties.

4.4 Socioeconomic Factors

4.4.1 Proposed Action: The proposed action involves two specific proposals. The socioeconomic impacts that could occur with each of these proposals would be quite different and will be analyzed separately.

4.4.1.1 Relocate the Combat Alert Cell FOL from Galena, Alaska to Eielson AFB.

This action would not result in any permanent changes to the employment of military personnel or civilian employees at Eielson AFB. There would be however, an increase in temporary personnel for as long as the building renovations last. Overall, minimal changes in income, employment, and business sales volume would be expected during the renovation phase. No displacement of residences or businesses would be required and the construction area would be restricted to authorized personnel. Therefore, no disproportionate impacts to minority or low-income families or effects to children would occur as a result of this action.

Figure 4-1 – Aircraft on Eielson AFB Flightline

4.4.1.2 Transfer all A/OA-10 aircraft (18), currently operating as part of the 355 FS, to two bases with existing A/OA-10 aircraft operations, Moody and Barksdale Air Force Bases and the remaining two to back-up inventory.

4.4.1.2.1 The transfer of the A/OA-10 aircraft from Eielson will result in movement of 198 active duty military support personnel to other Air Force installations. These personnel are part of the workforce that operates the A/OA-10 aircraft that are part of the 355 FS. The transfer of the aircraft will also result in the loss of 32 civilian positions.

4.4.1.2.2 Eielson AFB contributes to the Fairbanks economy through employment of military and civilian personnel and expenditures for goods and services from local businesses. In addition to base employment, annual payroll associated with Eielson AFB personnel amounts to $201 million. In FY 2005, local construction, service contracts, and purchases totaled $29 million. Eielson AFB activities are estimated to generate 1,119 indirect jobs in the region with associated wages totaling $41 million. There are currently at Eielson AFB 2,993 active duty and National Guard personnel and 789 civilian personnel. The loss of 198 military positions and 32 civilian jobs could have a moderate impact on the regional economy. Overall, however, the portion that would be eliminated represents about 6 per cent of the military/civilian workforce. It is estimated that the dollar loss to the economy would be approximately $12 million. In addition to the dollar loss it is estimated that approximately 68 indirect jobs in the community would be lost.

4.4.1.2.3 Although there will be some short-term economic losses as a result of the BRAC actions at Eielson AFB, there are mitigating factors that will likely more than offset these losses. The US Army Alaska will be moving additional aviation assets to Ft. Wainwright and possibly to Eielson AFB. This will result in an increase of active duty and civilian personnel that more than offsets the loss from the current BRAC actions at Eielson AFB.

4.4.2 No Action Alternative: Under the No Action Alternative, socioeconomic conditions would remain status quo.

4.5 Environmental Justice:

4.5.1 Proposed Action: No significant adverse impacts are anticipated as a result of the renovation of Building 1300 and operation of Eielson AFB as a FOL for the Combat Alert Cell. All ground disturbance would occur entirely within Eielson AFB. No displacement of housing, parks, schools, commercial enterprises, or churches would occur and no such resources are located in proximity of the proposed site. Therefore, no disproportionate impacts to low income or minority families and no additional risks to the safety of children would occur as a result of the Proposed Action.

4.5.2 No Action Alternative: There would be no effects relative to EO 12898 or EO 13045 issues under this alternative.

5.0 Cumulative Impacts

This section of the EA addresses the potential cumulative impacts associated with the implementation of the BRAC actions at Eielson AFB. The CEQ defines cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). The effects of individual minor disturbances and other changes to the environment by humans will accumulate when the frequency of disturbances is so high that the ecosystem has not fully rebounded before another stressful event is introduced. The spatial and temporal crowding of such disturbances can result in cumulative effects. The factors used in this document to determine which resources are cumulatively affected took into account:

- Whether the proposed action is one of several similar actions in the same geographic area;
- Whether other activities in the area have similar effects on the resource;
- Whether the resource is especially vulnerable to incremental effects;
- Whether these effects have been historically significant for this resource; and
- Whether other analyses in the area have identified a cumulative effects concern.

Eielson AFB has been used for military missions since the 1940s and has been continuously developed as DoD missions, organizations, needs and strategies have evolved. Development and operation of training ranges have impacted thousands of acres with synergistic and cumulative impacts to soil, wildlife habitats, water quality, and noise. Beneficial effects, too, have resulted from the operation and management of Eielson AFB including, but not limited to, increased employment and income for Fairbanks North Star Borough and its surrounding communities; restoration and enhancement of sensitive resources such as Mullins Pit wetland area; consumptive and non-consumptive recreation opportunities; and increased knowledge of the history and pre-history of the region through numerous cultural resource surveys and studies.

With continued funding and implementation of the installation's Integrated Natural Resources Management Plan (INRMP), Integrated Cultural Resources Management Plan (ICRMP), Installation Restoration Plan (IRP) and Master Plan, adverse impacts due to future and on-going projects have and will be avoided or minimized. Projects at Eielson AFB which were examined for cumulative impacts include the following, some of which have been completed and others that have been programmed for future implementation:

- Demolition and replacement of base facilities
- Relocation of main gate
- Airfield and facility use associated with MFE and MOA
- Expansion of aircraft parking ramps
- Infrastructure support for MFE
- Construction of munitions storage pad
- Construction of a bulk fuel storage and off-loading facility
- Fuel system hydrant construction and upgrades
- Increase in size of U.S. Army Aviation assets at Fort Wainwright and Eielson AFB

The actions described above have not resulted in any identified incremental or cumulatively significant impacts on sensitive resources. A summary of the anticipated cumulative impacts associated with the proposed action on each of the resources described previously is presented below.

Land Use. A significant impact would occur if any action is inconsistent with adopted land use plans or action would substantially alter those resources required for, supporting or benefiting the current use. The construction and upgrades proposed for the CAC facility are consistent with the base's general plan and would only affect 3.94 acres. These actions, when considered with other potential alterations of land use, would not be expected to result in a significant cumulative adverse effect. All past, present, and reasonably foreseeable future actions on Eielson AFB have or will be consistent with the installation Master Plan. The actions have been implemented, for the most part, on previously disturbed lands, or at great enough distances from the proposed CAC facility such that no incremental impacts would occur. The departure of A/AO-10 aircraft from Eielson will not result in cumulatively significant impacts to land use at Eielson AFB.

Visual Resources. Actions that cause the permanent loss of the characteristics that make an area visually unique or sensitive would be considered to cause a significant impact. No major impacts to visual resources would occur from implementing the proposed action. Renovation of Building 1300 and operation of that building as a CAC facility when considered with existing and proposed developments on Eielson AFB, would not result in a significant cumulative negative impact on the visual quality of the base or region. Transfer of the A/AO-10 aircraft from Eielson AFB would not result in impacts to visual resources and would not have be a factor in the cumulative impacts analysis.

Air Quality. Impacts to air quality would be considered significant if the action resulted in a violation of air quality standards, obstructs implementation of an air quality plan, or exposes sensitive receptors to substantial pollutant concentrations. The emissions and fugitive dust generated during and after the renovation of Building 1300 would be short-term and minor thus, no significant cumulative emissions or fugitive dust effects are anticipated. The emissions from these actions, when considered with potential emissions from the other actions, are not expected to have any significant cumulative impacts on air quality. The departure of the A/OA-10 aircraft would only reduce impacts to air quality and would not be a factor in the cumulative affects analysis.

Noise. Actions would be considered to cause significant impacts if they permanently increase ambient noise levels over the 65 dBA or raise the ambient noise by 3 dBA or greater. Most of the noise generated by the Proposed Action would occur during construction/renovation and during short periods of duration of CAC operations. Potential sources of noise from other projects are not close enough in time or location to increase ambient noise levels above the 65 dBA range at the proposed site for an extended duration of time. Thus, the noise generated by the BRAC actions when considered with the other existing and proposed activities on Eielson AFB, would not be considered as a significant cumulative adverse effect.

Soils. A significant impact would occur if the action exacerbates or promotes long-term erosion or if the soils are inappropriate for the proposed construction. Post-construction SWPPP measures, including the storm water detention basin, would be implemented to control erosion. No soil types inappropriate for engineering or construction uses are located at the project site. The disturbance of 3.94 acres of soils, when combined with past and proposed projects on Eielson

AFB, would not create a significant cumulative adverse impact, as all construction projects require prescribed erosion controls and stabilization of the disturbed area. As indicated previously, the majority of the past, present, and foreseeable projects are located on previously disturbed sites. The transfer of the A/OA-10 aircraft from Eielson AFB would have no impact on soils and not be a factor in the cumulative effects analysis.

Water Resources. The significance threshold for water resources include any action that substantially depletes ground water supplies or interferes with groundwater recharge, substantially alters drainage patterns, or results in the loss of Waters of the U.S. that cannot be compensated. No significant impact to water resources would occur as a result of the building renovation and operation of the Proposed Action. The proposed renovation and operation of the CAC facility would increase the disturbed areas on Eielson AFB by 3.94 acres. This action, in combination with the other base activities, would increase the storm water run-off and, without proper erosion and sedimentation control measures, could adversely affect drainage flow and surface water quality. However, the required SWPPP storm water retention basin would reduce erosion and sedimentation during construction activities to negligible levels and would eliminate post-construction erosion and sedimentation from the site. The detention basin would minimize any potential losses to groundwater recharge. The same measures would be implemented for other construction projects; therefore, cumulative impacts would not be significant. The departure of the A/OA-10 aircraft would likely result in a reduced demand on water resources, especially drinking water and waste water treatment.

Biological Resources. Significance thresholds for biological resources would include a reduction in ecological process, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could be off-set or otherwise compensated. Removal of 0.02 acres of grassland would result in insignificant cumulative impacts to vegetation communities and wildlife populations due to the vast amount of similar habitat contained within and surrounding Eielson AFB. The long-term viability of species and communities at Eielson AFB would not be threatened. In addition, prior to construction, sites are surveyed for migratory species and appropriate mitigation measures would be implemented. As indicated previously, the majority of the past, present, and foreseeable projects are located on previously disturbed sites. The loss of 0.02 acres of vegetation associated with the Proposed Action, when combined with other ground disturbing or development projects on Eielson AFB, would not result in significant cumulative negative impacts on the base's or the region's biological resources. No impacts to biological resources would occur from the transfer of the A/OA-10 aircraft.

Cultural Resources. The Proposed Action would have no effect on cultural resources. The installation has been surveyed for cultural resources and all historic properties have been identified. In addition, all Proposed Actions are reviewed to avoid adverse impacts to cultural resources and the majority of the reasonable past, present and foreseeable projects were constructed or would be constructed in areas that have been previously disturbed. Therefore, this action along with other proposed BRAC actions would not result in significant cumulative impacts to historical properties or cultural resources.

Socioeconomics. Significance threshold for socioeconomic conditions include displacement or relocation of residences or commercial buildings; increases in long-term demands to public services in excess of existing and projected capacities, significant reduction in expenditures by the military in the local economy, and disproportionate impacts to minority and low income families.

Although the 2005 BRAC actions that will occur at Eielson AFB will result in overall reductions in expenditures in the local economy by the Air Force, the estimated amounts will result in a 6 per cent reduction in the total workforce and a loss of about $12 million. This impact would likely be a short-term impact (approximately 2 to 3 years) as the U.S. Army at Fort Wainwright will be increasing their aviation assets resulting in an overall increase in military spending.

Infrastructure. A significant impact would occur if the long-term demand for utilities exceeds the current or projected capacity. No modifications to electrical transmission or water distribution lines would be required to provide utilities to the CAC facility. In addition, the transfer of the A/OA-10 aircraft from Eielson will result in reduced demands on infrastructure.

Hazardous Material or Toxic Substances. Significant impacts would occur if an action creates a public hazard, the site is considered a hazardous waste site that poses health risks, of if the action would impair the implementation if an adopted emergency response or evacuation plan. Only minor increases in the use of hazardous substances (e.g., POL materials) would occur as a result of the operation of the CAC facility on a limited basis. No health of safety risks would be created by this action. The relocation of the O/OA-10 aircraft from Eielson AFB will result in reduced hazardous material use on base and also reduce the hazardous waste stream that would otherwise occur.

5.1 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term. Irretrievable commitments are those that are lost for a period of time. There are no irreversible commitments associated with the Proposed Action. The only irretrievable commitments may be the loss of existing vegetative growth (0.02. acres of grass) for construction purposes under the Proposed Action.

6.0 List of Preparers

6.1 Writers

6.1.1 Lyle D. Gresehover wrote most sections of this EA. Lyle has a BS in Geology and 17 years of experience in environmental science and natural resource management.

6.1.2 James Nolke wrote selected portions of the EA and reviewed and edited all portions of the EA.

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7.0 Bibliography

Bacon, G.H., J.A. Ketz, and C.M. Mobley. *Historic Preservation Plan for U.S. Army Lands in Alaska.* Alaska Heritage Research Group, Inc. for the U.S. Army Corps of Engineers, Alaska District, 1986.

US Air Force. *Environmental Impact Statement of Alaska Military Operations Areas, Volume 1 – 3,* 1995.

U.S. Army Alaska, Department of the Army. *Alaska Army Lands Withdrawal Renewal, Final Legislative Environmental Impact Statement, Volumes 1 – 2*, 1998.

U.S. Army Garrison Alaska, Department of the Army. *Draft Integrated Natural Resources Management Plan, 2007-2011.*

U.S. Army Garrison Alaska, Department of the Army. *Environmental Impact Statement for Construction and Operation of a Battle Area Complex and a Combined Arms Collective Training Facility within U.S. Army Training Lands in Alaska, USAG-AK 2006.*

Viereck, L.A.; Dyrness, C.T.; Batten, A.R.; and Wenzlick, K.J. *The Alaska Vegetation Classification.* U.S. Department of Agriculture Forest Service, 1992.

CH2M Hill. 2007. *Summary Report for Air Quality Compliance Evaluation at Eielson AFB, Alaska. Prepared for The Air Force Center for Environmental Excellence and 354 CES/CEVQ*

Council on Environmental Quality (CEQ). 1997. *Considering Cumulative Effects Under the National Environmental Policy Act. Council on Environmental Quality, Executive Office of the President.*

Eielson Air Force Base. 2006. *Integrated Cultural Resources Management Plan. Eielson AFB, Alaska, 2006 to 2011.*

Environmental Laboratory. 1987. *US Army Corps of Engineers Wetlands Delineation Manual. Waterways Experiment Station Technical Report Y-87-1, Vicksburg, Mississippi.*

Fairbanks Economic Development Council. 2006. *Community and Economic Profiles.* Website accessed March 21, 2007. http://www.investfairbanks.com/

Federal Interagency Committee on Noise (FICON). 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues.*

Gerlach, S.C., and P.M. Bowers. 1996. *Archaeological Survey and Assessment of Prehistoric Cultural Resources on Eielson AFB, Alaska, Management Summary*. Northern Land Use Research, Inc., Fairbanks, Alaska.

Gerlach, S.C., S.J. McIntosh, P.M. Bowers, and O.K. Mason. 1996. *Archaeological Survey and Assessment of Prehistoric Cultural Resources on Eielson Air Force Base, Alaska. Northern Land Use Research, Inc., Fairbanks, Alaska.*

Magoun, A.J. and F.C. Dean. 2000. *Flood Plain Forests Along the Tanana River, Interior Alaska. AFES Miscellaneous Publication 2000-3*. December 2000.

Mason, O., P. Bowers, and S.C. Gerlach. 1994. *Predictive Model for the Discovery of Cultural Resources on Eielson AFB, Alaska*. Northern Land Use Research, Inc. Fairbanks, Alaska.

Mothershed, Z. 2007. Air Quality Manager, 354 CES/CEVP, Eielson AFB, Alaska. Personal communication 2007

National Park Service (NPS). 2007. *Early Prehistory, Archaeological Overview of Alaska.*

Nolke, J. Environmental Planning Manager, 354 CES/CEVP, Eielson AFB, Alaska. Personal communication, 2007.

United States Air Force. 1993. *Environmental Assessment of Major Flying Exercises in Alaska.1995.*

United States Air Force 1995 *Final Environmental Impact Statement Alaska Military Operations Areas.*

United States Air Force 1996. *The Omnibus Base Construction on Developed Land Programmatic Environmental Assessment.* April 1993, Revised December 1996.

United States Air Force. 2003a. *5-Year Installation Restoration Program Record of Decision.*

United States Air Force. 2003b. *Environmental Assessment for the Expansion of Aircraft Parking Ramps E-7and E-8, Eielson AFB, Alaska.* December.2003

United States Air Force. 2003c. *Environmental Assessment for the Construction of a Type III Fuel Hydrant System at the E-7, E-8, and E-9 Complexes at Eielson AFB, Alaska.* December 2003.

United States Air Force. 2004. *Environmental Assessment for the Relocation of Eielson's Main Gate, Eielson AFB, Alaska.* April.

United States Air Force. 2005a. *Cope Thunder Wraps in Alaska. 354 Fighter Wing Public Affairs Press Release.* 5 May.

United States Air Force. 2005b. *Economic Impact Statement for Fiscal Year 2005. 354th Fighter Wing Public Affairs Office, Eielson AFB, Alaska.*

United States Air Force. 2006a. *Eielson AFB Hazardous Waste Management Plan. 354 CES/CEVQ, Eielson AFB, Alaska*. June.

United States Air Force. 2006b. *Eielson AFB Asbestos Management and Operations Plan.* MACTEC Engineering and Consulting, Inc., Fairbanks, Alaska. February.

United States Air Force. 2006c. *Environmental Assessment for the Expansion of the Munitions Storage Pad at Eielson, AFB, Alaska.* June.

United States Bureau of the Census (USBC). 2005. *American Community Survey for Fairbanks North Star Borough and Alaska.*

United States Bureau of the Census (USBC). 2006. *State and County QuickFacts for Fairbanks, Fairbanks North Star Borough, and Alaska*.

United States Environmental Protection Agency (USEPA). 2005. *8-Hr Ozone and Designated PM-2.5 Nonattainment Areas. United States Environmental Protection Agency, Green Book*. Website updated October 14, 2005. http://www.epa.gov/oar/oaqps/greenbk/qncl3.html