Fort Wainwright
Disposition of Hangars 2 & 3

DRAFT ENVIRONMENTAL IMPACT STATEMENT

FORT WAINWRIGHT, ALASKA

MAY 2013

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DRAFT
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Disposition of Hangars 2 and 3

Fort Wainwright, Alaska

May 2013

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Draft

Environmental Impact Statement

Disposition of Hangars 2 and 3

Fort Wainwright, Alaska

IMCOM

APPROVED BY:

Ronald M. Johnson
Colonel, U.S. Army
Commanding

8 Apr 13
Date

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To the Reader:

Thank you for your interest in the U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA) Draft Environmental Impact Statement (EIS) for the Disposition of Hangars 2 and 3 at Fort Wainwright, Alaska. The public is invited to participate and comment on the Draft EIS. The USAG FWA plans to hold a public meeting in Fairbanks, Alaska, in June 2013 to provide information on the Draft EIS and to provide an opportunity for public input.

The U.S. Environmental Protection Agency will publish an announcement of receipt of the Notice of Availability for this Draft EIS in the *Federal Register*. The Army will accept comments for 45 days following the *Federal Register* publication. The Draft EIS will be available for public review at the Noel Wien Library in Fairbanks, Alaska and online at:

http://www.wainwright.army.mil/env/NEPA/Current.html

Written comments on the Draft EIS and requests for additional copies of the Draft EIS should be forwarded to:

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DRAFT

ENVIRONMENTAL IMPACT STATEMENT

DISPOSITION OF HANGARS 2 AND 3

Lead/Responsible Agency:	United States Army Installation Management Command
Title of the Proposed Action:	Disposition of Hangars 2 and 3, Fort Wainwright, Alaska
Designation:	Draft Environmental Impact Statement
Prepared by:	U.S. Army Garrison Fort Wainwright, Alaska
Cooperating Agency:	None

Abstract:

This Draft Environmental Impact Statement (EIS) analyzes the impacts from demolition of two historic World War II-era hangars at Fort Wainwright, Alaska. The Draft EIS also looks at other disposition options and a "no action" alternative. Both buildings have been found to be unsafe for occupancy and have no remaining military purpose. The hangars are contributing resources within the Ladd Field National Historic Landmark and Ladd Air Force Base Cold War Historic District, and their loss would be a significant impact to cultural resources. All other impacts would be less than significant. Mitigation measures are described to minimize adverse impacts on cultural resources.

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HOW TO READ THIS ENVIRONMENTAL IMPACT STATEMENT

This Draft Environmental Impact Statement (EIS) is organized into nine chapters and nine appendices. The chapters cover the following topics.

Executive Summary provides a summary of findings within this Draft EIS and discusses the purpose and need for the Proposed Action, the project location, all alternatives considered, public involvement methods, environmental consequences of each alternative carried forward, and proposed mitigation measures.

Acronyms and Abbreviations provide a list of acronyms and abbreviations used in this document.

Chapter 1.0: Purpose of and Need for Action introduces the Draft EIS and describes the underlying purpose and need for the action, the scope of the Draft EIS, the ultimate decision to be made, and the public and agency coordination that influenced the Draft EIS scope and analysis.

Chapter 2.0: Description of the Proposed Action and Alternatives describes the Proposed Action, explains each alternative, and addresses the differences between them. The chapter also presents alternatives that were initially considered but dismissed from further analysis.

Chapter 3.0: Affected Environment and Environmental Consequences describes the existing environmental setting for the project, providing a baseline condition of the identified resource areas, and analyzes the impacts associated with each proposed alternative on the resource areas. Immediately following are the analyses of the potential environmental impacts associated with the No Action Alternative and the Action Alternative for the resource areas. This chapter also includes an analysis of potential cumulative impacts, as well as existing and proposed mitigation measures.

Chapter 4.0: List of Preparers identifies the individuals who prepared this document, along with their qualifications and contributions.

Chapter 5.0: Distribution List identifies the agencies, organizations, and individuals who received copies of this Draft EIS or notification of the document's availability.

Chapter 6.0: Agencies and Persons Consulted identifies local, state, and federal agencies; Alaska Native tribes; and individuals that were contacted throughout the preparation of this Draft EIS.

Chapter 7.0: References documents the reference sources cited in this Draft EIS that were used to prepare the document.

Chapter 8.0: Glossary provides a list of technical or uncommon terms used in this Draft EIS with their definitions.

Chapter 9.0: Index provides an index by page number to the location of key issues and topics discussed in this Draft EIS.

Appendices contain detailed materials that were prepared for this Draft EIS or used for the analyses. They include materials that are either (1) relevant to the decision to be made or (2) form the basis for analyses in this Draft EIS. Items included in the appendices are:

Appendix A—National Historic Preservation Act Section 106 Memorandum of Agreement

Appendix B—Notice of Intent to Prepare an Environmental Impact Statement

Appendix C—Public Scoping Correspondence

Appendix D—Agency Correspondence

Appendix E—Draft EIS Comments (only to be included in the Final EIS)

Appendix F—Economic Impact Forecast System Analysis

Appendix G—Air Quality General Conformity Applicability Analysis

Appendix H—Past Mitigation Measures for Hangars 2 and 3

Appendix I—Cumulative Effects Analysis Quick Look Questions

EXECUTIVE SUMMARY

This Draft Environmental Impact Statement (EIS) has been prepared in accordance with the National Environmental Policy Act of 1969, as amended (NEPA) (42 United States Code §4321 et seq.); NEPA-implementing regulations issued by the President's Council on Environmental Quality (40 Code of Federal Regulations [CFR] §§1500–1508); and the Army's NEPA-implementing regulation (32 CFR §651, *Environmental Analysis of Army Action*s).

Proposed Action

The United States (U.S.) Army Garrison Fort Wainwright, Alaska (USAG FWA) prepared this Draft EIS to assess the potential environmental impacts resulting from the determination and implementation of a disposition for Hangars 2 and 3 and supporting infrastructure[1] located at Fort Wainwright, Alaska.

The USAG FWA is home to the Ladd Field National Historic Landmark (Ladd Field NHL) and the Ladd Air Force Base Cold War Historic District (Cold War Historic District). Hangars 2 and 3 are contributing resources to the Ladd Field NHL and the Cold War Historic District. The USAG FWA concluded that the determination and implementation of a disposition for the hangars would have an adverse effect on the Ladd Field NHL and the Cold War Historic District. Because the hangars are contributing resources within the Ladd Field NHL and Cold War Historic District, the proposal to determine and implement a new disposition or state for Hangars 2 and 3 is considered an undertaking under the National Historic Preservation Act (NHPA) and requires Section 106 consultation procedures of the NHPA to be followed. Actions will be taken to avoid, minimize, or otherwise mitigate any adverse effects on historic properties.

The intent of this Draft EIS is to inform the decision makers, agencies, interested parties, Alaska Native tribes, and the public of possible environmental consequences associated with the Proposed Action.

Purpose and Need for Action

The military built Hangars 2 and 3 between 1943 and 1944 as semi-permanent structures with a functional lifespan of 40 years. At the end of their life expectancy in 1983, the hangars continued to be used without a long-term plan or funding to perform a large-scale rehabilitation of the structures.

[1] The supporting infrastructure includes, but is not limited to, concrete foundations, the small, empty, flammable liquids storage facility located between Hangars 2 and 3, paved parking areas, utilities (i.e., service utilidors, manholes, vents, utility poles, head bolt heaters, electrical power lines, and communications), and the security fence line.

Funding was focused on mission-essential programs and needs of the installation with maintenance and repair of Hangars 2 and 3 occurring as necessary. In addition, to accommodate changing missions, the Army completed numerous interior modifications to the hangars, including creating doorways and windows and altering the interior lateral cross-bracing. The lack of large-scale rehabilitation and the numerous interior modifications, along with the age of the structures, a fire in Hangar 2, and the harsh Alaskan environment, have contributed to the compromised structural integrity of both hangars. The hangars now exhibit serious structural, electrical, and safety deficiencies, and both have been declared unsafe for occupancy and are vacant. As a result, helicopter maintenance activities performed in Hangars 2 and 3 were relocated to other facilities along the airfield. Because basic utilities are kept on throughout the year, approximately $350,000 per hangar is spent annually to provide minimum heating, electrical, and water utilities.

The purpose of the Proposed Action is to resolve the safety and fiscal concerns regarding the hangars, as well as to address the underutilization of the real property space they occupy. Determination of their disposition is needed to resolve their inability to meet the functional requirements as maintenance facilities for modern aircraft, to resolve their current condemned status that prevents them from serving an active military function at Fort Wainwright, and to resolve the safety hazard they present.

Implementation of a final decision on the disposition of Hangars 2 and 3 would meet the following objectives:

- Eliminate fire and safety issues associated with Hangars 2 and 3
- Eliminate non-mission essential funding expenditures
- Make available the valuable airfield space the hangars occupy to support the military mission because the hangars no longer meet the functional requirements of maintenance facilities for aircraft and are unable to support the aviation mission
- Meet the special requirements for NHLs under Section 110 of the NHPA and its implementing regulations (to the maximum extent possible, undertake such necessary planning and actions that minimize harm to NHLs)
- Avoid, minimize, or otherwise mitigate any adverse effects on historic resources through Section 106 consultation

EIS Study Area

The study area for this Draft EIS includes the area potentially influenced by the Proposed Action. The main study area includes Hangars 2 and 3 and the area immediately surrounding them; however, for some resource areas, the area potentially influenced by the Proposed Action extends beyond the

immediate vicinity. For example, air quality impacts have a regional influence; impacts to cultural resources include the Ladd Field NHL and the Cold War Historic District; and impacts from hazardous materials and hazardous waste and impacts to safety, environmental justice and the protection of children, and transportation may affect portions of Fairbanks North Star Borough (FNSB).

Public, Agency, and Tribal Outreach

The Army published a Notice of Intent (NOI) to prepare an EIS for the disposition of Hangars 2 and 3 in the *Federal Register* on November 16, 2011 (76 Federal Register 70978). Publication of the NOI began a 63-day scoping period from November 16, 2011, to January 17, 2012. The Army also published an Open House Public Meeting notice in the *Fairbanks Daily News-Miner* on November 11 and 16, 2011, and on December 4, 7, 11, and 14, 2011. The notice indicated the Army's intent to prepare an EIS, conduct Section 106 consultation, and hold a public scoping meeting on December 14, 2011.

The Army used the scoping period to help determine the resource areas to be addressed in the EIS and to identify significant issues related to the Proposed Action. Comments received during the scoping period suggested the following potential alternatives: donating the hangars to the Tanana Valley State Fair Association, converting one or both hangars into a roller derby rink for use by the local roller derby leagues, and moving both hangars to alternate locations in Fairbanks to be used by the community as a museum or to support other activities. These alternatives were considered and are addressed in Chapter 2.0 of the Draft EIS. Another comment indicated that alternatives for the Proposed Action need to take into account the military mission of Fort Wainwright. As described in Chapter 2.0 of the Draft EIS, as part of the screening criteria for alternatives, the mission of Fort Wainwright is taken into consideration in determining which alternatives to carry forward for analysis.

The USAG FWA held an agency scoping meeting on December 15, 2011, at the initiation of the EIS process to inform agencies of the Proposed Action and to solicit input on the potential alternatives and areas of concern that the individual agencies might have. Agency representatives provided a number of comments that helped the USAG FWA focus the EIS analysis on the environmental issues of importance. The major theme of the comments concerned the hangars' historical significance and context, the desire to preserve that significance, and accessibility to the public for appreciation. Additional comments included concerns about hazardous materials and air quality impacts.

The USAG FWA also consulted with Alaska Native tribes. Six federally recognized tribes were sent letters notifying them of the Army's intent to prepare an EIS and informing them about the public scoping meeting times and locations. The tribes were also offered the opportunity to enter into government-to-government consultation, as well as to become consulting parties to the NHPA Section

106 process. The letters were followed up with emails, telephone calls, and faxes, respective of the tribes' wishes for mode of communication. The Army received responses from four tribes (Village of Dot Lake, Healy Lake Village, Native Village of Tanacross, Native Village of Tetlin, and), indicating they would not require consultation. The remaining two tribes (Nenana Native Association and Northway Village) did not provide formal responses. The Army followed up with these two tribes via email and telephone calls to discuss the undertaking, and it was understood by the USAG FWA that although a formal response was not issued, consultation would not be required.

The Draft EIS has been filed with the U.S. Environmental Protection Agency (USEPA), and the Army published a Notice of Availability in the *Federal Register*. A 45-day public comment period begins on the date the USEPA publishes its notice of receipt of the Draft EIS in the *Federal Register*. Notices announcing the availability of the Draft EIS and the public meetings are being published in the *Fairbanks Daily News-Miner* four times between the release of the Draft EIS and the public meetings, and a final notice will be published in the newspaper prior to the end of the comment period. The Army also sent notices to agency and tribal representatives, as well as private individuals and organizations, that expressed interest in the EIS. Copies of the Draft EIS were provided to the Noel Wien Library, and the Draft EIS files were posted to the USAG FWA Environmental website available at: http://www.wainwright.army.mil/env/NEPA/Current.html.

An agency meeting and a public meeting will be held in Fairbanks, Alaska, to review the Army's Proposed Action and findings of the Draft EIS and to collect comments. The meetings will be an open house format and include a verbal presentation by Army representatives. A court reporter will transcribe the proceedings of the meetings and take formal comments at the public meeting. Comments submitted will be thoroughly considered and incorporated into the Final EIS, where appropriate.

Alternatives

The Army considered a wide range of potential alternatives for the disposition of Hangars 2 and 3 on Fort Wainwright. The USAG FWA used a screening process to evaluate five action alternatives, eventually narrowing the list to those considered reasonable and legally viable. This Draft EIS evaluates the only reasonable action alternative and the No Action Alternative.

Alternatives Screening Criteria

The following screening criteria were developed based on the purpose and need for the Proposed Action:

1. The action must directly address the disposition of Hangars 2 and 3.
2. The action must be compatible with the current and future military mission at Fort Wainwright.
3. The action must not be prohibitively expensive. This means a viable disposition option is one where the amount of money required to implement it would be supported by the Army's funding decision process or non-federal sources.
4. The action must have a reasonably foreseeable funding source, or mechanism for obtaining applicable and timely funding, to pay for life, health, and safety upgrades or demolition actions.

Alternatives Considered

The Army considered five separate alternatives:

1. Demolition of either Hangar 2 or Hangar 3 or both
2. Rehabilitation of either Hangar 2 or Hangar 3 or both to support identified uses
3. Removal and reconstruction of either Hangar 2 or Hangar 3 or both on Fort Wainwright
4. Closed layaway of either Hangar 2 or Hangar 3 or both
5. Transfer of ownership of either Hangar 2 or Hangar 3 or both to non-Army entities

The above four screening criteria were applied to all five of the alternatives and each of the alternative's specific uses. All of the action alternatives other than demolition of Hangars 2 and 3 were not compatible with the current or future military mission or were prohibitively expensive.

As a result of the analysis of the alternatives based on the screening criteria, only one action alternative was considered reasonable and will be carried forward in the Draft EIS for further evaluation—demolition of Hangars 2 and 3. None of the other uses met all four of the screening criteria and were dismissed from further evaluation. The No Action alternative also will be carried forward in the Draft EIS for a full analysis in accordance with Council on Environmental Quality regulations (40 CFR §1502.14).

Alternative 1: Demolition of Hangars 2 and 3

Under this alternative, Hangars 2 and 3 and their supporting infrastructure would be demolished beginning in spring 2014. Demolition would involve removal of the hangars, totaling 24,016 cubic yards of non-hazardous debris; demolition of existing and abandoned utilities not belonging to Doyon Utilities (the current utility provider for the installation), totaling approximately 2,680 linear feet;

demolition of existing parking areas for privately owned vehicles, lighting, head bolt outlets and power source, encompassing an area of approximately 3.3 acres; and demolition of the concrete building slabs and foundations within 5 feet of the building, to a depth of 8 inches, totaling approximately 2,075 cubic yards of debris. In addition, a small (200-square-foot), open, flammable liquids storage facility located between Hangars 2 and 3, which is currently empty, would be demolished, totaling approximately 91 cubic yards of debris. Prior to demolition, the Army would conduct hazardous material surveys of the buildings and their supporting infrastructure, including surveys for soil contamination. The Army would remove and dispose of any hazardous materials found. Asbestos containing building materials would be disposed of in the Fort Wainwright landfill, while all other hazardous materials would be disposed of off-post in the FNSB landfill in accordance with applicable federal and state regulations. Non-hazardous demolition debris would be disposed of in the FNSB landfill; however, the Army would divert (i.e., salvage, recycle, or reuse) non-hazardous materials from being placed in the landfill to the maximum extent practicable.

Once demolition of the hangars is complete, concrete would be added to the building and infrastructure footprints to maintain consistency with the adjacent airfield, which is designated as an aircraft parking apron. The Army would construct two asphalt access roads to the new apron to facilitate travel by emergency and maintenance vehicles. Infiltration areas, swales, and culverts for stormwater would be installed as needed, to include the addition of topsoil and seeding. Security fencing, compatible with existing design, would also be installed. The total area encompassed by this project is approximately 10 acres. Any future construction on this site is currently unknown and is beyond the scope of this EIS. If future construction does occur, it would be the subject of separate NEPA documentation. Alternative 1 is the Army's preferred alternative.

Alternative 2: No Action

Under the No Action Alternative, no demolition of Hangars 2 and 3 would occur. While remaining intact, the hangars would continue to not meet the functional requirements of maintenance facilities for aircraft and would serve no active military function. The hangars would remain vacant because they have been found to be unsafe for occupancy. The Army would continue to heat the facilities to prevent snow buildup on the roofs (which, if allowed to accumulate, could cause their collapse). Maintenance and upkeep of the hangars, such as security patrols, pest control, and building systems maintenance, would continue based on current funding levels and other maintenance priorities at Fort Wainwright; however, as large structural systems fail, they would not be replaced or receive major repairs. For example, recent freezing and bursting of water pipes in Hangar 2 in late 2012 rendered the fire

suppression system within the side offices inoperable. Unsafe working conditions and current funding levels prevent this system from being repaired.

Maintenance and upkeep of the hangars, including utilities, requires approximately $350,000 per hangar in annual funding. Given the current disrepair of the hangars, they present safety concerns for any person entering them, and in some cases, safety concerns prevent maintenance (USAG FWA, 2011a). Prior to their condemnation in 2011, the following maintenance activities were performed: fire suppression sprinkler maintenance, oil-water separator maintenance, minor facility preventative maintenance, and project-by-project repair maintenance. All maintenance activities except fire suppression sprinkler maintenance were halted following the determination that the hangars were unsafe for occupancy. Because there will be no large-scale rehabilitation efforts and the likelihood that future system failure will not result in replacement or repair, the structural integrity of the hangars will continue to deteriorate over time. The eventual uncontrolled collapse of the buildings or perhaps the total loss of one or both hangars by fire, due to inoperable fire suppression systems, is likely. At such time the buildings do collapse, all debris would be treated as waste and disposed of in the FNSB landfill. Due to the uncontrolled nature of the potential collapse, it is likely that the option for salvaging, recycling, or reusing building materials would be eliminated. Thus, the total amount of debris generated under the No Action Alternative would likely be more than that generated under Alternative 1 due to the inability to divert materials from local landfills. Any follow-on actions associated with the location would be subject to funding, but the current preference would be that concrete is added to the building footprints to maintain consistency with the adjacent airfield as an aircraft parking apron.

Environmental Consequences and Proposed Mitigation Measures

This Draft EIS presents the existing environment and the potential environmental consequences that could occur with implementing Alternative 1, Demolition of Hangars 2 and 3, or Alternative 2, No Action, as well as mitigation measures for reducing environmental impacts associated with the alternatives. Table ES-1 summarizes the environmental impacts associated with each alternative for each resource area evaluated in this Draft EIS. A summary of proposed mitigation measures is provided after the table.

Table ES-1: Summary of Environmental Impacts

Resource Area	Alternative 1: Demolition of Hangars 2 and 3	Alternative 2: No Action
Air quality	Short-term and minor Long-term and beneficial	Short-term and minor Long-term and beneficial
Cultural resources	Severe—loss to Ladd Field NHL and Cold War Historic District Moderate—integrity of Ladd Field NHL and Cold War Historic District	Severe—loss to Ladd Field NHL and Cold War Historic District Moderate—integrity of Ladd Field NHL and Cold War Historic District
Hazardous materials/hazardous waste	Minor and beneficial	Moderate
Safety	Short-term and minor Long-term and beneficial	Moderate
Environmental justice and protection of children	No impact	No impact
Sustainability	Short-term and minor Long-term and beneficial	Moderate
Transportation	Short-term and minor Long-term—no impact	Short-term and minor Long-term—no impact

Notes: Cold War Historic District – Ladd Air Force Base Cold War Historic District, Ladd Field NHL – Ladd Field National Historic Landmark

For all of the resource areas, except cultural resources, none of the effects of the Proposed Action would result in significant impacts; therefore, no mitigation measures are needed and none were identified. For cultural resources, the loss of the hangars as contributing resources to the Ladd Field NHL and the Cold War Historic District, either through demolition under Alternative 1 or the likely uncontrolled collapse of the buildings under the No Action Alternative, would be a severe impact. Despite the physical loss of the hangars, the impact to the overall integrity of the Ladd Field NHL and Cold War Historic District would be moderate. Because of the adverse impacts to the Ladd Field NHL and the Cold War Historic District, mitigation measures were developed and agreed upon in a Memorandum of Agreement (MOA) among the USAG FWA, the Alaska State Historic Preservation Office, and the Advisory Council on Historic Preservation through the Section 106 consultation process. The mitigation measures, which are fully described in the MOA, will include public outreach,

re-evaluation of the Ladd Field NHL, and stewardship of the Ladd Field NHL. Mitigation under the No Action Alternative would be the same as under Alternative 1, except the time frame for completing the stipulations would be based on the date of execution of the MOA, rather than on the demolition of the hangars.

Though the Proposed Action would not result in significant impacts to any of the resource areas other than cultural resources, there are a number of standard measures, including best management practices, that would be employed where appropriate, to reduce or minimize potential impacts for air quality, hazardous materials and hazardous waste, and transportation.

Cumulative Effects Analysis

The Army conducted a cumulative impact assessment to determine if the combined effects of each alternative along with other projects in the region might be significant. After review of past, present, and reasonably foreseeable future actions occurring in the same region of influence as the Proposed Action, the Army determined that the following resources could be sensitive to cumulative effects: cultural resources and hazardous materials/hazardous waste.

For cultural resources, the geographic scope of analysis was expanded to include World War II resources in Alaska, with particular focus on World War II NHLs in Alaska. For hazardous materials/hazardous waste, the geographic scope included FNSB. Other past, present, and reasonably foreseeable future actions considered during the cumulative effects analysis comprise military construction, military training, military reorganization, and World War II resources. The analysis in the Draft EIS concludes that there would be cumulative effects on cultural resources and from hazardous materials/hazardous waste; however, the effects would not be significant. For cultural resources, the loss of the two hangars would contribute to the dwindling numbers of World War II resources in Alaska, resulting in moderate cumulative impacts. For hazardous materials/hazardous waste, the amount of construction and demolition debris from the Proposed Action and other identified projects disposed of in the landfills would contribute to minor cumulative impacts. Impacts would be minor because the Fort Wainwright landfill already has a proposed closure date of September 2015 and the FNSB landfill already accepts on average 298 tons of debris per day and is expected to be operational until the year 2086.

Conclusion

After considering public, agency, and tribal input and comments on the Draft EIS, and reviewing the environmental impacts associated with the alternatives to the Proposed Action, the Army will select an alternative to implement. The Army's final decision, to be made by the USAG FWA Garrison Commander, will be documented in a Record of Decision and take into account technical and economic feasibility; life, health, and safety concerns; environmental issues; and the ability to meet objectives of the Fort Wainwright and U.S. Army Alaska missions.

ACRONYMS AND ABBREVIATIONS

µg	Microgram
18 AGRS	18th Aggressor Squadron
ACBM	Asbestos Containing Building Materials
ACHP	Advisory Council on Historic Preservation
ADEC	Alaska Department of Environmental Conservation
APE	Area of Potential Effect
ANILCA	Alaska National Interest Lands Conservation Act
AQI	Air Quality Index
AR	Army Regulation
Army	U.S. Department of the Army
AT/FP	Anti-Terrorism/Force Protection
AVCATT	Aviation Combined Arms Tactical Trainer
BMP	Best Management Practice
CAA	Clean Air Act
C&D	Construction and Demolition
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHPP	Central Heating and Power Plant
cm^2	Square Centimeter
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
Cold War Historic District	Ladd Air Force Base Cold War Historic District
DoD	Department of Defense
EIS	Environmental Impact Statement
FIS	Facility Investment Strategy
FNSB	Fairbanks North Star Borough
FY	Fiscal Year
GHG	Greenhouse Gas
HTRW	Hazardous, Toxic, Radiological Waste
HVAC	Heating, Ventilation, and Air Conditioning
IMCOM	Installation Management Command
IRP	Installation Restoration Program
JBER	Joint Base Elmendorf-Richardson

kg	Kilogram
Ladd AFB	Ladd Air Force Base
Ladd Field NHL	Ladd Field National Historic Landmark
LBG	The Louis Berger Group, Inc.
LBP	Lead-based Paint
LEED	Leadership in Energy and Environmental Design
LOS	Level of Service
m^3	Cubic Meter
MBTA	Migratory Bird Treaty Act
mg	Milligram
MILCON	Military Construction
MOA	Memorandum of Agreement
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NO_X	Nitrogen Oxide
NPL	National Priorities List
NPS	National Park Service
O_3	Ozone
OPA	Oil Pollution Act
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
Pb	Lead
$PM_{2.5}$	Particulate Matter with a Diameter Less Than or Equal to a Nominal 2.5 Micrometers
PM_{10}	Particulate Matter with a Diameter Less Than or Equal to a Nominal 10 Micrometers
POL	Petroleum, Oils, and Lubricants
POM	Program Objective Memorandum
POV	Privately Owned Vehicle
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
RCI	Residential Communities Initiative
ROD	Record of Decision
ROI	Region of Influence
RPLANS	Real Property Planning and Analysis System

Rule	Determining Conformity of Federal Actions to State or Federal Implementation Plans
SHPO	State Historic Preservation Office
SO_2	Sulfur Dioxide
SO_X	Sulfur Oxide
SRM	Sustainment, Restoration, and Modernization
TMC	Troop Medical Clinic
TPY	Tons per Year
TSCA	Toxic Substances Control Act
TYHS	Tanana Yukon Historical Society
UAS	Unmanned Aircraft System
U.S.	United States
USACE	United States Army Corps of Engineers
USAG FWA	United States Army Garrison Fort Wainwright, Alaska
USARAK	United States Army Alaska
USEPA	United States Environmental Protection Agency
UMMCA	Unspecified Minor Military Construction, Army
USFWS	United States Fish and Wildlife Service
U.S.C.	United States Code
VOC	Volatile Organic Compound

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1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

The United States (U.S.) Army Garrison Fort Wainwright, Alaska (USAG FWA) prepared this Draft Environmental Impact Statement (EIS) to assess the potential environmental impacts of its proposal to determine and implement the disposition[2] of Hangars 2 and 3 and supporting infrastructure,[3] located on the Main Post of Fort Wainwright, Alaska. The U.S. Department of the Army (Army) considered dispositions, ranging from various reuses to demolition. The hangars are contributing resources to the Ladd Field National Historic Landmark (Ladd Field NHL) and the Ladd Air Force Base (Ladd AFB) Cold War Historic District (Cold War Historic District). Constructed between 1943 and 1944 as semi-permanent structures, these hangars have received varying degrees of operational maintenance over the years, but no large-scale rehabilitation has occurred. To accommodate changing missions, the Army completed numerous interior modifications to the hangars, including creating doorways and windows and altering the interior lateral cross-bracing. The lack of a large-scale rehabilitation and the numerous interior modifications, along with the age of the structures, a fire in Hangar 2, and the harsh Alaskan environment, have contributed to the compromised structural integrity of both hangars. The USAG FWA has condemned the buildings, and they are no longer used because of the safety hazard they present.

This Draft EIS has been prepared in accordance with the National Environmental Policy Act of 1969, as amended (NEPA) (42 United States Code [U.S.C.] §4321 et seq.); NEPA-implementing regulations issued by the President's Council on Environmental Quality[4] (CEQ) (40 Code of Federal Regulations [CFR] §§1500–1508); and the Army's NEPA-implementing regulation (32 CFR §651, *Environmental Analysis of Army Actions*). The purpose of this Draft EIS is to inform the decision makers, agencies, interested parties, Alaska Native tribes, and the public of possible environmental consequences associated with the reasonable disposition alternatives for Hangars 2 and 3.

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[2] For purposes of this study, the term disposition refers to the future and final treatment of the hangars.

[3] The supporting infrastructure includes, but is not limited to, concrete foundations, the small, empty, flammable liquids storage facility located between Hangars 2 and 3, paved parking areas, utilities (i.e., service utilidors, manholes, vents, utility poles, head bolt heaters, electrical power lines, and communications), and the security fence line.

[4] Established within the Executive Office of the President by Congress as part of NEPA, CEQ oversees federal agency implementation of the environmental impact assessment process and ensures that federal agencies meet their obligations under NEPA.

As contributing resources[5] to both the Ladd Field NHL and Cold War Historic District, Hangars 2 and 3 are important resources to Fort Wainwright's history. Because of their special designation as part of the Ladd Field NHL, the determination of their disposition merits special consideration. The USAG FWA has entered into consultation concerning the hangars' proposed disposition as required by Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR §800). The USAG FWA concludes that the disposition of the hangars would result in historic properties being adversely affected. The disposition of the hangars would adversely affect two contributing resources and, in so doing, would adversely affect the Ladd Field NHL and Cold War Historic District. In accordance with 32 CFR §651.41(b), an EIS is required when a proposed action has the potential to significantly affect historic resources; consequently, the USAG FWA prepared a Draft EIS for this action.

NHLs are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage and history of the United States (NPS, 2012a). Currently, there are approximately 2,500 properties with this distinction. Because NHLs possess national-level significance, the NHPA includes provisions that specifically address a federal agency's responsibilities when its activities affect these properties. Section 110(f) of the NHPA requires that federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs. The law requires that agencies "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark."

Section 106 consultation and considerations and NEPA analysis were coordinated to prevent a duplication of efforts and ensure that all relevant information was shared and available to support the development of disposition alternatives, as well as to support an informed decision on the Proposed Action. More information about the Section 106 consultation process can be found in Section 1.5.

1.1.1 U.S. Army in Alaska – History and Mission

The Army has had a presence in Alaska since 1867, when the territory was transferred from Russia to the United States. Initially, Soldiers were charged with maintaining law and order in the new territory and

[5] A historic district is a geographically definable area that possesses a significant concentration of elements (contributing resources) that are united by past events, by plan, or by physical development. A contributing resource can be a building, site, structure, or object that adds to the historical or traditional cultural associations, historic architectural qualities, or archaeological values for which a historic district or historic property is significant (NPS, 1998).

helped build new forts at Wrangell and St. Paul Canal and on Kodiak Island and the Kenai Peninsula (Army, 2012a). Through the late 1800s to the turn of the century, the Signal Corps operated weather stations, and a number of officers led small geographic explorations into various parts of Alaska as mapmaking and road and bridge building expanded the frontier (Army, 2012a). The Army in Alaska saw a decline in activity from 1908 to 1938, followed by a surge in activity during World War II. Beginning in 1938, military construction accelerated in advance of World War II. The Army built Ladd Field, near Fairbanks, in 1940 as a cold weather test station, and Fort Richardson, near Anchorage, in 1940/1941 (Army, 2012a). During World War II, Alaska played a critical role in the North Pacific Theater. Ladd Field was the aircraft transfer point in the Lend-Lease Operations[6] between the United States and the Soviet Union. Following World War II, many small Army installations throughout the state closed, and the emphasis of the remaining installations turned to training (Army, 2012a).

Today, the Army in Alaska is protecting America's interests in the Pacific Region and providing forces to overseas contingency operations. Headquartered at Joint Base Elmendorf-Richardson (JBER), U.S. Army Alaska (USARAK) has units at two installations (Fort Wainwright and JBER) collectively covering 1.65 million acres with nearly 12,000 Soldiers and 2,500 civilian employees. Its mission is to deploy combat-ready forces to support joint military operations worldwide and serve as the Joint Forces Land Component Command to support Joint Task Force Alaska (Army, 2012a). Forces currently stationed at Fort Wainwright are the 1st Stryker Brigade Combat Team and the 16th Combat Aviation Brigade (Army, 2012a).

1.1.2 History of Ladd Field and Hangars 2 and 3

The installation, known today as Fort Wainwright, entered the world stage during the 1940s because of a unique episode in American military history brought about by weather, geography, and international politics. In 1939, in anticipation of an impending war on the European front, construction began on a small, cold weather test station designated as Ladd Field, the first Army airfield in Alaska. Even before the construction of facilities was complete, the Cold Weather Test Detachment was immediately stationed at Ladd Field with the primary mission to ensure that all military aircraft could function and be maintained in extreme arctic and sub-arctic conditions.

[6] Under Public Law 77-11, the U.S. government assisted Allied forces during the war by providing Lend-Lease deliveries of aircraft and war materiel. From 1942–1945, the U.S. government supplied the Soviet Union with more than 7,900 U.S.-built aircraft over the Alaska-Siberia route. Pilots from the Air Transport Command flew aircraft from Great Falls, Montana, through Canada and Alaska until they reached Ladd Field. At Ladd Field (the official transfer point), Soviet pilots took over the ferrying operation, flying the aircraft to Nome, then across Siberia, and on to the European war front.

While cold weather testing remained an important element of Ladd Field during World War II, the airfield became a critical component to an act of U.S. diplomacy with the Soviet Union, in part, because of its location and its cold weather testing activities. Under the authority of the Lend-Lease Bill, which the U.S. Congress passed on March 11, 1941, the United States and Soviet Union agreed that Ladd Field would be the transfer point for thousands of warplanes provided to the Russians to assist in the fight against Germany. Alaska's position on the world map made it ideal as a transfer point. A route was established to ferry planes to Ladd Field. There, the United States transferred the planes to Russian ownership, and Russian Soldiers then flew the planes across Alaska into Siberia and delivered them to the front lines of World War II. Ladd Field's geography also made it a perfect location for aircraft repair and a supply depot.

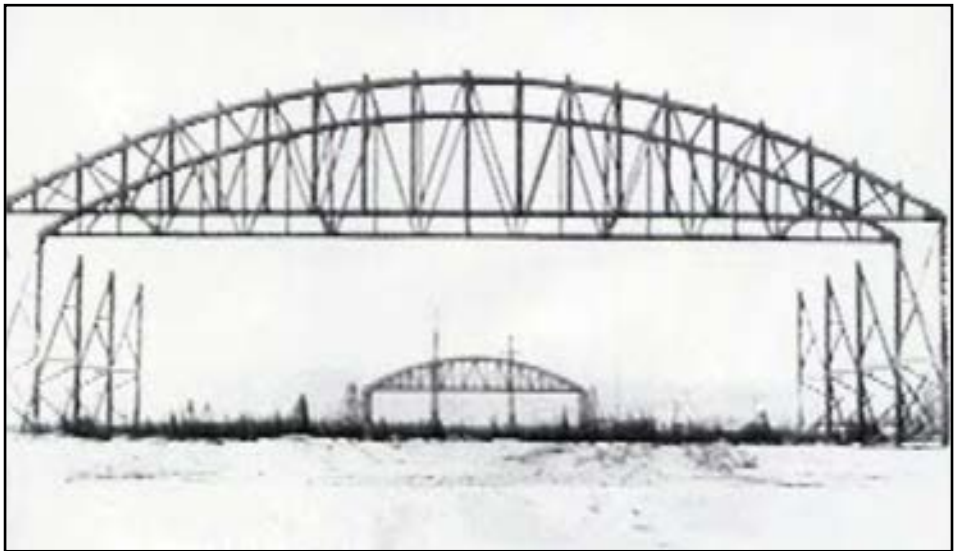
With the demands of wartime, Ladd Field was quickly transformed from a small, carefully planned permanent garrison into a major military installation that was home to thousands of troops. Originally, Ladd Field was planned as a permanent garrison and the buildings were laid out in a horseshoe pattern on the north side of the main runway with the massive Hangar 1 dominating the scene next to the airfield. Along the horseshoe, there were quarters for enlisted men and officers, a hospital, theater, power plant, and the commander's house (Figure 1-1). The design and construction of this portion of the field occurred before the demands of the war created an emergency situation in which appearances were expendable, and utility and speed of construction were critical. During this period of utility and rapid expansion, the airfield grew with more than 700 buildings constructed to accommodate the addition of 4,500 troops needed to support aircraft repair, supply depot activities, and Lend-Lease Operations. Hangars 2 and 3 were two of these wartime facilities built solely to support the war effort. During World War II, Hangars 2 and 3 were used as aircraft maintenance hangars. In addition, Hangar 2 was used as a parachute and cold weather testing sewing shop, and Hangar 3 served as a passenger terminal.

Located on the southwest corner of Ladd Field, Hangars 2 and 3 are twin Birchwood hangars, named after the first hangar of this type constructed at Birchwood Airfield near Anchorage, Alaska. The hangars feature structural systems that are constructed completely of wood. Birchwood hangars were built at a number of installations throughout Alaska, including Eareckson Air Station on Shemya Island and at Galena Airfield, but few survive today. The structural design allowed for their closed bowstring wood trusses and barrel vault-shaped roofs to provide a clear span across the full open bay of both hangars (Figures 1-2 and 1-3). The north and south elevations of each hangar bay are flanked by two-story, shed-roofed housing offices and classroom spaces.

Figure 1-1: Hangar 1 and Surrounding North Post Buildings, 1942 (View to the Southwest)

Source: Army

Figure 1-2: Truss System, 1943



Source: Army

Figure 1-3: Interior Trusses, 1986

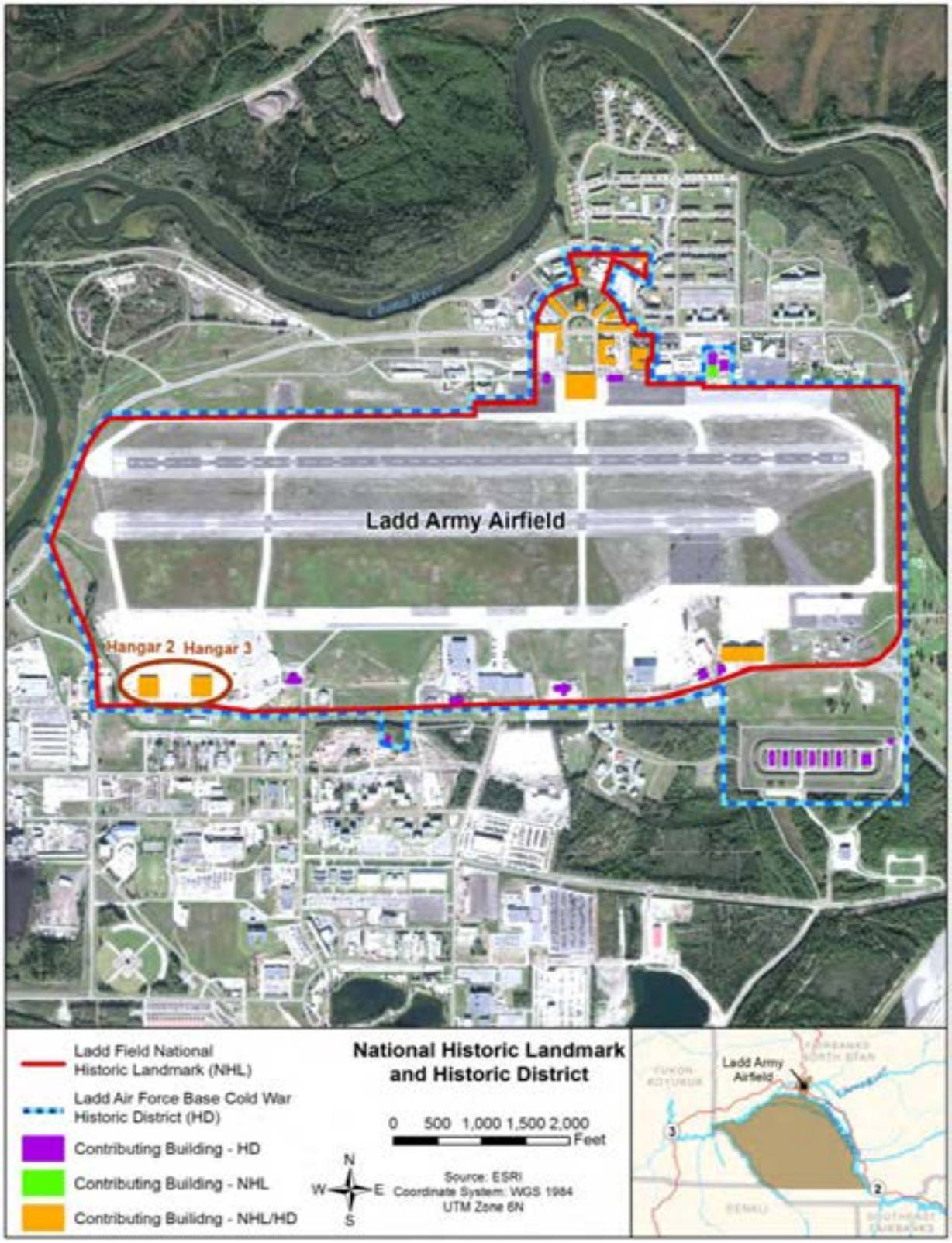
Source: Army

In 1947, Ladd Field was transferred to the 11th Air Force, and renamed Ladd Air Force Base. During the Cold War, Ladd AFB served as the Alaska Air Command headquarters for all of the territory north of the Alaska Range. During the Korean War, the U.S. Department of the Air Force (Air Force) constructed additional facilities at Ladd AFB and also stationed fighter-intercept squadrons there, some of which were housed in Hangars 2 and 3. In 1960, the Air Force suspended flying operations at the installation, and in January 1961, the Air Force transferred Ladd AFB back to the Army and it was renamed Fort Wainwright.

Constructed between 1943 and 1944, Hangars 2 and 3 were part of the World War II expansion of Ladd Field, and they remained in continuous use as aircraft hangars for almost 70 years, until spring 2011. The hangars initially served as repair and maintenance facilities for fixed-wing aircraft and in recent years provided the same function for helicopters. Because of issues concerning the structural integrity of the hangars, the USAG FWA Directorate of Public Works structural engineers found Hangars 2 and 3 to be unsafe for occupancy and officially condemned the buildings in March and April 2011, respectively (Webb, 2011a,b). They are currently unoccupied.

In 1985, the National Park Service (NPS) designated Fort Wainwright's Ladd Field as a NHL (Figure 1-4) for the role it played in supporting the Army's Cold Weather Test Detachment and as the transfer

Figure 1-4: Ladd Field National Historic Landmark



point for the Alaska-Siberia route of the Lend-Lease Operations during World War II. The NHL is bound on the east and west by the Chena River and on the north and south by roads established during World War II. Currently, the NHL encompasses 20 resources. The majority of the contributing resources are located in the North Post area, including Hangar 1 (Building 1557) where physical transfer of planes occurred. The south edge of the NHL contains World War II hangars and non-contributing service buildings. Hangars 2 and 3 are contributing resources to the Ladd Field NHL, making the hangars nationally significant. In addition, the hangars are contributing resources to the Cold War Historic District at Fort Wainwright, which was identified in 2010 for its association with the strategic air reconnaissance, air defense, and Arctic research missions of the Cold War. The Cold War Historic District boundaries largely encompass the same area as the NHL.

1.1.3 Hangars 2 and 3 Background – Maintenance Context

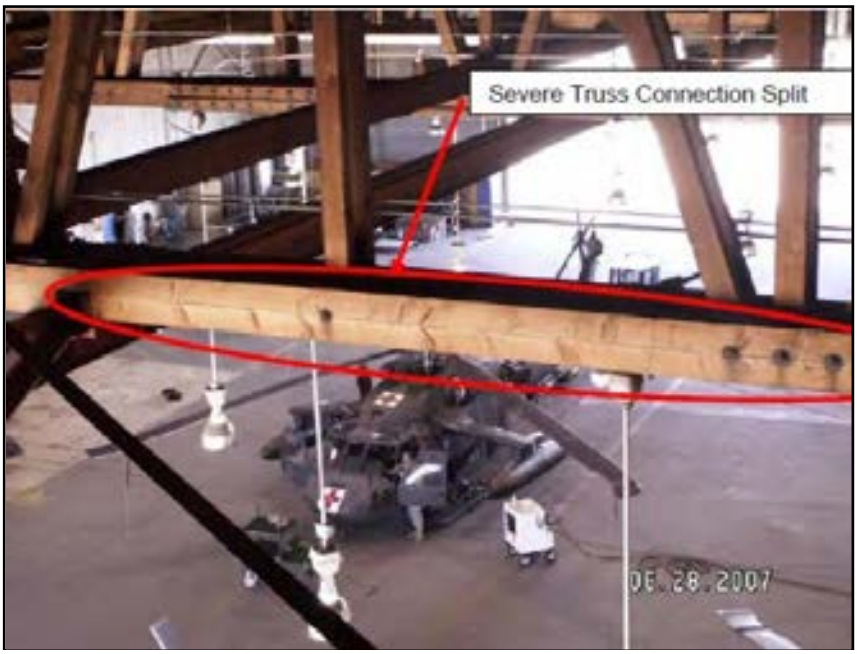
The military built Hangars 2 and 3 between 1943 and 1944 as semi-permanent structures. The military employed two general types of construction during the war effort: temporary and permanent. These general types of World War II construction may be further subdivided into four categories: (1) permanent; (2) semi-permanent; (3) temporary; and (4) theater-of-operations. Permanent construction was intended for use after the war; it typically was built of masonry (brick, tile, or concrete) and metal frame. Semi-permanent construction typically consisted of cinderblock construction, wooden-frame construction clad with synthetic siding, or a mixture of wooden frame and masonry. Semi-permanent construction often resulted from ad hoc compromises between the desire for permanent construction and shortages of time and material (Goodwin and Associates, Inc., 1997).

In 1977, when the hangars were 35 years old, a Building Information Schedule[7] for Fort Wainwright, Alaska, indicated that each hangar would reach the end of its functional lifespan in 1983 and recommended they both be replaced at that time (Dickinson-Oswald-Walch-Lee Engineers/Maynard NBBJ Alaska Architects and Planners, 1977). Nevertheless, in 1983, the Army did not replace the hangars, and they continued to be used without a long-term plan or funding to perform a large-scale rehabilitation of the structures. Funding was focused on mission-essential programs and needs of the installation with maintenance and repair of Hangars 2 and 3 occurring as necessary.

[7] The Army used the information compiled in a Building Information Schedule to evaluate building conditions and uses. The completed form contains information for each numbered building. This information includes available utilities, number of stories, square footage, type (permanent, semi-permanent, or temporary), year built, materials, uses (original, current, and recommended), and estimated life. Reduced site plans and mimeographed and annotated building lists that duplicate or supplement the standard form information are also included (U.S. National Archives and Records Administration, 2012).

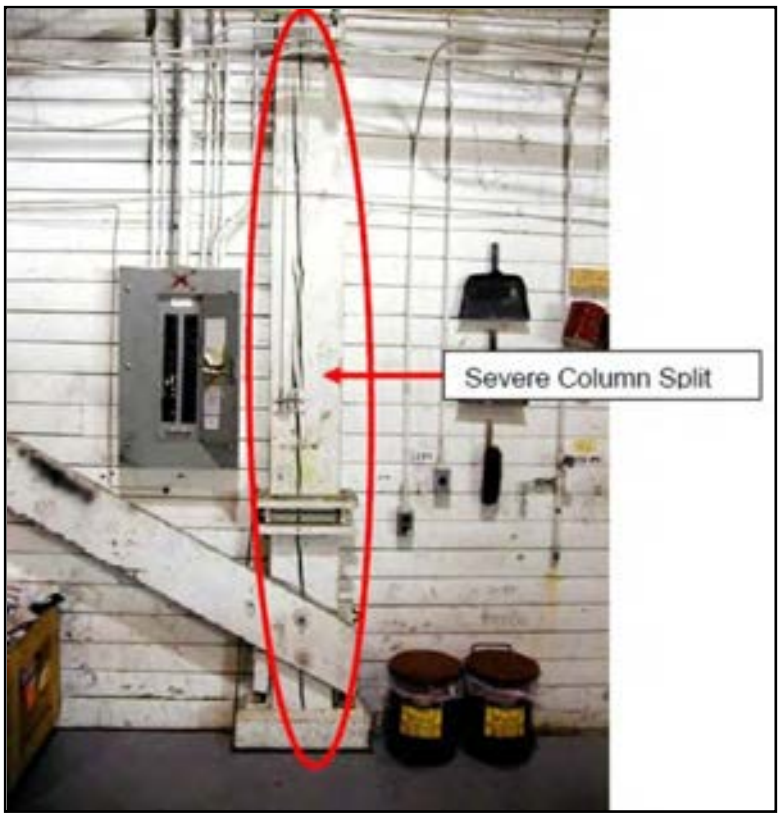
Over the past 70 years, the structural integrity of the wooden trusses has deteriorated with age and exposure to the harsh Alaskan environmental conditions, and they currently meet nine of the top eleven reasons why bowstring wooden trusses fail (Provenghi, 2009; Webb, 2011b). Structural assessments of the hangars indicate that most wooden framing members display weaknesses resulting from cracking and splitting (Figures 1-5 through 1-8). As a result, the hangars' ceiling trusses cannot support helicopter maintenance equipment, and their infrastructure no longer meets the standards of a functional work space. According to Army Real Property regulations (Department of the Army Pamphlet 415-28 [Army, 2006a]), a building that provides consolidated multipurpose space for the maintenance, repair, and major overhaul of military aircraft and includes maintenance bays, tech supply, production control, and quality control areas directly related to the maintenance and supervision of aircraft, component and assembly rebuilding, and quality control of aviation maintenance, is considered a facility that can provide a functional work space for organizational, installation, or depot-level aviation maintenance. Because of the hangars' lack of structural integrity, to include weakened trusses and the inability of the roofs to meet current building codes for snow load, the Army condemned both hangars in March and April of 2011 and subsequently recorded them as "non-functional" in Fort Wainwright's real property records in May of 2011. The Army changed the operational status of the hangars from "functional" to "non-functional" after considering the Directorate of Public Works structural engineering reports and the facility category code definitions.

Figure 1-5: Splitting of Trusses – Hangar 3



Source: Army

Figure 1-6: Failed Truss Splice – Hangar 2

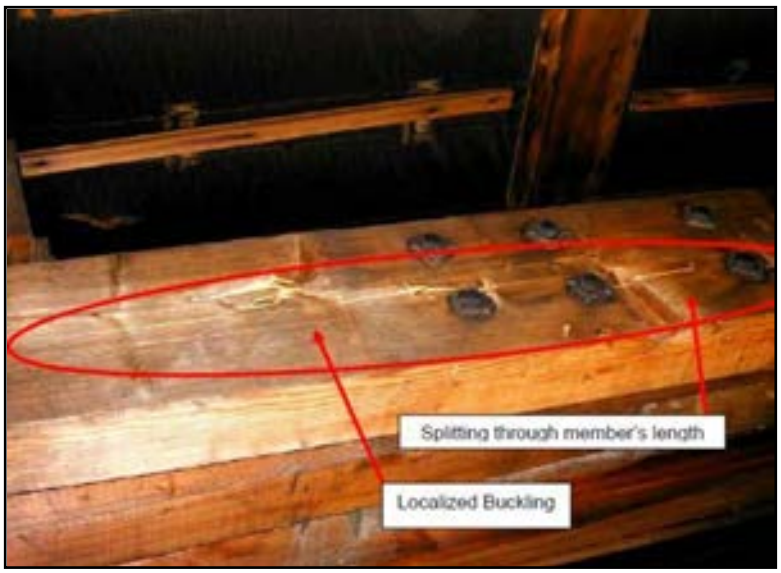


Source: Army

Figure 1-7: Broken Truss Chord – Hangar 3

Source: Army

Figure 1-8: Failing Truss Member – Hangar 2



Source: Army

While no large-scale rehabilitation of the structures has taken place, maintenance and repair projects have occurred as needed including, but not limited to, upgrades to the hangar doors (1960, 1962, and 1979), repairs to roof trusses (1973 and 1984), roof repairs (1950, 1960, 1962, 1963, 1991, and 1996), exterior frame wall repairs (1974), and installation of new fire protection (1978 and 1986) and heating systems (1971 and 1983, 1993). Major alterations to the buildings have resulted in the replacement of the original hangar doors (1989), windows (1971 and 2001), siding (1974), and roofing materials (1970 and 1986). With no previous funding to perform a large-scale rehabilitation, the hangars now exhibit serious structural, electrical, and safety deficiencies. Additionally, during many of the interior door and window alterations and additions, load bearing structural members were severed to accommodate these changes, further compromising the structural integrity of the structures.

In 2009, the Army continued its transformation in Alaska by expanding USARAK's aviation assets and capabilities at Fort Wainwright to support both integrated training for existing USARAK forces and to enhance the Army's capability to support military operations around the world. To support the 2009 transformation, the Army is currently building three new modern hangars at Fort Wainwright to provide consolidated indoor storage, as well as space for the maintenance and repair/reconditioning of helicopter engines, airframes, and electronic and optical systems, facility maintenance functions that could not be met by Hangars 2 and 3 (CH2M HILL, Inc., 2009). Hangars 2 and 3 were to be used to support aviation operations until the Army constructed its new helicopter hangars, which are expected to be fully operational in 2014. However, on February 17, 2011, an electrical fire in Hangar 2 severely damaged the west end of the hangar roof decking and the roof trusses (Figures 1-9 through 1-11),

prompting the USAG FWA Directorate of Public Works structural engineers to conduct investigations that indicated that Hangar 2 lacked structural integrity. In March 2011, these Army engineers found Hangar 2 to be unsafe for occupancy (Webb, 2011a). Army engineers also performed a structural assessment of Hangar 3 and found the same structural deficiencies, resulting in Hangar 3 being declared unsafe for occupancy in April 2011 (Webb, 2011b). As a result, helicopter maintenance activities performed in Hangars 2 and 3 were immediately relocated to other facilities along the airfield. Currently, Hangars 2 and 3 are unoccupied and lack the structural integrity needed to house any military functions (see Section 1.1.2 for additional information).

Figure 1-9: Hangar 2 Fire – February 2011

Source: Army

Figure 1-10: Fire Damage Truss #8

Source: Army

Figure 1-11: Loss of Connectivity Between Members

Source: Army

1.2 Purpose and Need for Action

The purpose of the Proposed Action is to determine a disposition for Hangars 2 and 3 that will resolve safety and fiscal concerns and land use issues and comply with statutory requirements. As noted in Section 1.1, disposition is needed because the hangars no longer meet the functional requirements of maintenance facilities for the modern Army aircraft fleet, currently serve no active function, and are a safety hazard due to their compromised structural integrity. Additionally, the hangars continue to be heated in the winter months to help prevent snow buildup on the roofs which, if left to accumulate, could collapse the structures. Maintaining the minimum heating (to avoid roof collapse and frozen pipes), electrical (to maintain indoor and outdoor lighting, fire suppression systems, pump mechanisms and equipment failure notifications), and water (to ensure fire suppression) requirements creates annual utility costs for these unoccupied facilities of approximately $350,000 per hangar (see additional information in Section 2.4.1). Contributing to these high utility costs is the fact that these hangars were not originally constructed with energy efficiency as a primary goal, and these high utility costs divert operation and maintenance funds that could be used for other priority projects on Fort Wainwright.

A decision on the disposition of Hangars 2 and 3 would:

- Eliminate fire and safety issues associated with Hangars 2 and 3
- Eliminate non-mission essential funding expenditures

- Make available the valuable airfield space the hangars occupy to support the military mission because the hangars no longer meet the functional requirements of maintenance facilities for modern aircraft and are unable to support the aviation mission
- Meet the special requirements for NHLs under Section 110 of the NHPA and its implementing regulations (to the maximum extent possible, undertake such necessary planning and actions that minimize harm to NHLs)
- Avoid, minimize, or otherwise mitigate any adverse effects on historic resources through Section 106 consultation

1.3 Scope of Environmental Analysis

This Draft EIS identifies, documents, and evaluates the potential impacts of demolishing Hangars 2 and 3 including direct, indirect, long-term, and short-term impacts; any irreversible or irretrievable commitments of resources; cumulative impacts; and practical mitigation measures for reducing environmental impacts associated with the Proposed Action on the environmental, cultural, and socioeconomic resources of Fort Wainwright. This Draft EIS focuses on the resources, ecosystems, and human communities of concern that the Proposed Action could affect. The scope of this Draft EIS was determined through a combination of internal Army planning, as well as public and agency input and concerns expressed during the scoping period (for public and agency concerns taken into consideration see Section 1.6, *Public Involvement*). The Army has determined that the actions associated with demolishing the hangars have the potential to result in adverse impacts to air quality, cultural resources, hazardous materials/hazardous waste, human health and safety, socioeconomics, sustainability,[8] and transportation; therefore, these resource areas are analyzed in detail in this Draft EIS. Chapter 3.0, Section 3.1.2, *Presentation of Resource Areas*, further identifies these resource areas and the resource areas that were considered but not carried forward for detailed analysis because of their low potential to be affected.

The geographic scope of this Draft EIS includes the area potentially influenced by the Proposed Action. The main study area includes Hangars 2 and 3 and the area immediately surrounding them; however, for some resource areas, the area potentially influenced by the Proposed Action extends beyond the immediate vicinity. For example, air quality impacts have a regional influence, while impacts to

[8] For the purposes of the Army and Fort Wainwright, sustainability is centered on meeting current and future mission requirements worldwide, while safeguarding human health and improving the quality of life and enhancing the natural environment (Army, 2004).

cultural resources include the Ladd Field NHL of which the hangars are contributing resources (Figure 1-4). For cultural resources, the USAG FWA has considered the cumulative effect of the Proposed Action on cultural resources on the larger collection of World War II-related historic properties in Alaska. The geographic scope or region of influence for each resource area is identified in Chapter 3.0 within the discussion for each resource area.

1.4 Decision to be Made

This Draft EIS provides public officials, citizens, and Army decision makers with the information necessary to evaluate the environmental, cultural, and socioeconomic impacts associated with the proposed alternatives. The Draft EIS will help the USAG FWA Garrison Commander, the Army's decision maker, make a decision that is based on an understanding of environmental consequences and take action to protect, restore, and enhance the environment. It also provides a record of public, tribal, and agency input received on the Proposed Action, the environmental analysis presented in the Draft EIS, and how the Army considered that input during this process.

The decision to be made is whether or not to demolish Hangars 2 and 3. The final decision and rationale for selection will be presented in a Record of Decision (ROD). Through the NEPA process, alternatives for implementing the Proposed Action are developed and analyzed to provide decision makers with options as well as an understanding of how the Proposed Action may affect various resources. Alternatives considered must be reasonable and meet the purpose of and need for the Proposed Action. The selected alternative will take into account technical, economic, and political feasibility; environmental and social issues; and the ability to meet USAG FWA and USARAK mission objectives. This analysis will include a discussion of avoiding and minimizing environmental harm from the alternative selected. The USAG FWA Garrison Commander will decide which alternative to implement. Concurrence from the Regional Director, Installation Management Command Pacific, also will be obtained on the selected alternative.

The following reasonable alternatives, which will be presented to the USAG FWA Garrison Commander for evaluation, are described in detail in Chapter 2.0, *Description of the Proposed Action and Alternatives*:

- Alternative 1: Demolition of Hangars 2 and 3
- Alternative 2: No Action (retention of the status quo, which is to continue to maintain Hangars 2 and 3 in their unoccupied state and perform minimal maintenance activities)

1.5 National Historic Preservation Act Consultation

Section 106 of the NHPA requires that federal agencies take into account any effect or potential effect of their undertakings[9] on historic properties listed in or eligible for listing in the National Register of Historic Places (National Register).[10]

As subsequent sections of this document illustrate, the USAG FWA has exhibited a higher standard of planning and consideration regarding this proposed undertaking associated with Hangars 2 and 3 and the Ladd Field NHL, thus meeting the Section 110 responsibilities regarding NHLs. Most recently, the USAG FWA conducted multiple studies of the hangars and, more notably, analyzed the potential impacts to historic resources through the NEPA EIS process, ensuring that the Army is taking the requisite "hard look" at the consequences of its Proposed Action. The information developed and obtained through both the Section 106 and NEPA process will allow the Army to plan and make an informed decision on the disposition of the hangars. Over the last 11 years, the USAG FWA contracted three separate studies to ascertain in detail the structural needs and the costs to rehabilitate Hangars 2 and 3 (see Section 2.3.3.2). In addition, the Army developed a detailed rehabilitation cost estimate to support reuse of the facility (see Section 2.3.1). The Army conducted three studies and developed a specific cost estimate to illustrate its intent to plan thoughtfully for minimal harm to the Ladd Field NHL. These studies and cost estimates then informed the development of alternatives for the EIS, which ultimately informs the final decision to be made.

Hangars 2 and 3 are contributing structures to the Ladd Field NHL, as well as the Cold War Historic District at Fort Wainwright, which was determined to be eligible for the National Register in 2010. Because the Proposed Action is considered an undertaking, the Army must comply with Section 106 of the NHPA. In addition to the NEPA process, the Army also is concurrently engaging in the Section 106 consultation process. The USAG FWA has determined that both the Proposed Action and the No Action Alternative would adversely affect the hangars, and in so doing, both the Ladd Field NHL and the Cold War Historic District as a whole. As a result, the Army is pursuing a Memorandum of Agreement (MOA) pursuant to 36 CFR §800.6(2)(c) to mitigate any adverse effect.

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[9] The 1992 amendments to NHPA specifically defined the term undertaking as "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including A) those carried out by or on behalf of the agency; B) those carried out with Federal financial assistance; C) those requiring a Federal permit, license, or approval; and D) those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency" (16 U.S.C. §470w(7)).

[10] The National Register, established under the NHPA of 1966, is an official list of significant state, local, and national historic properties.

While actions that the Army conducts in compliance with NEPA and Section 106 are separate, the individual outcomes of these processes directly impact and inform one another. Through the NEPA process, alternatives for the Proposed Action are developed and analyzed for potential impacts to resource areas, including cultural resources. In the Section 106 process, the Army presents the alternatives, along with the potential impacts to historic resources, to the consulting parties.[11] The Army, in coordination with the consulting parties, then develops and sets forth in the MOA ways to avoid, minimize, and/or mitigate the potential adverse effects of the Proposed Action on cultural resources. Within the MOA, stipulations are developed for each alternative being considered. These stipulations are then incorporated into the EIS as measures under each alternative for mitigating adverse effects. They are included in the analysis and presented to the decision maker. The MOA for this Proposed Action is included as an appendix (Appendix A). The mitigation measures identified in the MOA will be incorporated into the ROD, helping to inform the USAG FWA Garrison Commander when selecting an alternative to implement. Once a final decision is made on which alternative to implement, the Army will implement its decision in accordance with the stipulations set forth in the MOA.

As part of the Section 106 consultation process and in accordance with 36 CFR §800.3, the USAG FWA notified the Alaska State Historic Preservation Office (SHPO) of the undertaking affecting Hangars 2 and 3 in October 2011. In November 2011, the USAG FWA invited nine groups to participate in the Section 106 process as consulting parties. Those invited were the Advisory Council on Historic Preservation (ACHP), the Alaska SHPO, the NPS, Tanana Yukon Historical Society (TYHS), Bureau of Land Management, Fairbanks North Star Borough (FNSB) Historic Preservation Commission, National Trust for Historic Preservation, Alaska Aviation Heritage Museum, and the Alaska Association for Historic Preservation. The Alaska SHPO, the NPS, and the ACHP responded, agreeing to participate as consulting parties. The USAG FWA also received notice from the National Trust for Historic Preservation acknowledging receipt of the invitation and saying it would follow up with additional correspondence indicating whether or not it would participate as a consulting party; however, no further correspondence was received. No other correspondences from other agencies have been received to date. Although no written response was received from TYHS or the FNSB Historic Preservation Commission, they actively participate as consulting parties regarding this undertaking.

[11] Consulting parties are those that have consultative roles in the Section 106 process and include SHPO, Indian tribes, representatives of local governments, individuals or organizations with a demonstrated interest in the undertaking, and members of the public (see 36 CFR §800.2).

The first Section 106 consultation meeting was held in December 2011 to inform participating agencies of the project. The following six agencies attended the meeting: the Alaska SHPO, the NPS, the TYHS, Bureau of Land Management, the FNSB Historic Preservation Commission, and the ACHP (via teleconference). The USAG FWA subsequently met with the consulting parties six times in 2012 (April 24, May 21, June 12, July 2, October 26, and November 27) and twice in 2013 (January 22 and March 5) to discuss the potential adverse effects of the undertaking; ways to avoid, minimize, and mitigate the potential adverse effects; and the development of the MOA for the project. Additional Section 106 consultation meetings will be held as necessary after the end of the public comment period for the Draft EIS.

Information gathered during the Section 106 process regarding adverse effects of the alternatives and ways to avoid, minimize, and mitigate these adverse effects was then incorporated into this Draft EIS. For a discussion on the adverse effects and mitigation measures to minimize the adverse effects, see Section 3.3.2.

1.6 Public Involvement

Public participation opportunities for this Draft EIS and decision making on the Proposed Action are guided by 32 CFR §651.45. In general, an EIS process begins with the publication of a Notice of Intent (NOI) to prepare an EIS in the *Federal Register*, after which the scoping process begins. Scoping is the period when the public, agencies, organizations, and tribes identify important issues they believe the Army needs to address in the EIS. A Draft EIS is then prepared and filed with the U.S. Environmental Protection Agency (USEPA), and the Army publishes a Notice of Availability (NOA) in the *Federal Register* and in newspapers in communities that the Proposed Action could affect. A public comment period lasting at least 45 days begins on the date the USEPA publishes its notice of receipt of the Draft EIS in the *Federal Register*. During the comment period, but after at least 15 days following publication of the NOA, a public meeting, or series of meetings, is held to provide the public, organizations, agencies, and tribes an opportunity to present comments and issues of concern. (For this Draft EIS, the comment period will be 45 days, and the public meeting will be conducted as an open house.) A Final EIS is then prepared that addresses all comments received on the Draft EIS. The Final EIS is filed with the USEPA and made available to the public by publishing a NOA in the *Federal Register* and local newspapers. A final decision on the Proposed Action, which is documented in a ROD, may be made 30 days following the Final EIS NOA publication. The ROD is a public document that states the decision, the alternatives, and factors considered, as well as any mitigation measures that will be adopted. A NOA for the ROD is published in the *Federal Register* and in local newspapers.

Throughout this process, the public may obtain information on the status and progress of the Proposed Action and the EIS through the USAG FWA NEPA website at: www.wainwright.army.mil/env/NEPA/Current.html.

1.6.1 Notice of Intent

The Army published a NOI to prepare an EIS in the *Federal Register* on November 16, 2011 (76 Federal Register 70978) (see Appendix B). Publication of the NOI began a 63-day scoping period from November 16, 2011, to January 17, 2012. The Army also published an Open House Public Meeting notice in the *Fairbanks Daily News-Miner* on November 11 and 16, 2011, and on December 4, 7, 11, and 14, 2011. The notice indicated the Army's intent to prepare an EIS, conduct Section 106 consultation, and hold a public scoping meeting. The Army used the scoping period to determine the resource areas to be addressed in the EIS and to identify significant issues related to the Proposed Action.

1.6.2 Public Scoping

As part of the scoping process, the USAG FWA held a public scoping meeting on December 14, 2011. The scoping meeting was held at the Noel Wien Public Library in Fairbanks, Alaska, and 19 people attended. A court reporter was available to record public comments; however, no comments were given. Written comments received during the comment period included the following potential alternatives: donating the hangars to the Tanana Valley State Fair Association, converting one or both hangars into a roller derby rink for use by the local roller derby leagues, and moving both hangars to alternate locations in Fairbanks so that they could be used by the community as a museum or to support other activities. These alternatives were considered and are addressed in Chapter 2.0. Another comment indicated that alternatives for the Proposed Action need to take into account the military mission of Fort Wainwright. As described in Chapter 2.0, as part of the screening criteria for alternatives, the mission of Fort Wainwright is taken into consideration in determining which alternatives to carry forward for analysis. All of the public scoping comments are provided in Appendix C.

1.6.3 Cooperating Agencies

NEPA mandates that federal agencies responsible for preparing NEPA analyses and documentation must do so "in cooperation with state and local governments and other concerned public and private organizations" and other agencies with jurisdiction by law or special expertise (42 U.S.C. §§ 4331[a] and 4332[c]). The CEQ regulations addressing cooperating agencies status (40 CFR §1501.6 and

§1508.5) allow federal agencies (as lead agencies) to invite tribal, state, and local governments, as well as other federal agencies, to serve as cooperating agencies in the preparation of an EIS.

Because the Army's Proposed Action would involve potential adverse impacts to the Ladd Field NHL, in October 2011, the USAG FWA invited the NPS, the ACHP, and the Alaska SHPO to become cooperating agencies for this EIS. Both the NPS and the ACHP declined the invitation, and no response was received from the Alaska SHPO (see Appendix D); however, all three agencies will continue to participate in the NEPA process and are consulting parties in the NHPA Section 106 process (see Section 1.5).

1.6.4 Interagency Coordination

Throughout the development of this Draft EIS, the Army coordinated with various federal, state, and local agencies about its proposal for the demolition of Hangars 2 and 3. Involvement activities included scoping and distribution and review of the document. The USAG FWA sent scoping invitation letters to the following agency and organization representatives (see Appendix D for all agency correspondence letters):

- Advisory Council on Historic Preservation
- Alaska Department of Environmental Conservation
- Alaska Department of Fish and Game
- Alaska Department of Transportation and Public Facilities
- Alaska State Historic Preservation Office
- Bureau of Land Management
- Bureau of Land Management, Alaska Fire Service
- Fairbanks North Star Borough
- Fairbanks North Star Borough Historic Preservation Commission
- Mayor of Fairbanks North Star Borough
- Mayor of the City of Fairbanks
- National Park Service
- National Trust for Historic Preservation
- Tanana Yukon Historical Society
- United States Environmental Protection Agency
- United States Fish and Wildlife Service

At the initiation of the EIS process, the Army held an agency scoping meeting on December 15, 2011, to inform agencies of the Proposed Action and to solicit input on the potential alternatives and areas of concern. Agency representatives provided a number of comments that helped the Army focus the EIS analysis on the environmental issues of importance. The major theme of the comments concerned the hangars' historical significance and context, the desire to preserve that significance, and accessibility to the public for appreciation (see Appendix D). Additional comments included concerns about hazardous materials and air quality impacts. The historical significance and context of the hangars is addressed in Section 3.3, *Cultural Resources,* and is an important factor in the Section 106 process and the development of the MOA with the Section 106 consulting parties. Issues regarding air quality and hazardous materials are addressed in Section 3.2, *Air Quality,* and Section 3.4, *Hazardous Materials/Hazardous Waste*, respectively.

In support of the release and public review of this Draft EIS, the Army sent letters to interested agency representatives, as indicated in Chapter 5.0, announcing the release of this Draft EIS and inviting review. An agency meeting will be held in Fairbanks, Alaska, to review the Army's Proposed Action and findings of the Draft EIS and to collect comments. Comments submitted will be thoroughly considered and incorporated into the Final EIS, where appropriate. Both the comments submitted and responses to those comments will be provided in Appendix E of the Final EIS.

1.6.5 Government-to-Government Consultation

The USAG FWA consulted with Alaska Native tribes in accordance with the requirements of Department of Defense (DoD) Instruction 4710.02, *DoD Interactions with Federally-recognized Tribes* (DoD, 2006); Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments;* the *DoD American Indian and Alaska Native Policy* (DoD, 1998) and *Alaska Implementation Guidance* (DoD, 2001); and the Department of the Army *American Indian and Alaska Native Policy* (Army, 2012b). Six federally recognized tribes were sent letters notifying them of the Army's intent to prepare an EIS and informing them about the public scoping meeting times and locations (see Appendix D). The tribes were offered the opportunity to enter into government-to-government consultation and to become consulting parties to the NHPA Section 106 process. The letters were followed up with emails, telephone calls, and faxes, respective of the tribes' wishes for mode of communication. The Army received responses from four tribes (Village of Dot Lake, Healy Lake Village, Native Village of Tanacross, and Native Village of Tetlin), indicating they would not require consultation. The remaining two tribes (Nenana Native Association and Northway Village) did not provide formal responses. The Army followed up with these two tribes via email and telephone calls to discuss the undertaking, and it

was understood by the USAG FWA that although a formal response was not issued, consultation would not be required.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This chapter explores and evaluates all possible alternatives developed in accordance with the purpose and need for the Proposed Action described in Section 1.2, and the objectives described below in Section 2.3. The purpose and need sets forth a rational context in which to analyze the viability of potential alternatives. The United States (U.S.) Department of the Army (Army) considered a wide range of potential alternatives, eventually narrowing the list to those considered reasonable and legally viable for the disposition of Hangars 2 and 3 on Fort Wainwright. This chapter presents the screening process used to eliminate several non-viable alternatives from detailed consideration and to identify action alternative(s) carried forward for full analysis in the Draft Environmental Impact Statement (EIS) and Section 106 process. For alternatives eliminated from detailed study, the analysis used to eliminate them is presented.

One reasonable action alternative was identified through the screening process: demolition of Hangars 2 and 3. This Draft EIS also carries forward the alternative of no action, also known as maintaining the status quo. The Army's preferred alternative is identified in Section 2.5.

2.2 Proposed Action

The Proposed Action is to determine and implement a disposition for Hangars 2 and 3 and supporting infrastructure[12] located at Fort Wainwright, Alaska.

2.3 Screening Criteria, Viability Analysis and Comparison of Potential Alternatives

The U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA) developed a screening process to evaluate reasonable alternatives and determine their ability to satisfy the purpose and need of the Proposed Action. The following sections discuss the screening criteria and viability analysis used to arrive at a full range of reasonable alternatives to fulfill the purpose and need. The screening criteria

[12] The supporting infrastructure includes, but is not limited to, concrete foundations, the small, empty, flammable liquids storage facility located between Hangars 2 and 3, paved parking areas, utilities (i.e., service utilidors, manholes, vents, utility poles, head bolt heaters, electrical power lines, and communications), and the security fence line.

and viability analysis for the alternatives are based on the following objectives of the purpose and need to determine the disposition of Hangars 2 and 3:

- Resolve life, health and safety concerns
- Address fiscal concerns
- Consider land use requirements
- Ensure statutory compliance

The No Action Alternative was not included in the viability analysis because it is an alternative that must be considered in accordance with Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] §1502.14) and carried through for full analysis in the Draft EIS.

2.3.1 Screening Criteria

The following screening criteria are based upon the objectives outlined above and the purpose and need discussed in Section 1.2.

- **Screening Criterion 1:** The action must directly address the disposition of Hangars 2 and 3.
- **Screening Criterion 2:** The action must be compatible with the current and future military mission at Fort Wainwright , including:
  - The USAG FWA's mission for airfield and support facilities that considers acceptable land use designations, anti-terrorism/force protection (AT/FP) measures, availability of airfield buildable space, effective use of maintenance funds, and energy conservation and sustainability.
  - The U.S. Army Alaska (USARAK) mission that supports rapid deployment needs, training requirements, and the ability to accommodate future mission changes.
- **Screening Criterion 3:** The action must not be prohibitively expensive. This means a viable disposition option is one where the amount of money required to implement it would be supported by the Army's funding decision process or non-federal sources. The general guidance for rehabilitation costs is based on the *Reuse Study of Hangars 2 and 3 Fort Wainwright, Alaska* (Design Alaska and JCA, 2012), as well as estimates resulting from a 2012 U.S. Army Corps of Engineers (USACE) Alaska District Planning Charrette and Form DD1391

development[13] evaluating the stationing requirements to support unmanned aircraft systems (UASs) in Alaska. The necessary facility upgrades are those that are described in the 2008 *Condition Assessment and Rehabilitation Plans, Hangars 2 and 3, Ladd Field National Historic Landmark, Fort Wainwright, Alaska* (The Louis Berger Group [LBG], 2008) and summarized in Section 2.3.3.2 under the subheading *Discussion of Screening Criterion 3*. The general guidance for demolition costs is based on cost estimates resulting from the development of Form DD1391 for the demolition of Hangars 2 and 3.

- **Screening Criterion 4:** The action must have a reasonably foreseeable funding source, or a mechanism for obtaining applicable and timely funding, to pay for life, health, and safety upgrades or demolition actions.

2.3.2 Potential Action Alternatives Considered

The following potential alternatives were examined in the viability analysis:

1. Demolition of either Hangar 2 or Hangar 3 or both and conversion of the demolition footprint along the airfield to concrete apron
2. Rehabilitation of either Hangar 2 or Hangar 3 or both to support the following uses:
   a. UAS maintenance hangar
   b. Aviation combined arms tactical trainer (AVCATT) simulator training
   c. Fixed simulator training
   d. Physical fitness center/gymnasium
   e. Arctic readiness center/fieldhouse
   f. General purpose warm storage
   g. Youth center
   h. Museum
   i. Roller rink
3. Removal and reconstruction of either Hangar 2 or Hangar 3 or both on Fort Wainwright to support the following uses:
   a. UAS maintenance hangar

[13] A planning charrette is a process that includes the preparation, planning, onsite workshop and completion of Form DD1391 for a construction project. The charrette brings together an interdisciplinary team to reach consensus on the project site, scope, and cost estimate that is then used in preparation of Form DD 1391. Form DD 1391 is a document used by the DoD to submit requirements and justification to Congress in support of funding requests for military construction and certain operational and maintenance projects.

   b. AVCATT simulator training
   c. Fixed simulator training
   d. Physical fitness center/gymnasium
   e. Arctic readiness center/fieldhouse
   f. General purpose warm storage
   g. Youth center
   h. Museum
   i. Roller rink
4. Closed layaway of either Hangar 2 or Hangar 3 or both (i.e., hangars would be rehabilitated to ensure their long-term structural integrity, but they would remain permanently closed/vacant)
5. Transfer of ownership of either Hangar 2 or Hangar 3 or both to the following non-Army entities:
   a. Federal
   b. State
   c. Private/commercial

2.3.3 Viability Analysis

The results of the viability analysis are summarized in Table 2-1 and discussed following the tabular summary. In order for an alternative to be considered reasonable for further analysis, it must meet all four screening criteria listed in Section 2.3.1.

Table 2-1: Results of Viability Analysis

Potential Alternative	Screening Criteria				Carried Forward for Analysis?
	1	2	3	4	
Demolition of Either Hangar 2 or Hangar 3 or Both (see Section 2.3.3.1)					
Demolition of both hangars and creation of concrete apron within hangar footprints	●	●	●	●	YES
Demolition of one hangar and creation of concrete apron within hangar footprint and retention of remaining hangar using current management methods (i.e., maintain the status quo)				●	NO
Rehabilitation of Either Hangar 2 or Hangar 3 or Both to Support Identified Uses (see Section 2.3.3.2)					
UAS maintenance hangar, AVCATT simulator training, fixed simulator training, and general purpose warm storage	●	●			NO
Physical fitness center/gymnasium, arctic readiness center/fieldhouse, youth center, museum, and roller rink	●				NO
Removal and Reconstruction of Either Hangar 2 or Hangar 3 or Both on Fort Wainwright (see Section 2.3.3.3)					
UAS maintenance hangar, AVCATT simulator training, fixed simulator training, physical fitness center/gymnasium, arctic readiness center/fieldhouse, general purpose warm storage, youth center, and museum	●	●			NO
Roller rink	●				NO
Closed Layaway of Either Hangar 2 or Hangar 3 or Both (see Section 2.3.3.4)					
The hangar(s) would be rehabilitated to ensure long-term structural integrity but would remain permanently closed and vacant.	●				NO
Transfer of Ownership of Either Hangar 2 or Hangar 3 or Both to Non-Army Entities (see Section 2.3.3.5)					
Federal, state or private/commercial	●	●*			NO

Notes: AVCATT – aviation combined arms tactical trainer, UAS – unmanned aircraft system

● Fully meets screening criteria.

* Only if reused in manner compatible with the military mission at Fort Wainwright.

2.3.3.1 Demolition of Either Hangar 2 or Hangar 3 or Both

Under this alternative, demolition of either Hangar 2 or Hangar 3 or both would occur and the remaining footprint of the building would be converted to concrete apron space. Two scenarios of this option are discussed below.

Demolition of One Hangar and Retention of the Other

The USAG FWA considered demolishing one hangar and retaining the remaining hangar. The remaining hangar would continue to be minimally maintained as described under the No Action Alternative (see Section 2.4.2).

Discussion of Screening Criterion 1 (Hangar Disposition)

The option of demolishing one hangar and retaining the other does not meet the first screening criterion because it only directly addresses the disposition of one of the buildings. Maintaining the status quo for the remaining hangar avoids identifying a disposition for that hangar. The hangar would continue to serve no active military function, would continue to remain vacant, and would still be considered unsafe for occupancy. Currently, no rehabilitation efforts are planned for the remaining hangar, and its structural integrity would continue to deteriorate, eventually resulting in the building's structural failure.

Overall, the option of demolishing one hangar and allowing the other hangar to remain does not meet the purpose and need defined in Chapter 1.0.

Discussion of Screening Criterion 2 (Mission Compatibility)

Allowing one hangar to remain vacant would not be compatible with the current or future military mission at Fort Wainwright because it would occupy valuable real property space on the active airfield without serving an active function.

Discussion of Screening Criterion 3 (Cost)

The cost associated with demolition of one hangar is approximately $3 million. This amount is not considered prohibitively expensive because it is currently eligible for Army funding; however, continued minimal maintenance of a vacant hangar will require that the USAG FWA spend approximately $350,000 per hangar each year to achieve minimum heating, electrical, and water requirements necessary to prevent building collapse and ensure adequate response in case of an emergency. Evaluated within the context of funding for base operations, the USAG FWA considers spending approximately $350,000 per hangar annually on a facility that has no current or future use to

be prohibitively expensive. In addition, the cost for demolition is reasonable when compared to new construction or rehabilitation costs.

Discussion of Screening Criterion 4 (Funding Source)

Military construction (MILCON) funding to support demolition in accordance with Army Regulation (AR) 420-1 is included in the Fiscal Year Defense Program 2013–2019, allowing for timely access (by fiscal year [FY] 14) to an applicable funding mechanism to support this action.

Conclusion

In summary, demolishing one hangar and retaining the other does not directly address the disposition of Hangars 2 and 3. It would not support the current and future military mission of Fort Wainwright. Demolition has a reasonable cost figure associated with it, when compared to new construction or rehabilitation costs, and is eligible for funding under the MILCON program in FY 14; however, the Army funding approval entities cannot support annual maintenance costs of approximately $350,000 per hangar to ensure the structural stability of a building that no longer has an identified use and is condemned. Therefore, this option is not carried forward in this Draft EIS as a reasonable action alternative.

Demolition of Hangars 2 and 3

Under this alternative, the USAG FWA would demolish both hangars and their supporting infrastructure.

Discussion of Screening Criterion 1 (Hangar Disposition)

Demolishing both hangars meets the first screening criterion because it directly addresses the disposition of both hangars.

Discussion of Screening Criterion 2 (Mission Compatibility)

By creating concrete apron space, both the USAG FWA and USARAK missions are met because the area's conversion to concrete is compatible with existing airfield land use designations and supports existing and future military training needs.

Discussion of Screening Criterion 3 (Cost)

The cost associated with demolition of Hangars 2 and 3 is approximately $6.3 million (Army, 2012c). This amount is not considered prohibitively expensive because it is currently considered eligible for Army funding pending National Environmental Policy Act (NEPA) analysis. In addition, the cost for demolition is reasonable when compared to new construction or rehabilitation costs.

Discussion of Screening Criterion 4 (Funding Source)

MILCON funding to support demolition in accordance with AR 420-1 has been identified in the Fiscal Year Defense Program 2013–2019, allowing for timely access (by FY 14) to an applicable funding mechanism to support this action.

Conclusion

In summary, demolition of the hangars directly addresses the disposition of Hangars 2 and 3, supports the current and future military mission on Fort Wainwright, has a reasonable cost associated with it, and is eligible for funding under the MILCON program in FY 14. This alternative is carried forward in this Draft EIS as a reasonable action alternative. A more detailed description of this alternative is provided in Section 2.4.1.

2.3.3.2 Rehabilitation of Either Hangar 2 or Hangar 3 or Both To Support Identified Uses

Under this alternative, rehabilitation of either Hangar 2 or Hangar 3 or both to support a variety of reuses would occur. The reuses identified during internal and external scoping or developed by the Army as part of mitigation identified in the *Programmatic Agreement Among the United States Department of the Army, the Alaska State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Aviation Stationing at Fort Wainwright, Alaska,* are:[14]

- UAS maintenance hangar
- AVCATT[15] or fixed simulator training
- Physical fitness center/gymnasium
- Arctic readiness center/fieldhouse
- General purpose warm storage
- Youth center
- Museum
- Roller rink

[14] Bullets 2 through 4 were identified in the Reuse Study of Hangars 2 and 3 Fort Wainwright, Alaska Final Report, April 2012.

[15] AVCATT is a mobile, transportable, multi-station virtual simulation device designed to support unit collective and combined arms training (Army, 2012d).

Discussion of Screening Criterion 1 (Hangar Disposition)

The option of rehabilitating either Hangar 2 or Hangar 3 or both for reuse, regardless of reuse type, meets the first screening criterion because it directly addresses the disposition of the buildings.

Discussion of Screening Criterion 2 (Mission Compatibility)

The reuse options of the UAS maintenance hangar, the simulator training facility, and warm storage are compatible with the second screening criteria for their potential to meet current and future military missions at Fort Wainwright. While the physical fitness and arctic readiness centers would be compatible with the USARAK mission, these reuse options do not fully support USAG FWA's mission. These options are not an appropriate use of valuable real property space located on the airfield, and they would ultimately be an ineffective use of facility planning and maintenance funding since they do not have facility codes recognized as being compatible with active airfield uses within the Army's Facility Management Program. (Compatible facility codes are defined as those that support airfield utilization: facilities and shops for maintenance and repair of rotary and fixed wing aircraft.) Compatibility with existing airfield land use designations necessitates the reuse option to be one that does not create unauthorized access to the active runway and surrounding area. The remaining reuse options of the youth center, museum, and roller rink would likely result in a high volume of non-Army use that is not authorized to occur on an active military airfield. These types of uses are not compatible with airfield security requirements that prevent non-military entities from accessing the area. Furthermore, the youth center, museum, and roller rink do not support the current USARAK mission of rapid deployment, military training requirements, or assistance of future mission changes.

Discussion of Screening Criterion 3 (Cost)

Beginning in 2001, the USAG FWA contracted for several reports that produced reuse options and rehabilitation cost estimates for Hangars 2 and 3 (ECI/Hyer, Inc., 2003; LBG, 2008; Design Alaska and JCA, 2012). The reports, each conducted by third-party consultants, conclusively established that a considerable amount of funding would be required to rehabilitate both hangars to meet basic life, health, and safety building codes. In addition, in July 2012, a MILCON Charrette was held by the USACE Alaska District to develop Form DD1391s and a cost estimate for a project that represented a practical and mission essential reuse alternative for one of the hangars—rehabilitation to support proposed UAS operations at Fort Wainwright. Table 2-2 summarizes the cost estimates associated with rehabilitation of Hangars 2 and 3. Overall, the facilities have continued to deteriorate over time, thereby raising the estimated costs of rehabilitation in addition to other factors as explained below.

Table 2-2: Summary of Hangar Reports and Cost to Rehabilitate

Report	Year	Per Hangar Cost to Rehabilitate (cost in millions)
Condition Assessment/Economic Analysis of Fort Wainwright Hangars	2003	$7.5
Condition Assessment and Rehabilitation Plans, Hangars 2 and 3	2008	$22
Reuse Study of Hangars 2 and 3	2012	$32 to $38
USACE Alaska District Planning Charrette	2012	$60
Adjusted Reuse Study of Hangars 2 and 3 Costs based on USACE Alaska District Planning Charrette	2012	$48 to $55

Note: USACE – U.S. Army Corps of Engineers

2003 Condition Assessment/Economic Analysis

The first of the economic analysis reports was prepared in response to a Memorandum of Agreement (MOA) that was signed by the Army in 2001 with the Alaska State Historic Preservation Office (SHPO), the National Park Service (NPS), the Advisory Council on Historic Preservation, and other consulting parties regarding a series for proposed demolitions of historic properties on Fort Wainwright, including Hangars 2 and 3. The MOA stipulated that a report, including an economic analysis, be developed prior to the Army making a final decision on demolition of Hangars 2 and 3. The report titled *Condition Assessment/Economic Analysis of Fort Wainwright Hangars* was completed by ECI/Hyer, Inc. in 2003. This report identified a rehabilitation cost of $7.5 million per hangar. Soon after the completion of ECI/Hyer, Inc. (2003), the Alaska SHPO terminated the MOA, stating termination was in the best interest of all the consulting parties and would better preserve the landmark. This meant that any future proposal for demolition of Hangars 2 and 3 would require consultation with the Alaska SHPO and other consulting parties, and would effectively start the Section 106 process over again.

2008 Condition Assessment and Rehabilitation Plans

In 2005, the Army began developing an EIS for the stationing of an Aviation Task Force at Fort Wainwright. Originally, demolition of Hangars 2 and 3 was part of the undertaking, and Section 106 consultation on the demolition of the hangars was initiated. In support of this consultation, a second report on the cost of rehabilitating the hangars was completed. The *Condition Assessment and Rehabilitation Plans, Hangars 2 and 3* (LBG, 2008) identified a rehabilitation cost of $22 million per hangar. While the 2005 EIS NEPA process was still in its scoping period, demolition of Hangars 2 and

3 was removed as part of both the Proposed Action and the Section 106 consultation. This occurred because it was determined that Hangars 2 and 3 did not require demolition in order to support stationing of the Aviation Task Force and construction of the unit's required facilities.

LBG (2008) describes in full detail the basic rehabilitation needs for the hangars, as summarized in Table 2-3. Because both hangars are contributing structures within the Ladd Field National Historic Landmark (Ladd Field NHL), all proposed work would need to be respectful of the historic character of the buildings, both in terms of the construction materials and finishes. Rehabilitating Hangars 2 and 3 would need to follow, as closely as possible, the guidelines in the *Secretary of the Interior's Standards for Rehabilitation*. The various reuse studies incorporated these standards into their estimates, and where possible, existing original and historic materials would be retained and preserved. Under all reuse options, the Army would treat interior spaces with contemporary materials; repair structural problems; rehabilitate the exterior envelope of the buildings; replace heating, water supply, and electrical systems to meet contemporary requirements and codes; and complete additional work to ensure potential continued use of these buildings.

Table 2-3: Elements of Basic Rehabilitation for Hangars 2 and 3

Category	Rehabilitation Element
Safety	• Exit stairs: Install code-compliant fire stairs at either end of building, each quadrant.
	• Draft curtains[a]: Install non-combustible draft curtains between wood trusses.
	• Structural Repairs: Repair damaged and missing structural members, trusses, purlins, tension rods, columns, inter-column bracing, and buttress web members, including seismic upgrades to structural system and foundation treatment. Provide safe access ladders to catwalks.
	• Fire walls: Repair 2-hour rated fire walls as required between hangar bays and side bays and install rated attic louvers into side bays. Install rated doors and frames in fire separation walls. Install code-compliant finish hardware on fire and exit doors.
	• Fire hydrants: New fire hydrants required with proper capacities to serve the hangars.
	• Sprinkler system: Extend sprinkler system into attics over side bays. Replace existing deluge type hangar bay sprinkler system. Upgrade or replace fire pumps in Building 2011, which serve both hangars.
	• Fire alarm system: Upgrade or replace existing system.
	• Exit and emergency lighting: Replace with code-compliant systems.
Building code	• Restrooms: Repair damaged ceramic tile floors, walls, and equipment. Provide one accessible restroom for men and one for women on main floor, as applicable to alternative option.

Category	Rehabilitation Element
	• HVAC system: Install new HVAC systems in side bays and hangar bays with direct digital control system, as applicable to each alternative.
	• Electrical system: Replace electrical main panel board and distribution system.
	• Lighting system: Upgrade or replace lighting system in hangar bays and side bays, including exterior lights, as applicable to alternative option.
Energy conservation	• Roofing: Install new roofing assembly over hangar bays, with new ethylene-propylene-diene-monomer (or thermoplastic polyolefin/ polyvinyl chloride roofing assembly above, and with new insulation and vapor retarder below. (Obtain International Building Code Section 3407 mitigated exception for lack of Class A/B fire rating.)
	• Building insulation: Replace all insulation in attics over side bays.
	• Hangar doors: Replace with energy-efficient doors, in appropriate door configuration for reuse alternative.
General preservation and maintenance	• Roofing: Replace roof assemblies over side bays with associated eave flashings. Replace roofing and fascias on entry canopies. Reconstruct original overhangs at hangar doors with new roofing materials and structure to protect hangar doors from weather and provide access to exterior lights and communication equipment.
	• Exterior man doors[b]: Replace all deteriorated doors/ frames. Provide at grade access to building interior.
	• Signage: Restore building identification numbers above the hangar doors.
	• Parking: Relocate on-grade parking to meet AT/FP requirements for standoff distances from hangars.
	• Windows: Replace all exterior windows with energy-efficient units in configurations appropriate to original openings.
	• Floor slabs: Provide new floor drain system via new topping slab and drainage piping. Repair cracked concrete floor slabs in side bay areas, as applicable to alternative option.
	• Utilities systems: Cap abandoned utilities and fill in unused service pits. Upgrade or replace aged existing domestic water, compressed air, waste, and vent piping, and plumbing fixtures, as applicable alternative option.
	• Communications systems: Relocate rack-mounted telecommunications equipment into secure, locked environments containing appropriate fire ratings.
	• Exterior walls: Repair exterior walls to provide continuous vapor barriers, and to restore their historic appearance. Include repairs to gypsum board in side bays, especially at buttress wraps, and repairs to vapor retarder and insulation at exterior walls.
	• Hazardous materials: Remediate remaining lead-based paint, asbestos, or other hazardous materials.

Notes: AT/FP – anti-terrorism/force protection; HVAC – heating, ventilation, and air conditioning

[a] Draft curtains are a noncombustible barrier used to contain flame, smoke, and fumes.

[b] Man doors are hinged doors that allow access into a building by turning a doorknob.

2012 Reuse Study

In 2012, a study, *Reuse Study of Hangars 2 and 3 Fort Wainwright, Alaska* (Design Alaska and JCA, 2012) was conducted as mitigation for the stationing of the Aviation Task Force at Fort Wainwright. As part of this Aviation Stationing project, the helicopter maintenance functions of Hangars 2 and 3 were to be relocated to new facilities and, as a result, would leave the hangars without an assigned use or function. The study's purpose was to identify potential reuses for the hangars and to provide basic rehabilitation cost estimates for each reuse. The reuse options identified (simulator training, physical fitness center, and warm storage) were based on types of facilities that had real property deficits at Fort Wainwright as documented in USAG FWA's Real Property Master Plan, Installation Status Report, and Real Property Planning and Analysis System (RPLANS). Potential reuse costs ranged from $32 million to $38 million per hangar depending on reuse type. The USAG FWA began its development of alternatives for the disposition of Hangars 2 and 3 with the rehabilitation estimates provided in the 2012 Reuse Study.

Given the increasingly high cost associated with rehabilitation, as identified in the 2012 Reuse Study, the USAG FWA attempted to identify cost saving measures by accepting the NPS's suggestion to have one of its subject matter experts survey the hangars to identify cost reduction solutions associated with rehabilitating a historic structure (NPS, 2012b; Crosby, 2012). As a result of consultation with the NPS and the Alaska SHPO, the USAG FWA was provided some flexibility in the application of the Secretary of the Interior's standards for proposed rehabilitation methods. The USAG FWA subject matter experts reviewed the provided suggestions and determined that many were already calculated into the 2012 Reuse Study costs; however, one suggestion—construction of an internal steel superstructure—was unique. (The USACE Alaska District employed this same approach during the UAS Planning Charrette, based on the NPS recommendation, as explained in the following paragraphs.) Additionally, during the review, the 2012 Reuse Study was found to be missing the required USACE Alaska District standard overhead or Design-Build contracting costs and did not address some critical structural improvements. This additional information led to the determination that rehabilitation costs were likely to be even higher than identified in the 2012 Reuse Study.

2012 USACE Alaska District Charrette

In July 2012, a MILCON Charrette was held by the USACE Alaska District to develop Form DD1391 construction project descriptions for a project that represented a practical and mission essential reuse option for one of the hangars—rehabilitation to support UAS operations. The USACE Alaska District planning process used the 2012 Reuse Study base rehabilitation costs (i.e., $38 million per hangar) and

added $4 million in costs that were specific to the UAS reuse, as well as the following four additional costs that had not yet been accounted for in the previous hangar studies:

- $9.5 million in additional structural and foundational repairs
- 5 percent standard contingency fee
- 6.5 percent USACE Alaska District overhead
- 4 percent Design-Build cost

All of these costs escalated the total rehabilitation cost to support UAS operations to $60 million per hangar.

Because of all of the unknown conditions associated with rehabilitating a 70-year-old, deteriorated building, the same additional costs ($9.5 million in additional structural and foundational repairs, 5 percent standard contingency fee, 6.5 percent USACE overhead, and 4 percent Design-Build cost) can be applied to the other reuse options, which results in a range of costs from $48 million to $55 million per hangar (Table 2-4). At the same planning charrette, a separate Form DD1391 was developed for construction of a new UAS maintenance hangar of comparable size at Fort Wainwright with identical project specific reuse and overhead costs resulting in a final cost estimate of $38 million (Army, 2012e). To complete the comparison, the cost to construct a new warm storage facility at Fort Wainwright would be approximately $36 million.

Table 2-4: Summary of Original and Revised Estimated Costs of Hangar Rehabilitation for Various Reuse Options

Potential Reuse Option of Either Hangar 2 or Hangar 3	Original Estimated Cost as Outlined in 2012 Reuse Study[a]	Revised Estimated Cost – Incorporates Previously Unidentified Costs not in 2012 Reuse Study[b]
General purpose warm storage	$32,220,862	$48,406,630
Fixed simulators	$35,083,006	$51,727,432
AVCATT simulators	$35,427,021	$52,126,576
Arctic readiness center/field house	$36,932,709	$53,873,550
Physical fitness center/gymnasium	$37,919,418	$55,018,378
UAS hangar	NA	$60,000,000[c]

Notes: AVCATT – aviation combined arms tactical trainer, NA – not available, USACE – U.S. Army Corps of Engineers, UAS – unmanned aircraft system

[a] Cost is per hangar.

[b] Cost is per hangar and includes $9.5 million in additional structural and foundational repairs, 5 percent standard contingency fee, 6.5 percent USACE overhead, and 4 percent Design-Build cost.

[c] Cost includes $4 million specific to UAS requirements.

During the development of the Form DD1391 for rehabilitation of one hangar, the Army determined that Hangar 2 would be the preferable facility to reuse, despite the existing fire damage. Full-scale rehabilitation of these facilities would address the structural deficiencies that both hangars are experiencing, and because Hangars 2 and 3 are nearly identical, the cost to rehabilitate and maintain would be similar. There would be no appreciable rehabilitation cost difference between Hangars 2 and 3 due to the 2011 fire damage because suppression activities prevented the fire from spreading through the entire facility. The MILCON charrette conducted by the USACE Alaska District began with the intention of evaluating Hangar 3 for rehabilitation into a UAS maintenance/storage hangar. As the evaluation proceeded, it became apparent that Hangar 3 could not adequately meet the necessary requirements for renovation into a UAS hangar primarily because of current plans to construct a new hangar in proximity to the eastern side of Hangar 3, scheduled to begin in FY 13. Construction of this new hangar would essentially cut off aircraft access to the airfield from the eastern bay door of Hangar 3. The western bay door of Hangar 3 could still provide access to the airfield; however, because of the manner in which the UAS maintenance bays would be configured, the use of both the east and west hangar doors is essential to meet mission requirements.

Hangar 2's superior airfield access, along with its east and west hangar door capabilities, made this hangar the better choice of the two, even with the fire damage. This is due in part to the lack of eastern door access in Hangar 3, which would result in a hangar bay size that is smaller than the required square footage and an inadequate layout for the unrestricted operation of the UAS. Because of the location deficiencies of Hangar 3, Hangar 2 was considered as the preferable facility at Fort Wainwright that could potentially meet the UAS mission requirements (Army, 2012f).

The cost of a particular Army construction project is an important factor in determining the justification of the activity. The MILCON project review process, as conducted by the major Army commands, Headquarters, USACE, Office of the Secretary of Defense, and ultimately Congress, considers economics as key to obtaining MILCON funding. Due to funding fluctuations and mission prioritizations, the Army often does not have adequate funding for replacement of aging facilities or renovation of existing ones. Decision makers must be confident that the most economical and beneficial alternatives to meet the Army needs are being considered. The Army's ultimate goal is that tax dollars are spent most economically and scarce resources are allocated efficiently (Army, 1992).

The USAG FWA must consider the wider context of the current fiscal reality within the military budget. The Department of Defense (DoD) continues to institute its *More Disciplined Use of Resources* campaign by developing strategies to realize savings. Current trends indicate that the military force

structure is drawing down, resulting in a pause to the MILCON program at specific installations as the effects of the military drawdown are determined. Most recently, the USAG FWA has experienced a $320 million MILCON loss over the current 5-year program. Only one $10 million MILCON project was awarded to the USAG FWA over this period. As a whole, the DoD can anticipate a $9.6 billion reduction to the FY 13 MILCON program and a reduction of about $60 billion during the period of FY 13 through FY 17. The Army, alone, has committed to saving approximately $21.7 billion between FY 13 and FY 17. The MILCON program will see a reduction of approximately $8 billion during the same period (DoD, 2012). These projections were made prior to the 2013 Sequestration, which will cause an even larger impact on funding availability.

Based on the thorough and varied cost estimation efforts that the Army conducted to determine an accurate rehabilitation cost for Hangars 2 and 3, as well as the current DoD More Disciplined Use of Resources financing strategy, the USAG FWA determined that rehabilitation of either one or both of Hangar 2 or Hangar 3 for any reuse option would not satisfy the third screening criteria. The amount of money required to implement a reuse through facility rehabilitation would be prohibitively expensive and would not be approved for funding. The USAG FWA considered the most recent local MILCON funding loss of $320 million, as well as the cost range for rehabilitation—$48 million to $60 million—and reasonably concluded that the cost associated with rehabilitation is prohibitively expensive given the current DoD fiscal posture.

Discussion of Screening Criterion 4 (Funding Source)

The USAG FWA determined that rehabilitation of one or both of Hangars 2 and 3, despite the reuse option chosen, would not satisfy the fourth screening criteria of having a clearly identified, applicable, and timely funding source or a mechanism that would guarantee the funding needed to support the basic rehabilitation of these facilities. The USAG FWA has explored all possibilities available to obtain an applicable and timely funding source, as outlined below.

The USAG FWA researched the various funding possibilities for rehabilitating the hangars and identified three possible Army funding sources: rehabilitation financed by the sustainment, restoration and modernization (SRM) program; minor construction financed by the unspecified minor military construction, Army (UMMCA) program; and major construction financed by the Army's MILCON program (Table 2-5). Use of these funds is restricted by statutory limitations that Congress has enacted for each funding program.

Table 2-5: Summary of Army Funding Mechanisms and Likelihood for Use in Rehabilitating Hangar 2 or Hangar 3 or Both

Funding Mechanism	Statutory Funding Limitations	Could the Hangars Be Rehabilitated with this Funding Source?
SRM	Repair cost cannot exceed 50 percent of the repair-to-replacement value	No, the cost to rehabilitate far exceeds the 50 percent repair-to-replacement value of $19 million. A reconstruction of this building today would cost $38 million.
UMMCA	$750,000 to $2 million[a]	No, the cost to rehabilitate far exceeds this amount.
MILCON	>$750,000	This funding mechanism is appropriate given the inability to use the other funding mechanisms; however, the proposed reuses are not currently considered one of the Army's critical shortfalls, and it does not fall within an identified Focus Area identified in the FY 13 to FY 19 Army FIS Guidance.

Notes: FIS – facility investment strategy; FY – fiscal year; MILCON – military construction; SRM – sustainment, restoration, and modernization; UMMCA – unspecified minor military construction, Army

[a] Up to $3 million can be spent on projects that correct a threat to life, health, or safety.

Sustainment, Restoration and Modernization Funding Source

For a project to be eligible for restoration finance under the SRM program, the funded repair project cost must not exceed 50 percent of the repair-to-replacement value of the facility (Army, 2010, 2012g). The current replacement value of either Hangar 2 or Hangar 3 would be approximately $38 million.[16] Based on the regulation, in order to obtain funding, the repairs to either Hangar 2 or Hangar 3 could not exceed $19 million. The current USACE Alaska District rehabilitation estimate of $60 million, as well as those values determined as part of the reuse study ($48 million to $55 million) (Table 2-4), clearly exceed the 50 percent repair-to-replacement value of the hangar. Thus, the high cost of rehabilitation for Hangars 2 and 3 (ranging from $48 million to $60 million) makes them unlikely candidates for funding under this program.

Use of the USAG FWA's local SRM funding source is not a valid option because the local SRM funding amounts do not support the cost of rehabilitating the hangar(s). For example, the FY 12 budget, used as a benchmark, identified a total of $46 million for Fort Wainwright to spend on the annual sustainment of facilities. Approximately $28 million of this total is non-discretionary, meaning that the funds cannot be spent on anything other than what it was intended for. The USAG FWA's discretionary

[16] The cost to construct a new UAS hangar, $38 million, was used as the replacement value because it represents the most current and valid cost estimate for a new hangar facility at Fort Wainwright.

SRM budget totaled about $18 million for this period. Even if it was possible to allocate the entire $18 million toward a single project without detrimental effects to other needs at Fort Wainwright, it is still insufficient to support the current rehabilitation cost estimate that ranges from $48 million to $60 million per hangar.

Unspecified Minor Military Construction, Army, Funding Source

For a project to be eligible for minor construction funding under the UMMCA program, the total funded costs cannot exceed $2 million. Based on the cost estimates outlined in Section 2.3.3.2 under the subheading *Discussion of Screening Criterion 3* and in Table 2-4, rehabilitation of either hangar would not be eligible for this type of funding.

Military Construction Funding Source

The USAG FWA considered relying on the MILCON process and submitting a hangar rehabilitation project as part of its annual budget request for new construction. Public law governs MILCON. Every Army MILCON undertaking must be specifically authorized and funded in MILCON legislation or performed under special statutory authority. The MILCON program is typically a 5-year process and involves a sequence of reviews by the Office of the Secretary of the Army, the Office of the Secretary of Defense, Office of Management and Budget, and Congress. Program changes continue throughout the review until the MILCON program becomes law.

Following a requirements analysis, which is based on potential military unit stationing actions, programmatic documents (referred to as Form DD1391s) are developed for potential MILCON projects. Each installation maintains a Real Property Planning Board to prioritize its list of MILCON projects and DD1391 programmed amounts in accordance with the Army's Facility Investment Strategy (FIS) Guidance (Army, 2012h) for the current Program Objective Memorandum (POM).

The Army's FIS guidance encompasses the SRM, UMMCA, and MILCON funding programs previously mentioned. The FIS was developed and approved to optimize the Army's application of scarce resources. Essentially, through implementation of the FIS, the Army intends to sustain needed facilities and improve their quality, dispose of unnecessary facilities, and build-out the most critical facility shortfalls. The Army has identified the following critical facility shortfalls for the FY 15 to FY 19 MILCON cycle: organizational vehicle maintenance, ranges and training support systems, and Army Reserve Component readiness facilities. Additional focus areas are trainee barracks, organic industrial base, and energy/utilities (Army, 2012h). The Army, thus the USAG FWA, will concentrate its investment in these areas. If a proposed project does not fall within one of these critical shortfalls or focus areas, the likelihood of it being prioritized is very low. The USAG FWA uses the FIS as the basis

for providing sufficient facilities for mission requirements at the least cost with acceptable quality, functionality, and quantity.

The FIS guides Army installations on how to use the various funding mechanisms. The Army FIS Guidance requires consideration of the full range of facility funding solutions, by first using SRM funding to the maximum extent possible prior to considering an UMMCA or MILCON solution. The FIS further iterates that projects submitted for funding consideration must be fully supported and documented in an installation's local Real Property Management Plan, Installation Status Report, and RPLANS, in addition to being classified as a critical shortfall or focus area.

Fort Wainwright is part of the Pacific Region and the following military installations in the region can submit projects to the annual Installation Management Command (IMCOM) Pacific Region/U.S. Army Pacific Command Construction Requirements Review Committee to establish one consolidated Base Operations and Mission priority list that is submitted to their respective higher headquarters offices: USAG Fort Wainwright, USAG Fort Greely, USAG Red Cloud, USAG Yongsan, USAG Humphreys, USAG Daegu, USAG Japan, USAG Hawaii, an USAG Kwajalein Atoll. Projects from the previous year's regional effort are carried over into the new cycle and reprioritized with the newly introduced requirements. Then, each Army region priority list is assessed, and a Headquarter IMCOM priority is established. Ultimately, the FY 15 to FY 19 priority list is finalized for the Army. In accordance with the Army FIS, IMCOM can only present three projects for consideration for the FY 15 to FY 19 POM.

In understanding Army FIS guidance, the MILCON process, and the prioritization of projects locally, regionally, and across the entire Army, it becomes obvious that hangar rehabilitation would not be viewed as a likely project to be funded in the near future, if at all. With no reasonable expectation of MILCON funding for this project at this time, applying a "wait-and-see" approach to MILCON funding for these facilities is not a responsible use of government funds. It does not support the tenets of purposeful facility sustainment within the Army as it necessitates incurring ongoing annual maintenance costs (approximately $350,000 per hangar per year), additional wear and tear to the facilities that could possibly render rehabilitation obsolete, and overall project cost escalation to a point where the range of $48 million to $60 million would no longer be a valid estimate for rehabilitation.

In another attempt to secure funding for the rehabilitation of the hangars, the USAG FWA used the 2012 Reuse Study estimate of $32 million to $38 million per hangar to research potential partnership opportunities with other federal, state, or private/commercial interests. No entity expressed an interest in a funding partnership. This communication is further explained in detail in the following Section 2.3.3.4.

Conclusion

In summary, the potential alternative of hangar rehabilitation associated with the relevant reuse options, directly addresses the disposition of Hangars 2 and 3 and supports the current and future military missions of Fort Wainwright. This alternative is prohibitively expensive (even to rehabilitate one hangar) and lacks the necessary applicable and timely funding mechanism to support its successful implementation. Given the current and future economic outlook for the Army and nation, the USAG FWA has decided that further advancement of rehabilitation would not be in the best interest of the Army's limited funding, and it would not be smart planning on the part of the USAG FWA. The USAG FWA has determined proceeding with this option, while knowing that rehabilitation is not fundable, is impracticable. As a result, this alternative was determined to be not reasonable. Because it is no longer considered reasonable, this potential alternative of rehabilitation is not carried forward for full analysis.

2.3.3.3 Removal and Reconstruction of Either Hangar 2 or Hangar 3 or Both on Fort Wainwright

Discussion of Screening Criterion 1 (Hangar Disposition)

The option of removing the hangars via deconstruction and reconstructing them at a different location on Fort Wainwright for reuse, regardless of reuse type, meets the first screening criterion as it directly addresses the disposition of the buildings.

Discussion of Screening Criterion 2 (Mission Compatibility)

All reuse options except the roller rink and the museum are compatible with the second screening criteria for their potential to meet current and future military missions at Fort Wainwright. Even though the roller rink and museum reuse option would be compatible with existing military land use designations, they are not an appropriate use of valuable real property space, and would ultimately be an ineffective use of facility planning and maintenance funding because the Army has no need for a roller rink or museum at this time. Furthermore, these reuse options do not support the current USARAK mission of rapid deployment, military training requirements, or assistance with future mission changes.

Discussion of Screening Criterion 3 (Cost)

Based on the thorough cost-estimation efforts that the Army conducted in attempting to determine an accurate rehabilitation cost for Hangars 2 and 3 (described in Section 2.3.3.2 under the subheading *Discussion of Screening Criterion* 3), as well as the current DoD More Disciplined Use of Resources financing strategy, the USAG FWA determined that removal and reconstruction of either one or both of

Hangar 2 or Hangar 3 to support any reuse option would not satisfy the third screening criteria. The amount of money required to implement a reuse through facility relocation would be prohibitively expensive.

Discussion of Screening Criterion 4 (Funding Source)

Based on the previous discussion of available Army funding mechanisms for this type of construction project (discussed in Section 2.3.3.2 under the subheading *Discussion of Screening Criterion* 4) and similar to the hangar rehabilitation alternative, the proposal to remove and reconstruct one or both of the hangars would not be viewed as a likely project to be funded in the near future. There is no reasonable expectation of MILCON funding for this project at this time.

Conclusion

In summary, the potential alternative of removing and reconstructing the hangars on Fort Wainwright directly addresses the disposition of Hangars 2 and 3 and except for the roller rink and museum reuse options supports the current and future military missions of Fort Wainwright and USARAK. This alternative is prohibitively expensive (even to relocate one hangar) and lacks the necessary applicable and timely funding mechanism to support its successful implementation. As a result, this alternative was determined to be not reasonable. Because it is no longer considered reasonable, this potential alternative of removal and reconstruction is not carried forward for full analysis.

2.3.3.4 Closed Layaway of Either Hangar 2 or Hangar 3 or Both

Under this alternative, the hangars would remain vacant and unused because no specific reuse has been identified. During their permanent closed layaway lifespan, the hangars would be rehabilitated to provide for their long-term structural integrity and to meet life, health, and safety standards to protect any user of the facility. All work under this alternative affecting historic materials, surfaces, and finishes would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Repairs to the following areas would be required for closed layaway: architectural, fire protection, mechanical, and electrical.

Long-term maintenance support would include roof repairs, security patrols, deactivation of certain non-critical utility systems, and pest management.

Discussion of Screening Criterion 1 (Hangar Disposition)

The closed layaway alternative would directly address the disposition of the hangars.

Discussion of Screening Criterion 2 (Mission Compatibility)

Closed layaway does not meet the second screening criteria because both hangars would remain vacant and would not support the Army's mission at Fort Wainwright. These unused facilities would occupy valuable space on the active airfield that could be used for other purposes that actively contribute to the Army's mission in Alaska.

Discussion of Screening Criterion 3 (Cost)

Closed layaway of the either Hangar 2 or Hangar 3 or both does not meet the third screening criteria. The cost to rehabilitate the hangars to provide for their long-term structural integrity would be prohibitively expensive and would not be approved by the Army funding entities, as discussed in Section 2.3.3.2 under the subheading *Discussion of Screening Criterion* 3.

Discussion of Screening Criterion 4 (Funding Source)

There is no identified, timely funding source as discussed in Section 2.3.3.2 under the subheading *Discussion of Screening Criterion* 4.

Conclusion

Because closed layaway would not support the military mission in Alaska, is prohibitively expensive, and has no identified and timely funding source, this alternative is not considered reasonable. Consequently, this potential alternative is not carried forward for full analysis.

2.3.3.5 Transfer of Ownership of Either Hangar 2 or Hangar 3 or Both to Non-Army Entities

Under this alternative, the Army would partner with another federal or state agency or private entity and transfer ownership of either Hangar 2 or Hangar 3 or both for rehabilitation and reuse. The receiving entity would be responsible for rehabilitating the structure to comply with all applicable building codes; improve life and safety conditions, including AT/FP measures; and correct damage and deficiencies to ensure the long-term structural integrity of the hangar(s). The partnering agencies would also be responsible for the management, operations (to include utilities) and maintenance of the hangar(s), as well as the funding necessary to carry out all of these activities, including rehabilitation.

The USAG FWA sent letters to several agencies to inquire about their potential interest in reusing the hangars. The agencies receiving letters were identified based on their existing use of Ladd Field or their responsibilities for aviation management in Alaska. The USAG FWA required that any potential reuses identified by outside agencies be compatible with the current and future military mission at Fort

Wainwright. Options included the rehabilitation of the hangars to support reuse as an armory, aircraft maintenance, or warm storage. A rehabilitation cost estimate of $32 million to $38 million was also included. Letters were sent to the U.S. Bureau of Land Management, Alaska Fire Service, and the Alaska Army National Guard due to their existing use of Ladd Field. Letters were also sent to the Department of the Interior National Business Center/Aviation Management, Alaska Regional Office, and the Alaska Department of Natural Resources, Division of Forestry, due to their aviation management responsibilities within the Interior Alaska Region. A letter of inquiry was also sent to the NPS due to its special expertise and regulatory authority regarding the Ladd Field NHL. Each agency responded that they were currently not interested in partnering with the Army to rehabilitate and reuse the hangars (see Appendix D for all correspondence).

The USAG FWA conducted market research in spring 2012 to determine the feasibility of ownership transfer of the hangars to a private or commercial entity. Research into the region's commercial real estate market found that comparable-sized facilities to the hangars are available for rent or purchase off military land for considerably less money than the cost of rehabilitating one or both hangars. Current rental rates, if applied to a potential future lease situation of the hangars by a private entity, are not high enough to enable the Army to realize a return on a potential investment of approximately $48 million to $60 million for rehabilitation of one hangar (McEnteer, 2012). Given this market research, the opportunity for the Army to partner with or support the use of the hangars by a private or commercial entity is not likely to present itself.

Discussion of Screening Criterion 1 (Hangar Disposition)

The transfer of ownership alternative would directly address the disposition of the hangars.

Discussion of Screening Criterion 2 (Mission Compatibility)

This option could support the second screening criteria if both hangars were reused in a way that is compatible with the current and future military mission at Fort Wainwright.

Discussion of Screening Criterion 3 (Cost)

This option does not meet the third screening criteria. The cost to rehabilitate the hangars would be prohibitively expensive and would likely not be approved by another agency's funding entity or allow the Army to realize a return on its investment if it were able to lease the hangars to a private party.

Discussion of Screening Criterion 4 (Funding Source)

None of the agencies contacted by the USAG FWA were interested in partnering with the Army to provide funding and rehabilitate the hangars for a compatible use.

Conclusion

Because no federal or state entity responded with interest in rehabilitating and reusing the hangar(s), and market research does not support soliciting potential interest from private or commercial entities, this alternative is not considered reasonable. Consequently, this potential alternative is not carried forward for full analysis.

2.3.3.6 Conclusion of Viability Analysis

A range of potential alternatives were screened for their ability to meet the stated objectives of the purpose and need. After application of the screening criteria, as listed in Section 2.3.1, one reasonable and viable alternative remains.

Alternative 1, Demolition of Hangars 2 and 3, would result in the footprint of the demolished hangars being converted to concrete airfield apron space, and the actual hangar material being disposed of either through recycling/diversion or at an approved landfill. This alternative has the potential to satisfy the screening criteria set forth in the viability analysis, the objectives of the Proposed Action, and the purpose and need. It is carried forward through the remainder of this Draft EIS.

In addition, Alternative 2, the No Action Alternative, must be considered and carried through for analysis in the Draft EIS, as required by 40 CFR §1502.14(d). Under the No Action Alternative, Hangars 2 and 3 would continue to not meet the functional requirements of maintenance facilities for aircraft, they would continue to serve no active military function, and they would continue to remain vacant because they have both been found to be unsafe for occupancy. No large-scale rehabilitation efforts are currently planned for the hangars and their structural integrity would continue to deteriorate, perhaps resulting in structural failure. Alternative 2, the No Action Alternative, does not meet the purpose and need, and leaving the hangars vacant would not be compatible with the current and future military mission at Fort Wainwright. This alternative is carried forward through the Draft EIS as required by the CEQ regulations (40 CFR §1502.14). It serves as a baseline against which the impacts of the action alternatives can be measured.

2.4 Alternatives Carried Forward

This section provides detailed descriptions of both the reasonable action alternative and the No Action Alternative to be analyzed in this Draft EIS.

2.4.1 Alternative 1: Demolition of Hangars 2 and 3

Under this alternative, Hangars 2 and 3 and their supporting infrastructure would be demolished beginning in spring 2014. Demolition would involve removal of the hangars, totaling 24,016 cubic yards of non-hazardous debris; demolition of existing and abandoned utilities not belonging to Doyon Utilities (the current utility provider for the installation), totaling approximately 2,680 linear feet; demolition of existing privately owned vehicle (POV) parking areas, lighting, head bolt outlets and power source, encompassing an area of approximately 3.3 acres; and demolition of the concrete building slabs and foundations within 5 feet of the building, to a depth of 8 inches, totaling approximately 2,075 cubic yards of debris. In addition, a small (200-square-foot), open, flammable liquids storage facility located between Hangars 2 and 3, which is currently empty, would be demolished, totaling approximately 91 cubic yards of debris. Prior to demolition, the Army would conduct hazardous material surveys of the buildings and their supporting infrastructure, including surveys for soil contamination. The Army would remove and dispose of any hazardous materials found. Asbestos containing building materials would be disposed of in the Fort Wainwright landfill, while all other hazardous materials would be disposed of off-post in the Fairbanks North Star Borough (FNSB) landfill in accordance with applicable federal and state regulations. Non-hazardous demolition debris would be disposed of in the FNSB landfill; however, the Army would divert (i.e., salvage, recycle, or reuse) non-hazardous materials from being placed in the landfill to the maximum extent practicable.

Once demolition of the hangars is complete, concrete would be added to the building and infrastructure footprints to maintain consistency with the adjacent airfield, which is designated as an aircraft parking apron. The Army would construct two asphalt access roads to the new apron to facilitate travel by emergency and maintenance vehicles. Infiltration areas, swales, and culverts for stormwater would be installed as needed, to include the addition of topsoil and seeding. Security fencing, compatible with existing design, would also be installed. The total area encompassed by this project is approximately 10 acres. Any future construction on this site is currently unknown and is beyond the scope of this EIS. If future construction does occur it would be the subject of separate NEPA documentation.

2.4.2 Alternative 2: No Action

Under the No Action Alternative, no demolition of Hangars 2 and 3 would occur. While remaining intact, the hangars would continue to not meet the functional requirements of maintenance facilities for aircraft; thus, serving no active military function. The hangars would remain vacant because they have been found to be unsafe for occupancy. The Army would continue to heat the facilities to prevent snow buildup on the roofs (which, if allowed to accumulate, could cause their collapse). Maintenance and upkeep of the hangars, such as security patrols, pest control, and building systems maintenance, would continue based on current funding levels and other maintenance priorities at Fort Wainwright; however, as large structural systems fail they would not be replaced or receive major repairs. For example, recent freezing and bursting of water pipes in Hangar 2 in late 2012 rendered the fire suppression system within the side offices inoperable. Unsafe working conditions and current funding levels prevent this system from being repaired.

Maintenance and upkeep of the hangars, including utilities, requires approximately $350,000 per hangar in annual funding. Given the current disrepair of the hangars, they present safety concerns for any person entering them, and in some cases, safety concerns prevent maintenance from being performed (USAG FWA, 2011a). Prior to their condemnation in 2011, the following maintenance activities were performed: fire suppression sprinkler maintenance, oil-water separator maintenance, minor facility preventative maintenance, and project-by-project repair maintenance. All maintenance activities except the fire suppression sprinkler maintenance were halted following the determination that the hangars were unsafe for occupancy. Because there will be no large-scale rehabilitation efforts and the likelihood that future system failure will not result in replacement or repair, the structural integrity of the hangars will continue to deteriorate over time. The eventual uncontrolled collapse of the buildings or perhaps the total loss of one or both hangars by fire, due to inoperable fire suppression systems, is likely. At such time the buildings do collapse, all debris would be treated as waste and disposed of in the FNSB landfill. Due to the uncontrolled nature of the potential collapse, it is likely that the option for salvaging, recycling, or reusing building materials would be eliminated. Thus, the total amount of debris generated under the No Action Alternative would likely be more than that generated under Alternative 1 due to the inability to divert materials from local landfills. Any follow-on actions associated with the location would be subject to funding, but the current preference would be that concrete is added to the building footprints to maintain consistency with the adjacent airfield as an aircraft parking apron.

2.5 Identification of the Preferred Alternative

The Army's Preferred Alternative is Alternative 1, Demolition of Hangars 2 and 3. Demolition would involve removal of the hangars and their supporting infrastructure, including demolition of existing and abandoned utilities not belonging to Doyon Utilities; demolition of existing POV parking areas, lighting, head bolt outlets, and power source; demolition of the small open, flammable liquids storage facility that is located between Hangars 2 and 3; and removal of concrete building slabs and foundations. Once demolition of the hangars is complete, concrete would be added to the building and infrastructure footprints to maintain consistency with the adjacent airfield, which is designated as an aircraft parking apron. Alternative 1 is described in further detail in Section 2.4.1 above.

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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

This chapter describes the affected environment of Fort Wainwright, Alaska, and the surrounding area, as well as the environmental impacts associated with each alternative. The affected environment consists of areas and the resources within those areas that may experience environmental effects resulting from implementing the alternatives described in Chapter 2.0. A study area, or region of influence (ROI), is described for each resource area examined in this analysis. The ROI varies among resources and defines the geographic extent of potential effects from the alternatives on the important elements of that resource. Immediately following the Affected Environment section for each resource is the presentation of Environmental Consequences section, which details the environmental impacts associated with each alternative. Alternative 1, Demolition of Hangars 2 and 3, is presented first, followed by the analysis of Alternative 2, No Action. Any mitigation measures identified to reduce or eliminate the impact of an alternative on a resource are identified within the analysis for that resource area. In addition to identifying the direct and indirect environmental impacts associated with each alternative, the cumulative impact of the alternatives with other past, present, and reasonably foreseeable future actions within the ROI[17] for each resource area are discussed in Section 3.9. As required by 40 Code of Federal Regulations [CFR] §1502.16, this chapter also describes in Section 3.10 any adverse environmental effects that cannot be avoided, any irreversible or irretrievable commitments of resources if the proposed action is implemented, and the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity,

3.1.1 Relevant Statutes, Executive Orders, and Permits

The United States (U.S.) Army Garrison Fort Wainwright, Alaska (USAG FWA) has prepared this Draft Environmental Impact Statement (EIS) in accordance with the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) regulations (40 CFR §1502.25). Table 3-1 provides a list of the environmental statutes, executive orders, and permits that are applicable to this Proposed Action for the resource areas that were carried forward for analysis.

[17] The ROI for the cumulative effects analysis may not necessarily be the same as for the Proposed Action.

Table 3-1: Environmental Statutes, Executive Orders, and Permits Applicable to the Proposed Action

Resource Area	Statutes, Executive Orders, and Permits
Air quality	Clean Air Act (CAA) of 1970 (Public Law 95–95), as amended in 1977 and 1990 (Public Law 91–604); U.S. Environmental Protection Agency (USEPA), Subchapter C-Air Programs (40 CFR §§52–99); and the Energy Policy Act of 2005 (Public Law 109–58)
Cultural resources	NHPA (16 USC §470 et seq.) (Public Law 89-865) and Amendments of 1980 (Public Law 96-515) and 1992 (Public Law 102-575); Protection and Enhancement of the Cultural Environment-1971 (Executive Order 11593); Protection of Historic and Cultural Properties (36 CFR §800); National Register of Historic Places (36 CFR §60); and National Historic Landmarks Program (36 CFR §65).
Hazardous materials/ hazardous waste	Resource Conservation and Recovery Act of 1976 (Public Law 94-5800), as Amended by Public Law 100-582; USEPA, subchapter I-Solid Wastes (40 CFR §§240–280); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC §9601) (Public Law 96-510); Toxic Substances Control Act (TSCA) (Public Law 94-496); USEPA, Subchapter R-TSCA (40 CFR §§702–799); Oil Pollution Act (33 USC § 2701 et seq.); Pollution Prevention Act (42 United State Code §13101 et seq.); CAA Amendments (Section 112) – National Emissions Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR §§61 and 63): The Asbestos NESHAP (40 CFR §61, Subpart M); Emergency Planning and Community Right-to-Know Act (40 CFR §§300–399); Federal Compliance with Pollution Control Standards-1978 (Executive Order 12088), Superfund Implementation (Executive Order 12580); and Strengthening Federal Environmental, Energy, and Transportation Management (Executive Order 13423); Transportation Safety Act (49 CFR §§100–185). Permits: Solid waste disposal at Fairbanks North Star Borough landfill; federal, state, and local permits for excavation and storage of contaminated materials; licenses, permits, and notifications in conjunction with the project's asbestos abatement
Safety	29 CFR §1926, Safety and Health Regulations for Construction, and applicable subparts of 29 CFR §1910, Occupational Safety and Health Standards. Permits: Army Radiation Permit
Environmental justice and protection of children	Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations (Executive Order 12898); Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045)
Sustainability	Energy Independence and Security Act of 2007; Strengthening Federal Environmental, Energy, and Transportation Management (Executive Order 13423); and Federal Leadership in Environmental, Energy, and Economic Performance (Executive Order 13514)

3.1.2 Presentation of Resource Areas

Analysis of the environmental consequences of the Proposed Action focuses on those areas of concern identified during scoping. Environmental consequences associated with the Proposed Action include

direct, indirect, short-term, and long-term impacts; cumulative impacts; and any irreversible or irretrievable commitments of resources.

The CEQ defines direct effects as those caused by the action and occur at the same time and place; whereas, indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR §1508.8). For example, impacts from the demolition of Hangars 2 and 3 at Fort Wainwright would be a direct effect associated with the alternatives, while an increase in local spending by construction workers hired to perform the demolition would be an indirect effect. Impacts are characterized as beneficial or adverse and short term or long term. Beneficial impacts are those that would result in a positive change in the condition or appearance of the resource or a change that would move the resource toward a desired condition. Adverse impacts are those that would result in a negative change to the appearance or condition of the resource. Short-term impacts are those that would be temporary and associated with the demolition/construction phase but would no longer be perceptible once demolition/construction is completed or shortly thereafter. Long-term impacts are those that would be permanent or would persist for the operational life of the project.

Although further adapted to address the unique characteristics of each resource category carried forward for analysis in this chapter, the qualitative terms used to assess the anticipated impacts associated with each of the alternatives are generally defined as:

- **None**—No measureable impacts are expected to occur.
- **Minor**—Adverse impacts are expected to occur; impacts would be measureable and may have a slight effect on the resource.
- **Moderate**—Adverse impacts are expected to occur; impacts would be noticeable and would have a measureable effect on the resource.
- **Severe**—Adverse impacts are expected to occur; impacts would be obvious, would be significant, and would have serious consequences on the resource.
- **Beneficial**—Only beneficial impacts are expected to occur.

CEQ guidelines indicate significance of an impact is determined by the intensity and the context of the impact. Intensity refers to the severity or extent of an impact (i.e., none, minor, moderate, or severe) and context relates to the environmental circumstances at the location of the impact. Significance criteria were developed in consideration of CEQ's guidance for determining significance (40 CFR §1508.27). For this analysis, the first three qualitative impact categories (none, minor, and moderate) are considered not significant. The next category (severe) is considered significant. The "none, minor, and moderate" qualitative impact categories could be a result of avoidance, minimization, or mitigation of

adverse impacts. The significance criteria are described for each resource area at the beginning of each Environmental Consequences section, and the terms *impact* and *effect* are used interchangeably throughout this document.

3.1.2.1 Resource Areas Carried Forward for Analysis

After consideration of the anticipated impacts associated with the proposed alternatives and information gathered during both the internal and public scoping process, the following resource areas were selected to be carried forward for detailed analysis in this Draft EIS:

- Air Quality
- Cultural resources
- Hazardous materials/hazardous waste
- Safety
- Environmental justice and the protection of children
- Sustainability
- Transportation

3.1.2.2 Resource Areas Dismissed From Further Analysis

After considering information gathered during the internal and public scoping processes, factors used to evaluate the context and intensity of a potential impact, and the anticipated impacts associated with the proposed alternatives, it was determined the following resources would not experience a measureable impact as a result of either alternative. Consequently, they were dismissed from further analysis for the reasons described below:

- **Airspace**—There would be no impact to the operation of the active Army airfield; no change to, or interference with, Federal Aviation Administration airspace; and no impact to the U.S. Bureau of Land Management, Alaska Fire Service's use of the airspace and its ability to respond to wildfires.
- **Biology**—There would be no impact on threatened or endangered species since none occur on Fort Wainwright (USFWS, 2011). The area surrounding Hangars 2 and 3 is heavily developed, being either paved or maintained as improved grounds with no functional natural ecosystems to maintain flora or fauna; however, birds do use some buildings on post for nesting. All migratory birds are protected under the Migratory Bird Treaty Act (MBTA); however, cliff swallows and mew gulls tend to be more visible around Fort Wainwright. Beginning around

May 1 of each year, cliff swallows build mud nests under eave spaces of many buildings on Fort Wainwright and mew gulls build nests on vehicles and other equipment. Other birds of concern are ravens and owls. The MBTA prohibits the "take" of any migratory bird during the breeding season without a permit. "Take" is defined broadly and includes the removal of occupied nests. Occupied nests are defined as those nests that hold eggs and/or chicks. Once a nest is active, it cannot be removed without a permit from the U.S. Fish and Wildlife Service (USFWS). However, the USAG FWA does not seek or receive permits for the depredation of cliff swallow nests. The MBTA and USFWS guidelines provide that nests may be removed prior to becoming active or once active nests are abandoned around July 15. Prior to and during demolition activities, the demolition contractor would be required by USAG FWA to monitor Hangars 2 and 3 for nest building activities and remove any nests found prior to them becoming active. If active nests are found, all activities that could affect the nests would cease until the nest is abandoned. As a result, there would be no effect on migratory birds.

- **Floodplains**—The Main Post of Fort Wainwright, including Ladd Field, is within the 100-year floodplains of the Chena and Tanana rivers. Executive Orders 11988 *Floodplain Management* and 11990 *Protection of Wetlands* prohibit building within a floodplain unless there is no practical alternative. As part of the Proposed Action, once the hangars are demolished concrete would be added to the building and infrastructure footprints to maintain consistency with the adjacent airfield. While this is considered new construction, there is no practical alternative to doing this work within the floodplain. This new apron would occur only within the footprint of existing construction (the hangars and supporting infrastructure) that is already within the floodplain and would cause no new impedance or channelization of the flows of these rivers. Additionally, some of the paved area would be replaced with grassed areas (infiltration areas and swales), reducing the overall amount of impervious surface. This is in compliance with Section 438 of the Energy Independence and Security Act of 2007 which requires federal projects greater than 5,000 square feet to restore, to the maximum extent technically feasible, the predevelopment hydrology of the property. Therefore, there would be no impact to floodplains.
- **Geology and Topography**—The site is essentially flat and the disposition of Hangars 2 and 3 would not change the geology or topography of the site, so there would be no impact.
- **Land Use**—There would be no effect on land use since implementing the disposition of the hangars would not change existing airfield land use designation and would be compatible with an active Army airfield and the USAG FWA Real Property Master Plan. Any future use of this site for purposes other than as an airfield apron is currently unknown and is beyond the scope

of this EIS. Determination of a future use of this site would be subject to a separate NEPA analysis.

- **Noise**—The dominant source of noise in the project area is from the airfield. While demolition of Hangars 2 and 3 would increase noise in the immediate vicinity of the hangars, this noise would be temporary and minor. Operations would also comply with USAG FWA's Installation Operational Noise Management Plan (Army, 2011) which provides recommendations for ways to minimize potential noise impacts. There would be no impact to sensitive noise receptors because no sensitive noise receptors occur in the immediate vicinity of Hangars 2 and 3. There would also be no impact from truck noise. Transportation routes to and from the hangars to the Fort Wainwright and Fairbanks North Star Borough (FNSB) landfills are main roads and the trucks would not alter the noise environment of those roads.
- **Socioeconomics—**The Proposed Action would create about 68 jobs (both directly and indirectly) and approximately $6,822,640 in sales volume for the local economy in FNSB (see Appendix F). These beneficial impacts, however, would be temporary (only occurring during the demolition/construction period) and are extremely small and not significant; a negligible change from the average rate of employment over time in FNSB and a less than one percent change in sales volume over time in FNSB. The Proposed Action would also have no impact on the population, housing, or community and public services of Fort Wainwright or FNSB.
- **Soils**—Soils in the vicinity and within the footprint of Hangars 2 and 3 have been previously disturbed during construction of the airfield and the hangars, so no new impacts to soils would occur. While the soils may be contaminated from previous activities, impacts from potential disturbance of contaminated soils during demolition activities are addressed under the Hazardous Materials/Hazardous Waste resource area (see Sections 3.4.2.2 and 3.4.2.3).
- **Subsistence**—No impacts to subsistence would occur. Section 803 of the Alaska National Interest Lands Conservation Act (ANILCA) defines subsistence use as: "the customary and traditional uses by rural Alaska residents of wild renewable resources for direct, personal, or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade."

  Under Alaska State law, subsistence uses are defined as: "the noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption, such as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of

fish and wildlife resources taken for personal or family consumption; and for customary trade, barter, or sharing for personal or family consumption (Alaska Statute 16.05.940[33]).” The site of Hangars 2 and 3 is heavily developed and contains no wild renewable resources as defined by the ANILCA or as defined under Alaska State law that would allow for subsistence use.

- **Utilities**—The disposition of Hangars 2 and 3 would not require an upgrade in the capacity of the utility systems on Fort Wainwright, so there would be no adverse impact to utilities. If the hangars are demolished, additional capacity would be available to be used elsewhere on the installation which would be a beneficial impact.
- **Visual Resources**—The disposition of the hangars would be consistent with the visual context of an active Army airfield and the surrounding resources of the Fort Wainwright installation so there would be no impact to visual resources.
- **Water Resources**—The Clear Creek Channel, a main drainage ditch on Fort Wainwright that eventually discharges to the Chena River, is located directly west of the Hangar 2 apron. The channel receives storm water from the apron around both hangars via storm drain catch basins. For demolition activities, the demolition contractor would be responsible for preparing and following a Storm Water Pollution Prevention Plan, which would include best management practices (BMPs). Following BMPs, such as using silt fencing around the catch basins and along Clear Creek Channel, would help prevent siltation or contamination of surface waters, resulting in no impact. Additionally, there would be no on-site storage or use of petroleum products, chemicals, etc. that could pose a threat to surface waters.

  The entire project site is an impervious surface, and under the Proposed Action, some of the paved area would be replaced with grassed areas, reducing the overall amount of impervious surface. This would reduce the amount of stormwater produced on the site resulting in beneficial impacts. Additionally, any excavations to take place would be to minimal depths so that there would be no impacts to groundwater.

3.2 Air Quality

The U.S. Environmental Protection Agency (USEPA) defines ambient air in 40 CFR §50.1(e) as “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 CAA Amendments, the USEPA has promulgated National Ambient Air Quality Standards (NAAQS). The NAAQS were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, the USEPA has issued NAAQS for the following criteria pollutants: carbon monoxide (CO), sulfur dioxide

(SO_2), particulate matter (particles with a diameter less than or equal to a nominal 10 micrometers [PM_{10}] and particles with a diameter less than or equal to nominal 2.5 micrometers [$PM_{2.5}$]), ozone (O_3), nitrogen dioxide (NO_2), and lead (Pb).

3.2.1 Affected Environment

3.2.1.1 Air Quality General Conformity

Federal regulations designate Air Quality Control Regions in violation of the NAAQS as nonattainment areas. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. Severity categories have not yet been applied to $PM_{2.5}$ nonattainment areas. The USEPA classifies a portion of the FNSB airshed as in nonattainment for $PM_{2.5}$ (see Figure 3-1). The entire FNSB airshed also was previously in nonattainment for CO, but on September 27, 2004, it came into attainment for that pollutant (USEPA, 2012a). To prevent reverting back into nonattainment, the FNSB is listed as *in maintenance* for CO. The FNSB is in attainment for all other criteria pollutants (USEPA, 2012a). For purposes of this analysis, the ROI includes the entire FNSB airshed with regard to the $PM_{2.5}$ nonattainment and CO maintenance areas.

The NAAQS for $PM_{2.5}$ and CO are listed in Table 3-2.

Table 3-2: Ambient Air Quality Standards

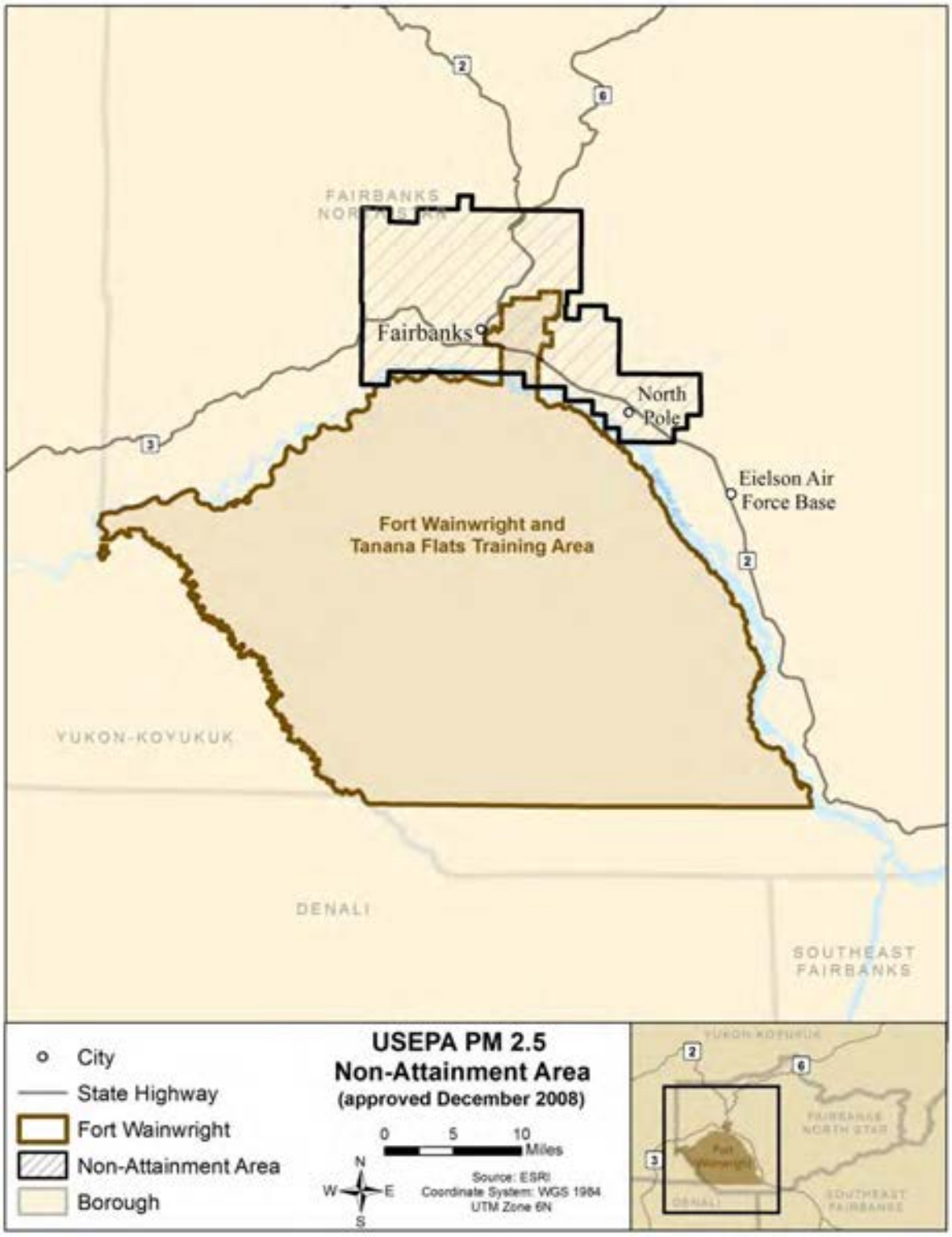
Pollutant	Federal Standard	Alaska Standard
$PM_{2.5}$		
24-hour average	35 µg/m^3	35 µg/m^3
Annual geometric mean	15 µg/m^3	15 µg/m^3
CO		
8-hour	9 ppm	10 mg/m^3
1-hour	35 ppm	40 mg/m^3

Sources: USEPA (2012b), AKDEC (2012)

Notes: CO – carbon monoxide, $PM_{2.5}$ – particulate matter with a diameter less than or equal to nominal 2.5 micrometers, ppm – parts per million, µg/m3 – microgram per cubic meter, mg/m^3 – milligram per cubic meter

To regulate the emission levels resulting from a project, federal actions located in nonattainment or maintenance areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR §93, *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (the Rule). Section 93.153 of the Rule sets the applicability requirements for projects subject to the Rule through the establishment of *de minimis* levels for annual criteria pollutant

Figure 3-1: Fairbanks North Star Borough USEPA $PM_{2.5}$ Nonattainment Area



emissions. These *de minimis* levels are set according to criteria pollutant nonattainment area and maintenance area designations. For projects with emissions that fall below the *de minimis* levels, a full conformity determination is not required. Those projects with emissions at or above the *de minimis* levels are required to perform a conformity analysis as established in the Rule. The *de minimis* levels apply to emissions that can occur during demolition/construction or operation phases of the action.

3.2.1.2 Air Permit Requirements

Title V Permit

Fort Wainwright is regarded as a single source, but it is permitted as two entities and operates under two Title V permits (Permit No. AQ0236TVP02; Permit No. AQ1121TVP01; December 5, 2008). The main sources of emissions on Fort Wainwright are six coal-fired boilers (the Central Heating and Power Plant [CHPP]) and a coal preparation plant. Doyon Utilities Inc. operates these facilities, and they are listed on one of the two Title V permits. This permit is issued under the control of Doyon Utilities Inc. Several marginal emissions units also are located on Fort Wainwright, including small backup generators, small diesel boilers for Bassett Hospital, and underground storage tanks listed on the second Title V permit, which is issued under the control of the Army (AKDEC, 2008a,b).

3.2.1.3 Existing Ambient Air Quality Concentrations

Stations that meet the USEPA's design criteria for State and Local Air Monitoring Stations and National Air Monitoring Stations monitor ambient air quality in FNSB. At various times over the past five years, five different stations have monitored $PM_{2.5}$ and CO. Currently, there are only two active monitoring stations: one is located at 809 Pioneer Road (monitoring $PM_{2.5}$ and CO) and the other is located at the State Office Building (monitoring $PM_{2.5}$). The highest and second highest values recorded at all five stations during the period from 2007 through 2011 are shown in Table 3-3.

Table 3-3: Two Highest $PM_{2.5}$ and CO Values, 2007 to 2011

Monitoring Station	Year				
	2007	2008	2009	2010	2011
#020900034 – 809 Pioneer Road (2.75 miles northwest of Fort Wainwright[a])					
CO – 8 hour (ppm)	--	--	--	--	4.2/3.3
$PM_{2.5}$ – 24 hour ($\mu g/m^3$)	--	--	44.1/43.5	63.8/63.7	39.8/34.2
#020900002 – Federal Building/2nd and Cushman (2.5 miles northwest of Fort Wainwright)					
CO – 8 hour (ppm)	3.4/3.2	3.6/3.6	3.3/3.1	5.0/4.1	--

Monitoring Station	Year				
	2007	2008	2009	2010	2011
#020900020 – Hunter Elementary (2.6 miles west of Fort Wainwright)					
CO – 8 hour (ppm)	3.3/3.1	3.4/3.3	3.1/2.8	--	--
#020900023 – National Guard Armory (3.4 miles northwest of Fort Wainwright)					
CO – 8 hour (ppm)	2.3/2.1	--	--	--	--
#020900010 – State Office Building (2.6 miles northwest of Fort Wainwright)					
$PM_{2.5}$ – 24 hour: Monitor #1 ($\mu g/m^3$)	51.6/33.1	114.5/50.7	159.5/127.7	83.2/57.1	42.6/38
$PM_{2.5}$ – 24 hour: Monitor #2 ($\mu g/m^3$)	52.5/34.1	51.2/46.7	159.6/132.8	80.5/54.6	38/35

Source: USEPA (2012c)

Notes: CO - carbon monoxide, $PM_{2.5}$ - particulate matter with a diameter less than or equal to nominal 2.5 micrometers, ppm – parts per million, µg/m3 – microgram per cubic meter

[a] Distances were measured from the center of Fort Wainwright, in the vicinity of the Proposed Action.

3.2.1.4 Meteorology/Climate

Temperature is a parameter used in calculating emissions for air quality applicability. The climate in Fairbanks, Alaska, ranges from 72 degrees Fahrenheit in July to an average of –17 degrees Fahrenheit in January. Fairbanks receives an average of 11.3 inches of precipitation annually. April is the driest month (NOAA, 2013). During the winter months, low temperatures and calm winds combined with high emissions in Fairbanks create surface-based inversions. Surface-based inversions result in poor dispersion of air pollutants, which can create unhealthy air quality conditions.

3.2.1.5 Air Emissions at Fort Wainwright

As part of its Title V permit, the USAG FWA monitors permanent stationary source emissions, as well as generator emissions, annually. Construction emissions are not included in the calculation of annual emissions because these emission sources are temporary and not regulated by Title V of the CAA. Emissions at Fort Wainwright are nearly at the potential to emit limitations listed under the Title V permits. The potential to emit represents the maximum emissions a stationary source can produce if operating at maximum capacity 24 hours a day for the entire year and takes into account federal enforceable limits (i.e., permit limits, coal use to less than 336,000 tons per year [TPY]). These maximum emissions are provided as the baseline emissions in Table 3-3. Ninety percent of all emissions at Fort Wainwright are from the CHPP. Total operational emissions at Fort Wainwright in 2012 are shown in Table 3-4.

Table 3-4: Criteria Air Pollutant Emissions at Fort Wainwright, 2012

Year	NOx	SOx	PM_{10}	$PM_{2.5}$	CO	VOCs
	(tons per year)					
2012	894.7	2,516.3	62.4	0.90	933.4	77.6

Source: Dick (2012)

Notes: CO – carbon monoxide, NO_X – nitrogen oxide, $PM_{2.5}$ - particulate matter with a diameter less than or equal to nominal 2.5 micrometers, PM_{10} – particulate matter with a diameter less than or equal to nominal 10 micrometers, SO_X – sulfur oxide, VOC – volatile organic compound

3.2.1.6 Regional Air Quality Index Summary

The USEPA calculates the Air Quality Index (AQI) for five major air pollutants regulated by the CAA: ground-level O_3, PM, CO, SO_2, and NO_2. The USEPA collects data daily to determine air quality for the region and releases it in the form of the AQI. The AQI ranges from zero to 500, with zero being no air pollution and 500 representing severely unhealthy air pollution levels. An AQI value between 101 and 150 indicates that air quality is unhealthy for sensitive groups, who may be subject to negative health effects. Sensitive groups may include those with lung or heart disease and will be more negatively affected by lower levels of ground level ozone and particulate matter than the rest of the general public. An AQI value between 151 and 200 is considered to be unhealthy and may result in negative health effects for the general public, with more severe effects possible for those in sensitive groups. AQI values above 200 are considered very unhealthy. An AQI greater than 300 represents hazardous air quality (Clean Air Partners, no date). Table 3-5 shows the recent AQI data for Fairbanks. There were no days with an AQI value above 301 in this time frame.

Table 3-5: Air Quality Index Data for Fairbanks North Star Borough, Alaska

Year	Air Quality Index Ranges		
	101 to 150 Unhealthy for Sensitive Groups (no. of days)	151 to 200 Unhealthy (no. of days)	201 to 300 Very Unhealthy (no. of days)
2008	15	4	0
2009	21	8	2
2010	20	2	0
2011	5	1	0
2012	10	5	2

Source: USEPA (2012d)

Note: no. – number

3.2.1.7 Greenhouse Gases

There is broad scientific consensus that humans are changing the chemical composition of earth's atmosphere. Activities, such as fossil fuel combustion, deforestation, and other changes in land use, are resulting in the accumulation of trace greenhouse gases (GHGs), such as carbon dioxide (CO_2), in our atmosphere. An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, which is commonly referred to as global warming. Global warming is expected, in turn, to affect weather patterns, the average sea level, ocean acidification, chemical reaction rates, and precipitation rates, all of which is commonly referred to as climate change. The Intergovernmental Panel on Climate Change best estimates are that the average global temperature rise between 2000 and 2100 could range from 0.6 degrees Celsius (1.08 degrees Fahrenheit) (with no increase in GHG emissions above year 2000 levels) to 4.0 degrees Celsius (6.66 degrees Fahrenheit) (with substantial increase in GHG emissions) (Intergovernmental Panel on Climate Change, 2007). Even small increases in global temperatures could have considerable detrimental impacts on natural and human environments.

GHGs include water vapor, CO_2, methane, nitrous oxide, O_3, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. A gas's global warming potential provides a relative basis for calculating its carbon dioxide equivalent (CO_2e), which is a metric measure used to compare the emissions from various GHGs based upon their global warming potential. CO_2 has a global warming potential of 1 and is therefore the standard to which all other GHGs are measured.

Water vapor is a naturally occurring GHG and accounts for the largest percentage of the greenhouse effect. Next to water vapor, CO_2 is the second-most abundant GHG. Uncontrolled CO_2 emissions from power plants, heating sources, and mobile sources are a function of the power rating of each source, the feedstock (fuel) consumed, and the source's net efficiency at converting the energy in the feedstock into other useful forms of energy (e.g., electricity, heat, and kinetic). Because CO_2 and the other GHGs are relatively stable in the atmosphere and essentially uniformly mixed throughout the troposphere and stratosphere, the climatic impact of these emissions does not depend upon the source location on the earth (i.e., regional climatic impacts/changes will be a function of global emissions).

Regulatory Climate

In April 2007, the U.S. Supreme Court determined that the USEPA has the regulatory authority to list GHGs as pollutants under the federal CAA. Congress has considered numerous proposals and bills to regulate GHGs but has not adopted any legislation.

Currently, federal agencies address emissions of GHGs by reporting and meeting reductions mandated in laws, executive orders, and policies. The most recent of these are Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, of October 5, 2009, and Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, of January 26, 2007.

The Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, and Executive Orders 13514 and 13423 require the federal government to adhere to specific energy improvements, which address waste reduction and improvements in efficiency. Specifically, the Department of Defense's (DoD) Strategic Sustainability Performance Plan contains strategies to reduce energy waste and improve efficiency (DoD, 2010).

On May 13, 2010, the USEPA issued the Tailoring Rule, which establishes a common sense approach to addressing GHG emissions from stationary sources under the CAA permitting programs. The Tailoring Rule includes three steps aimed at setting GHG thresholds for prevention of significant deterioration (PSD)[18] and Title V permits for new, modified, and existing sources. Steps 1 and 2 set thresholds for these major stationary sources. Step 3, finalized on June 29, 2012, did not revise the thresholds established under Steps 1 and 2 but opted not to apply PSD or Title V GHG permitting thresholds to smaller stationary sources at this time (USEPA, 2012e). Under Steps 1 and 2, PSD requirements applied to new sources with the potential to emit at least 100,000 TPY CO_2e or existing sources that emit 100,000 TPY CO_2e and undertake modifications that increase emissions by at least 75,000 TPY CO_2e. Title V GHG requirements apply to new or existing sources with the potential to emit 100,000 TPY CO_2e (USEPA, 2012e). In Alaska, 3,750 TPY CO_2e is used as the permitting threshold (AKDEC, 2012).

[18] A PSD is required for major source facilities in areas in attainment for all criteria pollutants. It requires a general conformity-like analysis be completed for modifications to those facilities so that air quality does not deteriorate.

Baseline Greenhouse Gas Emissions at Fort Wainwright

GHG emission sources at Fort Wainwright include boilers, chillers, water heaters, and emergency generators. Total GHG emissions from the CHPP in 2011 were 445,870 metric tons CO_2e (491,482 tons) (USEPA, 2013).[19] Consequently, because it exceeds the 100,000 TPY CO_2e, Fort Wainwright will likely require a Title V permit for GHG emissions as the Tailor Rule is implemented.

3.2.2 Environmental Consequences

A project general conformity rule applicability analysis per Section 93.153 of the Rule has been performed that evaluated the proposed demolition of Hangars 2 and 3. The applicability analysis estimated the level of potential air emissions for CO, $PM_{2.5}$, and the $PM_{2.5}$ precursor pollutant SO_2 to analyze impacts to air quality. The *de minimis* thresholds for areas in nonattainment for $PM_{2.5}$ are 100 TPY for $PM_{2.5}$ and SO_2, and 100 TPY for CO maintenance areas.

For Alternative 1, demolition emissions were estimated based on square footage and known building footprints, estimates of the amount of construction debris to be generated, the size of dump trucks to be used for hauling debris to landfills, and the distance to be traveled to and from the landfills. A complete detailed description of all of the assumptions and methodology used to estimate the potential emissions under alternative 1 can be found in Appendix G.

Under the No Action alternative, it is assumed that any future demolition and construction-related impacts resulting from the uncontrolled collapse of the hangars would have the same short-term (heavy equipment-related) impacts to air quality or GHGs as Alternative 1.

3.2.2.1 Significance Criteria

For the purposes of assessing the significance of impacts related to air quality the following impact thresholds were developed:

- **None**—No measurable impacts are expected to occur. Ambient air quality would not change.
- **Minor to Moderate (not significant)—**The degree to which activities result in measureable changes to the local and regional air quality.
- **Severe (significant)**—Activities causing an exceedance of regulatory thresholds would represent a significant impact.

[19] At the writing of this Draft EIS, the report providing GHG emissions for 2012 was not yet available.

3.2.2.2 Alternative 1: Demolition of Hangars 2 and 3

Alternative 1 would require the operation of heavy equipment and dump trucks for demolition activities, including hauling demolition debris to the Fort Wainwright and FNSB landfills, and construction activities for placing an airfield concrete apron within the footprints of the hangars and associated infrastructure once they are removed. Appendix G provides a full conformity applicability analysis for the emissions associated with these activities and describes the assumptions made in calculating the amount of emissions. Operational emissions, such as heating or increased vehicle emissions, associated with implementing Alternative 1 would not increase. With both hangars being demolished, the operational demand on the CHPP would be reduced, resulting in a decrease in emissions from the CHPP, which would be a beneficial impact on air quality. This reduction in the demand on the CHPP is shown in Table 3-6 as operational emissions.

The air quality impacts associated with the demolition of both hangars and construction of the airfield concrete apron in their building footprints are provided in Table 3-6. As shown in Table 3-6, emissions associated with these activities, when compared to the *de minimis* thresholds for an area that is in nonattainment for $PM_{2.5}$ and in maintenance for CO, fall below the *de minimis* thresholds for these pollutants and any precursor emissions.

Table 3-6: Total Emissions under Alternative 1

Demolition, Construction, and Operations	**Total Emissions (tons per year)**		
	$PM_{2.5}$	**SO_2**	**CO**
de minimis thresholds	100	100	100
Demolition and construction activities	0.241	0.058	1.321
Operational demand	–0.0081	–23.543	–8.476
Total emissions	**0.2329**	**–23.485**	**-7.155**

Notes: CO – carbon monoxide, $PM_{2.5}$ – particulate matter with a diameter less than or equal to nominal 2.5 micrometers, SO_2 – sulfur dioxide

To help control fugitive dust, primarily $PM_{2.5}$, from ground-disturbing activities, construction vehicles would adhere to BMPs that would include washing down all construction vehicles before leaving the project area and cleaning soil out of tracked equipment before entering the roadway. Other BMPs include using a water truck to moisten soils before any grading, minimizing areas of ground disturbance, and avoiding activity during periods of high wind.

Greenhouse Gases

Under Alternative 1, demand on the CHPP would be reduced because of the removal of both hangars. This would reduce the amount of coal-burned emissions and CO_2e emissions resulting in a beneficial impact on air quality. Using 2011 GHG emissions from the CHPP, it was determined that 300,000 tons of coal produces 445,870 metric tons of CO_2e. Using this total, it can be assumed that 1 ton of coal produces approximately 0.672 metric ton of CO_2e. Therefore, a reduction in 3,000 tons of coal annually (the estimated electrical and heating demand used by both hangars, as fully described in Appendix G) would eliminate 2,018.52 metric tons of CO_2e.

Under Alternative 1, the only increase in criteria pollutants would be a small, temporary increase in $PM_{2.5}$ emissions during demolition and construction activities, resulting in a short-term, minor impact on air quality. Overall, once the hangars are demolished and the airfield concrete apron is completed, all emission pollutants would be reduced, including SO_2, CO, and GHG emissions, resulting in long-term, beneficial impacts to air quality. A Record of Non-Applicability[20] is provided in Appendix G.

3.2.2.3 Alternative 2: No Action

Under the No Action Alternative, while the hangars remain structurally intact, operational (heat and electrical use) emissions would continue. These emissions are expected to be similar to the operational emissions as fully outlined in Appendix G, Section 7.2.1. These emissions would represent a continued long-term, minor impact to air quality, but would not change the existing air quality conditions. Without large-scale rehabilitation efforts, it is expected that the hangars would eventually collapse on their own. When that occurs, there would be temporary emissions similar to those described under Alternative 1 from the use of construction equipment to remove the debris, including hauling debris to a landfill and placing an airfield concrete apron within the footprints of the hangars and associated infrastructure once the debris is removed. These temporary emissions would result in short-term, minor impacts to air quality. Once all demolition activities and the airfield concrete apron are complete, the No Action Alternative would result in long-term, beneficial impacts to air quality from the reduction in operational emissions and the reduced demand on the CHPP. Similar to Alternative 1, BMPs would be employed to help control fugitive dust, mainly $PM_{2.5}$, during ground-disturbing activities.

[20] A Record of Non-Applicability is a short, written document used to declare that the requirements of the general conformity rule do not apply to a specific action (Army, 2006b).

3.3 Cultural Resources

Cultural resources consist of prehistoric and historic buildings, sites, structures, artifacts, objects, and districts. A number of statutes and regulations that have been enacted at the local, state, and federal levels protect cultural resources and must be considered during the NEPA process.

The National Historic Preservation Act (NHPA) and its associated regulations (36 CFR §800) provide for the preservation of cultural resources. The act established the National Register of Historic Places (National Register), which is a listing of historic properties that are significant to American history and culture and is maintained by the National Park Service (NPS). Sections 106 and 110 of the NHPA set forth the processes federal agencies must follow to manage and protect cultural resources under their care. Section 106 and its implementing regulation require that federal agencies consider the effects of their undertakings on historic properties and define processes for resource identification, significance evaluation, assessment of effects on significant historic properties, and resolution of adverse effects on such properties. Section 110 of the NHPA requires federal agencies to institute programs to identify and evaluate historic resources under their care and to consider all prudent and feasible alternatives, to the maximum extent possible, to avoid an adverse impact on a National Historic Landmark (NHL) by a proposed undertaking. The agency must afford the Advisory Council on Historic Preservation (ACHP) an opportunity to review an undertaking that results in an adverse effect. Under Section 110, the USAG FWA has an added level of responsibility with regard to the Ladd Field National Historic Landmark (Ladd Field NHL) that it does not have for the National Register-eligible Ladd Air Force Base (Ladd AFB) Cold War Historic District (Cold War Historic District). At the state level, the Alaska State Historic Preservation Office (SHPO)/Office of History and Archaeology implements the Alaska Historic Preservation Act (Alaska Statute 41.35.70) and works to preserve sites and buildings that reflect Alaska's heritage.

The USAG FWA has considered the applicability of other federal laws and regulations concerning the management of cultural resources and the impact of the Proposed Action. Federal regulations concerning archaeological sites are not applicable to the Proposed Action because previous construction activities have disturbed the ground at Hangars 2 and 3, and no known archaeological resources have been identified in the vicinity.

Likewise, although the USAG FWA has consulted with federally recognized tribes and tribal organizations, the Proposed Action is not anticipated to result in adverse impacts to tribal resources because no tribal lands or known tribal resources exist within the footprint of the area that the Proposed

Action might disturb. See Section 1.6.5 for additional information on government-to-government consultation.

National Register of Historic Places

To be eligible for listing in the National Register, resources must meet one or more criteria as defined in 36 CFR §60.4. These criteria include the property's association with a significant historical event or with a famous person, the property's embodiment of the characteristics of an architectural style or work of a master, or the property's ability to contribute to scientific/historical research.

Groupings of buildings or sites also may qualify for listing in the National Register as historic districts. Historic districts can comprise buildings, sites, or objects that lack individual distinction, but when viewed as a whole, they are considered significant. Individual resources within a district are considered either contributing or non-contributing. Contributing resources are those that were constructed during a district's period of significance and add to the character and historic significance of a property through historical association or architectural value. Non-contributing resources are those that do not date to a period of significance, have been altered, and no longer retain their historical appearance or do not add to a district's historic character or significance.

In order to qualify for the National Register, a resource must also possess integrity (i.e., important historic physical features must be present and recognizable). The NPS defines integrity as "the ability of a property to convey its significance" (NPS, 1997). The integrity of historic properties is based on seven aspects: Location, Setting, Feeling, Association, Materials, Workmanship, and Design. The aspects are defined by the *National Register Bulletin, How to Apply the National Register Criteria for Evaluation* (NPS, 1997) (Table 3-7). A property does not necessarily need to possess all seven aspects to retain overall integrity and in some instances, certain aspects may be more important than others to a property's significance.

Descriptions of each aspect of integrity as currently retained by the Ladd Field NHL and the Cold War Historic District are provided below. The integrity of Hangars 2 and 3 will not be discussed because the buildings do not possess sufficient significance independent of the Ladd Field NHL or the Cold War Historic District to qualify for individual listing in the National Register. Although previous alterations to character-defining features of the hangars, including siding, windows, and hangar doors, have diminished the integrity of the hangars, they continue to possess sufficient integrity to maintain their status as contributing resources to the Ladd Field NHL and the Cold War Historic District and will be discussed within that context (see Section 3.3.1.3) (Bittner, 2010; USAG FWA, 2010a,b).

Table 3-7: Definitions of the Aspects of Integrity

Integrity Aspect	Definition
Location	The place where the historic property was constructed or the place where the historic event occurred.
Setting	The physical environment of a historic property and the visual connections created by that physical environment. Setting refers to the character of the place in which the property played its historic role. The physical features that constitute the Setting of a historic property include topographic features, vegetation, manmade features, and the relationship between buildings or open spaces that create a landscape with distinctive spatial relationships between historic resources.
Feeling	A property's expression of the aesthetic or historic sense of a particular period of time. In many ways Feeling is the sum of all aspects of integrity. This is a particularly important aspect when applied to historic districts. Districts as a whole should convey a sense of history and communicate their place in time.
Association	The direct link between an important historic event or person and a historic resource.
Materials	The physical components that were combined or deposited during a particular period of time and in a particular pattern or configuration to form or construct a historic resource.
Workmanship	The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
Design	The combination of elements that create the form, plan, spatial structure, and style of the property.

Source: NPS (1997)

National Historic Landmarks

The National Register also includes NHLs, which are historic properties that the Secretary of the Interior has determined to be of national significance. These resources possess exceptional value in illustrating or interpreting the heritage of the United States. NHLs are National Register resources that are afforded a greater degree of protection because of their high level of historical significance. NHLs must meet the criteria as defined in 36 CFR §65.4(a and b). To qualify as an NHL, a property must possess national significance through its association with historical events or a nationally significant person, represent an ideal of the American people, or possess architectural significance. Additionally, a historic district or archaeological site may also qualify as an NHL. An NHL must also meet the integrity requirements as discussed above.

3.3.1 Affected Environment

The area of potential effect (APE) includes historic properties and areas whose character could be altered by the Proposed Action. For NEPA purposes, the APE for cultural resources is the same as the ROI for the affected environment and NEPA analysis. The USAG FWA, through its Section 106 consultation with the Alaska SHPO, has defined the APE to include the Ladd Field NHL and the Cold

War Historic District, based on the Proposed Action's potential to adversely affect Hangars 2 and 3, which are contributing resources to the Ladd Field NHL and the Cold War Historic District.

3.3.1.1 Ladd Field National Historic Landmark

In 1985, the Ladd Field NHL at Fort Wainwright was listed in the National Register as a historic district of national significance for its role in the Army Air Corps' cold weather testing prior to and during World War II, its role as an air depot commanded by the Air Transport Command, and its role in the Lend-Lease Operations as the transfer point of planes to the Russians for transport along the Alaska-Siberia Route.

The Ladd Field NHL embodies the pre-World War II and World War II military construction (see Figure 1-4). The Ladd Field NHL nomination included 26 buildings and structures that contributed to the historic district. The historic features that comprise the Ladd Field NHL include wood, concrete, and steel buildings; concrete and cement runways, taxiways, and roadways; timber and steel-frame aviation hangars; and associated utilities. The period of significance for the Ladd Field NHL extends from 1939 when construction began on the airfield to 1945 when the war ended, the Soviet mission left Ladd Field, and the Air Transport Command transferred Ladd Field from the Army Signal Corps to the Air Force. Ladd Field was the first Army airfield in Alaska and was a key part of the region's defense buildup for World War II.

In 1961, when the Air Force transferred Ladd Field back to the Army, 50 of the 671 extant World War II buildings on the installation were scheduled for disposal because they had either deteriorated beyond economic restoration or they did not fit the foreseeable requirements for the Army or Air Force. The buildings were either sold to the public or transferred to the state of Alaska. Most temporary structures, such as Quonset huts, were moved off the installation to new locations (Price and Sackett, 2001; Design Alaska and JCA, 2011). The initial design and layout of the airfield and installation were developed in the late 1930s and early 1940s prior to the United States' entry into the war. Pre-war facilities at Ladd Field were designed as permanent structures; however, as the war progressed and construction materials, especially steel, became more limited, buildings were constructed as semi-permanent or temporary structures.

The centrally located airfield is the anchoring visual and organizational element of the Ladd Field NHL and includes runways, taxiways, and aprons surrounded by open spaces. North Post, located directly north of the airfield, consists of a collection of flight service facilities, housing, and administrative buildings. The parade ground at the center of North Post remains an important visual and organizational

element of that area. In 1941, the Army completed Hangar 1, located on the south edge of the parade ground. Hangar 1 served as the installation's headquarters and sheltered aircraft throughout the cold weather testing program. Later, the Army used one-half of the hangar to prepare aircraft for transfer to Soviet pilots. North Post is the original garrison built for the cold weather test detachment right before the start of World War II. Once the war began, an additional runway, hangars, and other support facilities were constructed south of the original runway. North Post continued to play a major role in all activities at Ladd Field supporting the war effort, including the Lend-Lease Operations and the air depot functions. North Post has the needed concentration, linkage, and continuity among its historically united buildings and structures to form a historic district while continuing to retain a high degree of integrity.

Current Integrity of the Ladd Field National Historic Landmark

The Ladd Field NHL is significant for its association with a specific historic event or trend in history. The property's significance is best embodied in the integrity aspects of Location, Setting, Feeling, and Association. These aspects are deemed most important because they more closely connect the built environment (buildings, structures, and objects) to the associated historic events. The aspects of Materials, Workmanship, and Design are secondary to the property's significance.

Since Ladd Field was listed as an NHL in 1985, six of the 26 original contributing buildings have been lost, including the Power and Heating Plant (Building 1561), the Community Center (Building 1560), and a double hangar (Building 2106). In 1987, efforts to demolish one of the wartime Kodiak hangars (Building 1542) with explosives resulted in a second hangar (Building 1543) catching fire. As a result, both buildings were completely destroyed (Thompson, 1984a; Bittner, 1987). In August 2004, a fire, with origins unknown, resulted in the destruction of Hangar 6 (Building 2085), a third wartime Birchwood hangar built at Ladd Field. Since 1945, 18 new buildings have been constructed within the NHL boundaries, most of which are located in the southeastern section of the district (Design Alaska and JCA, 2011).

Although changes have occurred over time, the Ladd Field NHL currently retains sufficient integrity to convey its historic significance. The following paragraphs describe each aspect of integrity as currently retained by the Ladd Field NHL. Three integrity degree descriptors are used in the following discussion: high, medium, and low.

Location—The Ladd Field NHL continues to possess a high degree of integrity of Location because it is still located where it was originally constructed and where the historic events of cold weather testing and World War II occurred.

Setting—The Ladd Field NHL possesses a high degree of integrity of Setting as seen by the planned development of the original garrison in North Post, as well as in the associated airfield components. North Post is an example of how Setting can be created by the spatial relationships between buildings and how the original garrison was oriented to create a specific shape (the horseshoe). Setting can also be observed in the landscape surrounding the Ladd Field NHL, which is flat and has a minimum amount of vegetation as would be expected from an area along an active airfield. In addition, the flat, horizontal runways are still retained and so is the orientation of the airfield just south of and running parallel to a distinctive and anchoring land feature, Birch Hill.

Feeling—The Ladd Field NHL possesses a high degree of integrity of Feeling, which essentially is the sum of all aspects of integrity. This is easily understood within North Post, the original garrison because its historic sense of a particular period of time can be easily observed and understood. This area comprises a concentration of buildings that are united historically and aesthetically through their physical arrangement and visual connections.

Association—The Ladd Field NHL possesses a high degree of Association primarily because of events that occurred in North Post. The vast majority of activities associated with cold weather testing and the transfer of aircraft to the Russians were conducted within buildings around North Post. During the war, the interior of Hangar 1 (which is the southernmost anchor of North Post) was divided in half with one side housing Russian maintenance operations and the other side housing the Cold Weather Test Detachment. Also, transient Russian and American pilots were housed in Building 1051 and Building 1049, and the Commander of the Cold Weather Test Detachment lived in Quarters 1. Hangar 1 also functioned as the Command Headquarters overseeing air depot, Lend-Lease Operations, and cold weather testing functions. Building 1024 housed vital communication functions during the war. Building 1541, an aircraft maintenance shop, was built during the war to most likely support Lend-Lease Operations and air depot functions. Hangars 2 and 3, located south of the runway, also contribute to Association. They are the last remaining hangars built during the war to support the war effort. The main purpose of these hangars was to support the air depot functions of the installation with commercial flights and maintenance needs. They were associated with Lend-Lease Operations too, in that American pilots who ferried the planes from Great Falls, Montana, took commercial flights leaving out of Hangar 2 initially and later Hangar 3 for their return trips.

Materials—Currently, there is a low degree of integrity of Materials present within the Ladd Field NHL. The majority of the original windows and roofs have been replaced with substitute materials that have over time eroded the Material integrity of the Ladd Field NHL. The copper roofs on the North

Post's administrative buildings and housing have been removed and most of the original siding has been replaced or covered by vinyl siding. Some historic material is still present in the Ladd Field NHL, especially in Hangar 1, which still retains the historic massive interior doors used during World War II to divide the hangar into separate areas for U.S. and Russian operations.

Workmanship—The Ladd Field NHL retains a medium degree of this aspect of integrity primarily due to the presence of the many permanent structures located in the North Post area. Within North Post, Workmanship is exhibited throughout the design and construction of the utilidors, which were an engineering feat for their time, as well as the North Runway. Both the utilidors and North Runway were adapted to local permafrost conditions by using specialized concrete mixes and engineering applications. Hangars 2 and 3 were constructed from a standard design that was used in many military installations in Alaska. The hangars, therefore, have a low degree of Workmanship that was common for semi-permanent and temporary facilities built during the war. As a result, the hangars do not significantly contribute to this aspect of Ladd Field NHL's integrity.

Design—The Ladd Field NHL retains a high degree of integrity of Design. North Post was designed as a pre-World War II test station and airfield. The majority of the buildings that comprise North Post were designed to be permanent structures and were placed in symmetrical order with the orientation of the buildings circling the parade ground and radiating outward from the horseshoe shape created by Freeman Road. Hangars 2 and 3 also contribute to Design; however, they exemplify the hurried, utilitarian military style of intense construction that occurred during World War II in support of the war effort. Although now surrounded by roads on the west and south and administrative space to the east, the hangars were originally surrounded by Quonset Huts and other temporary structures.

3.3.1.2 Ladd Air Force Base Cold War Historic District

In 2010, the USAG FWA determined that the Cold War Historic District was eligible for listing in the National Register due to its association with the strategic air reconnaissance, air defense, and Arctic research missions of the Cold War and specifically for its role in the early Cold War defense mission of the 46th/72nd Air Reconnaissance Unit and Fighter Intercept Squadrons (Meeks, no date; Bittner, 2010). The USAG FWA identified 36 contributing resources in the Cold War Historic District.

During the Cold War, Ladd AFB served as the Alaska Air Command Headquarters for all the territory north of the Alaska Range. Ladd AFB was significantly associated with strategic aerial reconnaissance, air defense operations, and Arctic research (Price and Sackett, 2001). When the Army assumed control of the installation in 1961 and renamed it Fort Wainwright, operations became devoted to Army Cold

War missions, such as aviation, training, and ground defense. During the Cold War period, Hangars 2 and 3 housed fighter intercept squadrons as part of the Aircraft Control and Warning System.

The Cold War Historic District largely comprises the same contributing resources as the Ladd Field NHL, including Hangars 2 and 3, with the addition of several buildings surrounding the airfield that were built during the early Cold War (see Figure 1-4).

Current Integrity of the Cold War Historic District

The Cold War Historic District retains all the same aspects of integrity in the same degree as the Ladd Field NHL, except it retains a medium degree of integrity of Materials, and its Association is based on Cold War events, rather than World War II events. Location, Setting, Feeling, and Association are deemed the most important aspects of the Cold War Historic District's integrity because they more closely connect the built environment (buildings, structures, and objects) to the associated historic events.

3.3.1.3 Hangars 2 and 3

Hangars 2 and 3 are contributing resources to both the Ladd Field NHL and the Cold War Historic District for their roles in the military defense mission. Located along the southern boundaries of the Ladd Field NHL and the Cold War Historic District, they are a set of twin Birchwood hangars with distinctive barrel-shaped roofs that were authorized for construction in 1943 and were completed the following year as part of the World War II expansion of Ladd Field. During World War II, the Army used Hangars 2 and 3 as maintenance hangars, providing service to various aircraft including bombers, light bombers, and fighter planes. In addition, the Army used Hangar 2 as a parachute and cold weather testing sewing shop and Hangar 3 as a passenger terminal.

The hangars are approximately 200 feet wide by 202 feet long and nearly 60 feet in height. The airfield apron to the north and paved parking on the east, west, and south sides surround the hangars. Montgomery Road extends along the south side of the site, and Meridian Road is located to the west. With their massing, height, and distinctive barrel roofs, the hangars are the last remaining anchor for the southwest corner of the Ladd Field NHL and Cold War Historic District. They are also a significant part of the visual connections within certain portions of the historic districts and contribute to the setting within this area of the cantonment. Hangar 2 and 3 were built during World War II to support the war effort along with two other Birchwood hangars in the southeastern corner of the district (Hangars 5 and 6 are no longer extant). The two sets of Birchwood hangars anchored the southern corners of the airfield with access to the newly created South Runway. When Ladd Field was designated as an NHL in 1985,

Hangars 2, 3, and 6 were extant. Hangar 6 (Building 2085) was destroyed by fire in 2004. Recent construction actions within this portion of the Ladd Field NHL have occurred, further affecting the visual relationship between North Post and Hangars 2 and 3 by obscuring much of the viewshed (CH2M HILL, Inc., 2009; Army, 2009).

Hangars 2 and 3 are similar to one another in design, construction methods, and building materials. The structures, which are oriented east-to-west, are set on a concrete foundation, are of wood frame construction and are clad on the exterior with corrugated metal siding. While the U.S. Army Corps of Engineers (USACE) Seattle District Engineer designed the hangars they were named after Birchwood Airfield near Anchorage, Alaska, which was the site of the first such hangar. This hangar design is distinctive for its use of wooden bowstring trusses, which create the large barrel-shaped roof (Figure 3-2). Several Birchwood hangars were constructed during World War II at U.S. aircraft facilities, for both the Army and the U.S. Department of the Navy (Miller, 2010; Ross, 1969; Eielson Air Force Base, no date; Envirosphere Company, 1988). The use of wooden trusses rather than steel trusses likely was a result of wartime construction material shortages.

Figure 3-2: Barrel-Shaped Roofs of Hangars 2 and 3

Source: Army

Because of the use of wooden trusses, the hangars were categorized as semi-permanent structures. As noted in Section 1.1.3, semi-permanent facilities were intended for use during the war, but had a limited life expectancy afterward. A 1977 Building Information Schedule for facilities at Fort Wainwright advised that without "major work" to extend the building life, the hangars would become unusable in 1983 and recommended replacement at that point in time (Dickinson-Oswald-Walch-Lee Engineers/Maynard NBBJ Alaska, 1977). The fact that no large-scale rehabilitation occurred since the 1977 report indicates these facilities have outlived their expected lifespan by nearly 30 years.

Although no large-scale rehabilitation of either Hangar 2 or Hangar 3 has taken place, significant maintenance efforts, as well as material alterations, have occurred over the years. Because of their construction, semi-permanent buildings are expected to require a moderate to high level of maintenance (Dickinson-Oswald-Walch-Lee Engineers/Maynard NBBJ Alaska, 1977). Activities at Hangars 2 and 3 included, but were not limited to, upgrades to the hangar doors (1960, 1962, and 1979), repairs to roof trusses (1973 and 1984), roof repairs (1950, 1960, 1962, 1963, 1991, and 1996), exterior frame wall repairs (1974), and installation of new fire protection (1978, 1986) and heating systems (1971 and 1983, 1993). Major alterations to the buildings have resulted in the replacement of the original hangar doors (1989), windows (1971, 2001), siding (1974), and roofing materials (1970, 1986). Hangar tenants and office occupants have performed other alterations not noted above. Such alterations include the removal or compromise of inter-column braces on each wall of the main hangar bay; these braces are considered an essential component of the hangars' lateral resistance system (LBG, 2008; Design Alaska and JCA, 2011).

3.3.1.4 Summary of Completed Mitigation Relating to Ladd Field NHL and Cold War Historic District

In the past, mission-related projects have resulted in adverse effects on historic resources at Fort Wainwright, including the Ladd Field NHL and the Cold War Historic District. In each of these instances, the USAG FWA signed Section 106 Memoranda of Agreement (MOAs) and Programmatic Agreements with the Alaska SHPO and other consulting parties. These documents are summarized in Table 3-8.

These mitigation efforts have focused on the maintenance of resources in the Ladd Field NHL and Cold War Historic District, the compilation of documentation on historic properties, and the availability of additional public outreach materials. Traditional mitigation measures, such as architectural and historical documentation, development of historic contexts, development of teaching plans, and public outreach efforts, have been completed for actions affecting the Ladd Field NHL and Cold War Historic District, including actions specifically affecting Hangars 2 and 3. These mitigation measures are outlined in Appendix H.

Table 3-8: Past Fort Wainwright Section 106 Memoranda of Agreement and Programmatic Agreements

Action/Description	Date Signed	Expiration Date
Privatization of military housing	January 1, 2009	2059
Partial replacement of Building 1054 (Motor Pool No. 2, FAI-01255)	May 1, 2009	2014
Aviation stationing	October 29, 2009	2019
Construction of an Americans with Disabilities Access ramp for Building 1051 (Officers' Quarters, FAI-00456)	March 23, 2010	2015
Installation of a heating ventilation and air conditioning system in Building 1555 (Post Headquarters, FAI-00467)	May 17, 2010	2015
Operation, maintenance, and development of the Army Installation at Fort Wainwright and associated training areas	October 14, 2010	2015
Removal of the overhangs and stairwells for Building 3008 (Hangar 3) and Building 3005 (Hangar 2)	November 23, 2011	2017
Renovation to Building 2079 (Company Operations Facility, Radar Shop, and Electronic Maintenance Shop, FAI-01259)	July 25, 2011	2016
Renovation to Building 3004 (Fire Station, FAI-01318)	July 25, 2011	2017

In 1986, Historic American Building Survey Level 1 documentation was completed as mitigation for the ongoing use and management of the Ladd Field NHL. This documentation resulted in the completion of large-format photography and historical data pages for Hangars 2, 3, and 6. The USAG FWA mitigated demolition of the hangars as part of a previous action that resulted in the *Memorandum of Agreement among the U.S. Department of the Army, the Advisory Council on Historic Preservation and the Alaska State Historic Preservation Officer Regarding United States Army Alaska Demolition of Buildings in the Ladd Field National Historic Landmark,* signed on May 23, 2001. All mitigation associated with this MOA was completed, but the MOA was later terminated prior to execution of the demolition of the hangars.

In 2006, the USAG FWA contracted for a Conditions Assessment and Rehabilitation Plans Report (LBG, 2008) to identify potential reuses of Hangars 2 and 3 that would meet current and future anticipated mission needs associated with the projected move of the Aviation Task Force to Fort Wainwright. The report analyzed reuse of the hangars for warm storage or offices, as well as a layaway plan for the hangars, and provided cost estimates for the potential actions. Mitigation for Aviation Stationing in 2009, which proposed new construction in the Ladd Field NHL and potential changes in use for Hangars 2 and 3, resulted in the completion of a Reuse Study for the hangars, as well as an update to the Historic American Building Survey documentation (Army, 2009). The latter project is

ongoing. Between 2010 and 2012, as a part of mitigation for the removal of the shed roof overhangs on Hangars 2 and 3, the Army collected additional photographs and architectural drawings of the overhangs, developed a Maintenance Component of its Integrated Cultural Resources Management Plan, and required the approval from consulting parties if the overhangs were replaced rather than repaired.

The USAG FWA is currently implementing numerous other mitigation actions through agreements with the Alaska SHPO, the ACHP, the NPS, and other consulting parties. Extensive public outreach programs have been developed that highlight the history of Ladd Field and Fort Wainwright, as well as Fort Wainwright's role in the Fairbanks community. The USAG FWA staff has been trained in the management of historic properties to ensure sensitivity with regard to maintenance of historic buildings and the retention of historic fabric. The USAG FWA Cultural Resources staff has developed a driving tour of the installation that highlights the Ladd Field NHL and Cold War Historic District and prepared a tri-fold public interpretation pamphlet on the Cold War Historic District and a public presentation on Cold War history at Fort Wainwright. Design guidelines for new construction in the Ladd Field NHL have been developed to preserve the integrity of the NHL, as well as that of the Cold War Historic District.

As noted above, recent new construction activities in the southern portion of the Ladd Field NHL and Cold War Historic District have resulted in the execution of agreement documents to mitigate the impacts to the historic visual connection between North Post and Hangars 2 and 3. These impacts were mitigated through the 2009 *Programmatic Agreement among the U.S. Department of the Army, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer Regarding Aviation Stationing* (Army, 2009).

3.3.2 Environmental Consequences

As noted in Section 3.3.1, for NEPA purposes, the ROI for impacts is the same as the APE, which includes the Ladd Field NHL and the Cold War Historic District.

Implementing a disposition for Hangars 2 and 3 involves two historic properties: the Ladd Field NHL and the Cold War Historic District. Hangars 2 and 3 possess historic significance for their status as contributing resources to these two historic districts. The hangars are not individually eligible for listing in the National Register because they do not possess sufficient significance independent of their associations with the Ladd Field NHL or the Cold War Historic District. In addition, numerous material alterations have significantly diminished the integrity of the hangars.

The impacts to cultural resources from the Proposed Action are twofold: the loss of the hangars as contributing resources within the Ladd Field NHL and Cold War Historic District, and the impact of the loss of the two contributing resources to the integrity of the two districts. The following analysis, therefore, provides a two-tiered approach to evaluating the impacts of both alternatives.

3.3.2.1 Significance Criteria

For the purposes of assessing the degree of the impacts related to cultural resources, the following thresholds were developed:

- **None**—No measurable impacts are expected to occur.
- **Minor to Moderate (not significant)—**The degree to which activities would affect the Ladd Field NHL or the Cold War Historic District but would not cause either the physical loss of a contributing resource or the reduction in the integrity of the district to such a degree that it would lose its designation as a historic property.
- **Severe (significant)**−Activities that would adversely affect the Ladd Field NHL or the Cold War Historic District by causing either the physical loss of a contributing resource or the reduction in integrity of the district to such a degree that it would lose its designation as a historic property.

All adverse impacts are considered long term because historic properties cannot be recreated.

3.3.2.2 Alternative 1: Demolition of Hangars 2 and 3

Under this alternative, the Army would demolish both hangars. The loss of the hangars as contributing resources to the Ladd Field NHL and the Cold War Historic District would be a severe impact because the two resources would lose their ability to convey their historic significance. Loss of contributing resources within a National Register district generally is significant because the physical fabric of the district is eroded.

Despite the physical loss of Hangars 2 and 3, the impacts to the overall integrity of the Ladd Field NHL and Cold War Historic District would be moderate. Even with the loss of the two hangars, the Ladd Field NHL and Cold War Historic District would continue to contain a large number of original contributing resources and, thus, retain their overall integrity and continue to convey their historical significance. An analysis of impacts to each aspect of integrity for the Ladd Field NHL and Cold War Historic District is summarized in Table 3-9.

Table 3-9: Effects of the Proposed Action on the Integrity of Ladd Field NHL and Cold War Historic District

Aspects of Integrity	Current Degree of Integrity	Is the Integrity Aspect Affected by Loss of Hangars 2 and 3?	Will the Degree of Integrity Change due to the Loss of Hangars 2 and 3?	End State Degree of Integrity After Loss of Hangars 2 and 3	Environmental Impact	
					Alternative 1: Demolition of Hangars 2 and 3	Alternative 2: No Action
Location	High	No	No	High	Moderate / not significant	Moderate / not significant
Setting	High	Yes	No	High	Moderate / not significant	Moderate / not significant
Feeling	High	Yes	No	High	Moderate / not significant	Moderate / not significant
Association	High	Yes	No	High	Moderate / not significant	Moderate / not significant
Materials	Low/ medium[a]	Yes	No	Low/medium	Moderate / not significant	Moderate / not significant
Workmanship	Medium	No	No	Medium	Moderate / not significant	Moderate / not Significant
Design	High	Yes	No	High	Moderate / not significant	Moderate / not significant

[a] As noted in Sections 3.3.1.1 and 3.3.1.2, the Ladd Field NHL retains a low degree of integrity of Materials, while the Cold War Historic District retains a medium level of integrity of Materials.

Location—Under Alternative 1, the Ladd Field NHL and Cold War Historic District degree of integrity for Location would not be affected because the historic districts would not be moved and would remain located where they were originally constructed and where the historic events of cold weather testing, World War II, and the Cold War occurred.

Setting—Alternative 1 would affect two elements of Setting: the visual connections within certain portions of the landmark and the hangars themselves. With the loss of the two hangars, the visual connection between the original North Post area and the hangars would be lost. The loss of the hangars would alter other views looking within or out from the Ladd Field NHL and the Cold War Historic District. By losing the hangars, the Setting of the southwest corner would be changed because it would no longer reflect the familiar World War II-era physical environment produced by the presence of the two large and visually dominate hangars. Although this loss would have a moderate impact on this aspect of integrity, it would not alter the high degree of Setting that the Ladd Field NHL and Cold War Historic District would retain overall. Previous new construction has resulted in past impacts obscuring the views from the North Post to the southwest corner of the districts; however, more significant views

within the Ladd Field NHL and the Cold War Historic District would be retained, including those in the North Post area.

Feeling—The aspect of Feeling is created by the combination of the six other aspects of integrity. Because the loss of the hangars under Alternative 1 would affect Setting, Association, Materials, and Design, it would also have a moderate impact to Feeling within the southwest corner of the Ladd Field NHL and the Cold War Historic District. Even with this impact, a high degree of Feeling would continue to exist within the Ladd Field NHL and the Cold War Historic District because the area that most expresses this aspect of integrity is the North Post.

Association—Alternative 1 would cause a moderate impact to the integrity of Association through the loss of the two hangars. Although the hangars were historically associated with the air depot and Lend-Lease Operations, the Ladd Field NHL would still retain a high degree of Association because the vast majority of activities associated with cold weather testing and the transfer of aircraft to the Russians occurred in North Post. Associations with Cold War operations would remain intact.

Materials—Alternative 1 would cause a moderate impact to the integrity of Materials because of the loss of the wooden bowstring trusses used in the construction of Hangars 2 and 3. This is a material that is only found within these two contributing resources of the Ladd Field NHL and the Cold War Historic District.

Workmanship—Hangars 2 and 3 are a standard design that was used on many military installations in Alaska; therefore, they possess a low degree of Workmanship associated with semi-permanent and temporary wartime construction. Therefore, the loss of the hangars would not affect the integrity of Workmanship within the Ladd Field NHL or the Cold War Historic District.

Design—Alternative 1 would cause a moderate impact to Design as an aspect of integrity because of the loss of contributing resources that exemplify the type of design found during the war effort of World War II. Even with the loss of Hangars 2 and 3, the Ladd Field NHL and Cold War Historic District would continue to retain a high degree of integrity for Design through the planned, formally designed, largely intact North Post.

Although the loss of the hangars would affect five of the seven aspects of integrity, none of the five are affected to a severe (significant) degree (see Table 3-9). The impacts do not diminish the overall degree of any aspect of integrity of the Ladd Field NHL or Cold War Historic District. This analysis is based on the uniqueness of the Hangars 2 and 3 as compared to the rest of the Ladd Field NHL's contributing buildings. The hangars are theatre-of-operations, standard-designed buildings, constructed to support

the war effort. The rest of the contributing buildings within the Ladd Field NHL are located in North Post, and all but one were built just prior to the war. They are permanent structures with a higher degree of integrity of Design, Workmanship, and Materials than Hangars 2 and 3. Setting and Feeling are more apparent in North Post than in the southwest corner where Hangars 2 and 3 are located. Also, the buildings in North Post are more closely associated with the Cold Weather Test Detachment and the Lend-Lease Operations. The hangars are very different resources from the rest of the contributing resources within the Ladd Field NHL and Cold War Historic District, so the integrity held by those North Post-contributing buildings would still be retained and would not be significantly affected by the loss of the hangars. Likewise, the Cold War Historic District retains its integrity and the majority of the contributing resources that are central to that district's historical significance. Even with the loss of Hangars 2 and 3, the Ladd Field NHL and the Cold War Historic District would retain the identity for which they are historically significant. Thus, impacts to these cultural resources as a result of Alternative 1 are expected to be moderate and not significant.

In summary, although Hangars 2 and 3 are contributing resources to the Ladd Field NHL and the Cold War Historic District, the demolition of these two hangars would not affect any of the seven aspects of integrity to the degree that the integrity of the Ladd Field NHL or the Cold War Historic District would change. Both historic districts would retain sufficient integrity to convey their historical significance.

In November 2011, the USAG FWA initiated Section 106 consultation with the Alaska SHPO and other consulting parties because the Proposed Action would result in adverse impacts to the Ladd Field NHL and the Cold War Historic District. Through this consultation, an MOA (Appendix A) was drafted that includes mitigation for these impacts. Because of the large amount of previous mitigation associated with Hangars 2 and 3 (see Section 3.3.1.4), the Army has determined that a reduced amount of additional mitigation is appropriate to compensate for the adverse effects of the Proposed Action. As agreed upon through the Section 106 consultation process, the mitigation would focus on using existing documentation to further goals and objectives for public outreach concerning Fort Wainwright's historic properties, mainly the Ladd Field NHL and the Cold War Historic District.

Details of the mitigation efforts are provided in the MOA (Appendix A), but the stipulations are summarized below.

- Public Outreach—In pursuit of more visibility and appreciation for the Ladd Field NHL, the USAG FWA Cultural Resources staff would be available upon request to present lectures to local Fairbanks groups (military and/or non-military) on Fort Wainwright's World War II history. The staff would engage the public through previously developed publications and

would submit articles on historic preservation efforts at Fort Wainwright in local and state publications, websites, and newspapers. Starting six months after the execution of the MOA and continuing for five years, the USAG FWA would update and seek input from consulting parties on the public outreach projects.

- Re-evaluation of the Ladd Field NHL—The USAG FWA would complete a re-evaluation of the NHL through preparation of a revised draft NHL nomination, including an analysis of cumulative effects on the Ladd Field NHL from previous demolitions and additions. The USAG FWA would submit the appropriate documentation to the NPS Alaska Region, which would then coordinate with the NHL Program in Washington, D.C. If Alternative 1 were selected, the USAG FWA would submit the re-evaluation documentation within five years after demolition of the hangars. If the No Action Alternative were chosen, the USAG FWA would submit the documentation within five years from the execution of the MOA.
- Stewardship of the Ladd Field NHL—With the expected loss of Hangars 2 and 3, the USAG FWA would refocus the efforts of its Public Works staff on effective stewardship through focused and purposeful management of the remaining elements that comprise the NHL. The USAG FWA would use existing and currently planned documentation to further historic preservation objectives and goals including, but not limited to, using the already developed Design Guidelines for the Ladd Field NHL, the educational PowerPoint presentations on historic preservation subjects, and the currently planned, but not yet developed, Historic Buildings Assessment Report. Within one year of completing the Historic Buildings Assessment Report for the Ladd Field NHL, recommendations from the report would be submitted for consideration in the Directorate of Public Works Annual Work Plan.

The USAG FWA Cultural Resources staff is responsible for completing these mitigation efforts and ensuring that the agreed-upon benchmarks are met within the time frames specified in the MOA. If any signatory party to the MOA objects to any mitigation actions proposed or the manner in which the terms of the MOA are implemented, a process for dispute resolution is available to all parties (see Appendix A, MOA, Stipulation IV).

3.3.2.3 Alternative 2: No Action

As noted in Section 2.4.2, the No Action Alternative would likely result in the loss of both hangars through either the catastrophic structural failure of the buildings or possibly by fire. Therefore, the impacts of the No Action Alternative would be the same as the impacts for Alternative 1 (Demolition) because the end state of the hangars (physical loss) is the same; the impacts under the No Action Alternative would just occur at a later time while the impacts from Alternative 1 would be immediate.

The likely structural failure of both of the hangars would be a severe impact because two contributing resources to the Ladd Field NHL and Cold War Historic District would lose their ability to convey their historical significance. However, the No Action Alternative would result in only a moderate impact to the integrity of the Ladd Field NHL and Cold War Historic District. The loss of the hangars would not significantly affect any of the seven aspects of integrity to the degree that the overall integrity of either the Ladd Field NHL or the Cold War Historic District would change (see Table 3-9). Both historic properties would retain sufficient integrity to convey their historical significance.

As agreed upon by the consulting parties in the MOA developed through the Section 106 consultation process, mitigation under the No Action Alternative for the eventual loss of the hangars would be the same as for Alternative 1, except that the documentation for the re-evaluation of the Ladd Field NHL would be submitted to the NPS Alaska Region within five years after the execution of the MOA instead of within five years of the demolition of the hangars. Also similar to Alternative 1, because of the large amount of previous mitigation associated with Hangars 2 and 3, the mitigation measures agreed to as part of the MOA focus on using existing documentation to further public outreach goals concerning Fort Wainwright's historic properties. This mitigation would compensate for the adverse effects of the Proposed Action.

3.4 Hazardous Materials/Hazardous Waste

The potential impacts hazardous materials and hazardous waste can have on human health and the environment largely depend on their types, quantities, toxicities, and associated management practices. There is cause for concern if the use or exposure of these substances violates applicable federal, state, or local laws and/or regulations, including potential non-compliance with Army guidelines and policies for handling hazardous materials and waste.

The following provides a summary of federal, Army, and state laws, regulations, and guidelines related to hazardous materials and hazardous waste at Fort Wainwright.

Federal

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC §9601–9675; 40 CFR §§300–311; 40 CFR §373)—The CERCLA, as amended by the Superfund Amendments and Reauthorization Act, oversees long- and short-term remediation actions for contaminated or potentially contaminated sites by requiring investigation, assessment, and development of remediation programs to contain contamination.

- The Installation Restoration Program (IRP) is the DoD's program designed to identify, characterize, and remediate environmental contamination on military installations. The program was implemented in response to CERCLA requirements to remediate sites that posed a health threat. Section 211 of Superfund Amendments and Reauthorization Act amended CERCLA and established the Defense Environmental Restoration Program that ensures that DoD agencies have the right to conduct their environmental restoration programs.

- Resource Conservation and Recovery Act (RCRA) (42 USC §§6901–6992k and 40 CFR §§260–272 as related to hazardous waste management)—The RCRA requires the systematic tracking of all hazardous waste from cradle-to-grave. This hazardous waste tracking system mandates the collection and retention of key information, including the generator of the waste, how the waste is routed to the receiving facility, a description of the waste, the quantity of the waste, identification of the facility that receives the waste, and other relevant data. The RCRA Corrective Action Program requires responsible parties of active facilities to investigate and clean up hazardous waste releases.
- Toxic Substances Control Act (TSCA) (15 USC §2601 et seq.; 40 CFR §§700–723; 40 CFR §§745–766; 40 CFR §§790–799)—The TSCA addresses concerns regarding chemical substances and mixtures whose manufacturing and use may pose an unreasonable risk of injury, adverse health, or adverse environmental consequences. Toxic chemical substances regulated under TSCA include asbestos, lead, polychlorinated biphenyls (PCBs), and as well as numerous other substances.
- Oil Pollution Act (OPA) (33 USC § 2701 et seq.)—The OPA requires oil storage facilities to develop plans describing how spills or releases would be addressed. Specifically, OPA requires that facilities prepare and implement spill prevention, control, and countermeasures plans and facility response plans. These plans specify how these facilities would assess and respond to spills/releases.
- Pollution Prevention Act (42 United State Code §13101 et seq.)—The Pollution Prevention Act focuses on pollution source(s) reduction and promotes the implementation of new and innovative practices to conserve and protect natural resources. These measures may include, but are not limited to, reducing pollution through process modifications and the use of different, less toxic materials and substances.
- CAA Amendments (Section 112), National Emissions Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR §§61 and 63)—The NESHAP for asbestos (40 CFR §61, Subpart M)

addresses milling, manufacturing, and fabricating operations; demolition and renovation activities; waste disposal issues; active and inactive waste disposal sites; and asbestos conversion processes.

- Occupational Safety and Health Administration (OSHA) Regulations—The OSHA oversees the working conditions for U.S. workers by implementing and managing occupational safety and health standards. The OSHA requirements are designed to protect workers and prevent workplace accidents, injuries, or illnesses and include regulations such as 29 CFR §1926, Safety and Health Regulations for Construction, and applicable subparts of 29 CFR §1910, Occupational Safety and Health Standards.
- U.S. Department of Transportation (USDOT), Transportation Safety Act (49 CFR §§100–185)—The USDOT Hazardous Materials Regulations (49 CFR §171) require the implementation of various protective and preventative measures designed to promote the safe transportation of hazardous materials in commerce.

U.S. Army

- Army Regulation (AR) 200-1—This regulation implements federal, state, and local environmental laws and DoD policies for preserving, protecting, conserving, and restoring the quality of the environment.
- U.S. Army, Alaska (USARAK) Regulation 200-1 Pamphlet—This regulation is required under AR 200-1 and governs all aspects of managing hazardous materials/regulated waste by both military and civilian personnel at all USARAK facilities, including Fort Wainwright. This regulation establishes the policies, responsibilities, and procedures for complying with hazardous materials/regulated waste management regulations established by the DoD, U.S. Army, USARAK, USEPA, USDOT, OSHA, Alaska Department of Environmental Conservation (ADEC), and Alaska Department of Labor.
- Other policies, program, and guidelines that address areas of known or suspected contamination on Fort Wainwright include:
  - 2007 USAG FWA Lead Based Paint Management Plan
  - 2007 USAG FWA Asbestos Management Plan
  - 2011 USAG FWA Spill Prevention, Control, and Countermeasure Plan
  - Environmental Concerns for MILCON Projects: Environmental Concerns for Construction and Renovation Projects and appendices.

- USAG FWA Post-wide Institutional Control Policy for all known or suspected contaminated sites, including restrictions governing site access, construction, and well development or placement as long as hazardous substances remain on site at levels that preclude unrestricted use.

State of Alaska

Title 18, Environmental Conservation, of the Alaska Administrative Code contains the criteria for management, generation, transport, and disposal of hazardous materials and waste. The State of Alaska also oversees the DoD CERCLA sites via implementation of ADEC's regulatory responsibilities of oversight on contaminated site cleanup work to ensure that sites are cleaned up to meet state standards and to protect human health, safety, welfare, and the environment.

3.4.1 Affected Environment

The ROI for hazardous materials and hazardous waste includes the demolition footprint for Hangars 2 and 3 and the aircraft apron construction footprint. The ROI also includes the Fort Wainwright and FNSB landfills because of the disposal of the demolition debris, which would include hazardous materials and hazardous waste.

3.4.1.1 Hazardous Waste Generation, Storage and Disposal

Fort Wainwright is a large-quantity generator of hazardous waste that comes from training, aircraft, vehicles, and maintenance, and generally consists of petroleum, oils, and lubricants (POLs), solvents, paints, and adhesives (CH2M HILL, Inc., 2009). The USAG FWA is registered with the USEPA, per RCRA, with the facility identification number AK6210022426. Current policy stipulates that DoD facilities will use materials that are the most environmentally suitable and least damaging as long as the materials meet the criteria and specifications for a given task. USARAK 200-1 Pamphlet governs all aspects of managing hazardous materials/regulated waste by both military and civilian personnel, at all USARAK facilities, including Fort Wainwright. The Army recycles metal, fuel, oil, batteries and antifreeze (CH2M HILL, Inc., 2009).

3.4.1.2 Site and Soil Contamination

Fort Wainwright is on the National Priorities List (NPL) under CERCLA. The NPL specifies national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The Fort Wainwright NPL site comprises

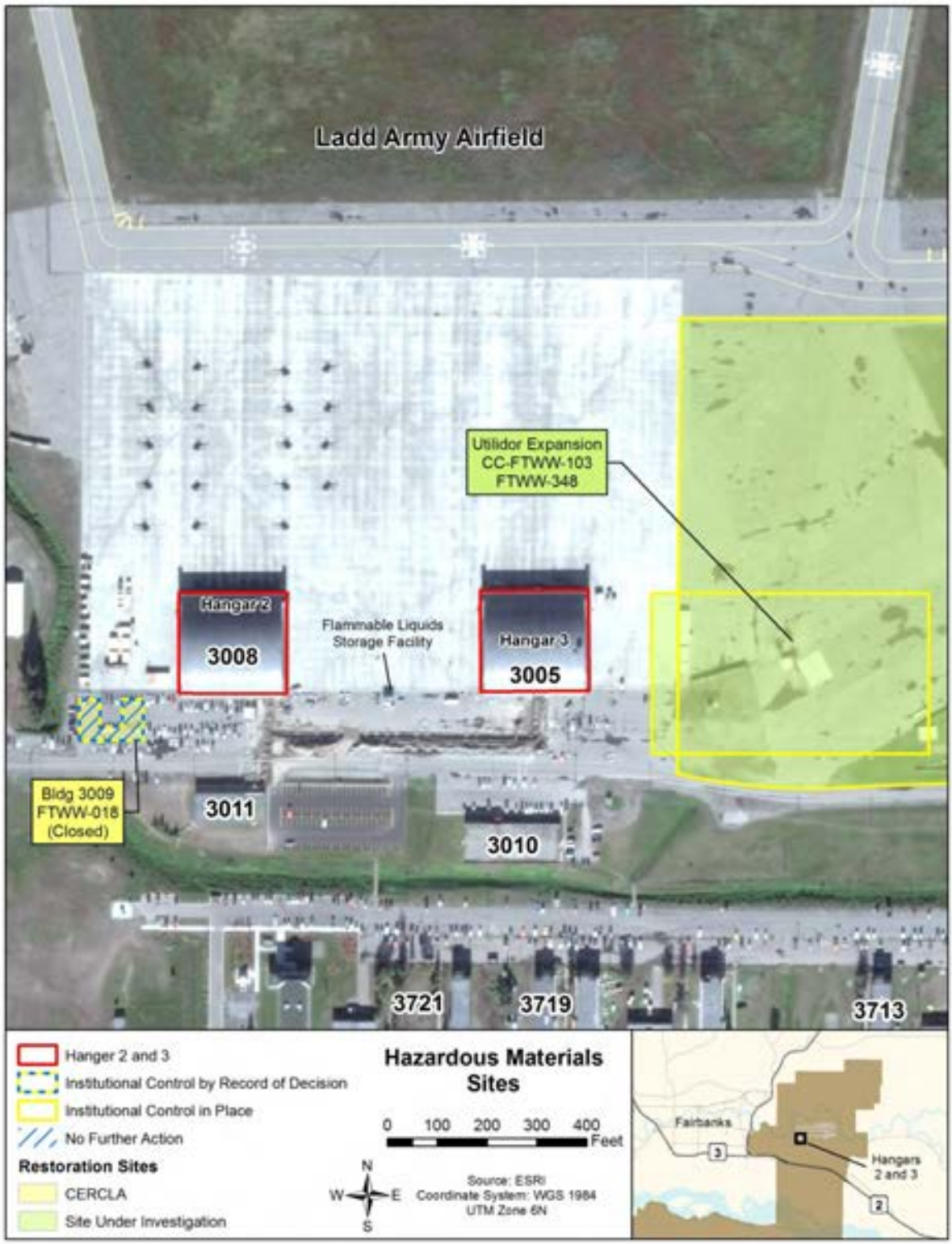
six Operable Units (USAG FWA, 2011b). Twelve source areas have been identified within these six Operable Units, and several have been further divided into sub-areas. A Federal Facility Agreement between the USEPA, the ADEC, and the Army sets deadlines, objectives, responsibilities, and procedural frameworks for implementing an IRP.

Hangars 2 and 3 are not within an IRP site; however, an area adjacent to Hangar 3 within the proposed boundaries of Aviation Task Force Military Construction, Army, Site Number CC-FTW-103 is in the process of being designated as an IRP site (Fish, 2012). As shown in Figure 3-3, the area is approximately 124 feet east of Hangar 3 (USAG FWA, 2012a). A preliminary site evaluation conducted in 2008 found contamination exceeding ADEC criteria in subsurface soils. During follow-up investigations in 2010, concentrations of trichloroethene, vinyl chloride, 1,3,5-trimethylbenzene, 1,3,5-trimethylbenzene, diesel range organic compounds, gasoline range organic compounds, benzo(a)pyrene, benzo(b)fluroanthene, dibenzo(a,h)anthracene, and dieldrin were detected above the ADEC cleanup criteria in soil samples collected from 1 to 10 feet below ground surface (Fish, 2012). Concentrations of contaminants in groundwater did not exceed the ADEC groundwater cleanup levels. In 2011, approximately 660 cubic yards of contaminated soil was removed from the site. One soil sample with results of diesel range organic compounds (645 milligrams per kilograms [mg/kg]) exceeding the ADEC cleanup criteria remains in the area at 4 feet below ground surface due to the proximity to a buried utility corridor. No other sample results above ADEC cleanup criteria remain in the area.

Another IRP site, FTWW-018 (location of former Building 3009), is approximately 74 feet from the southwest corner of Hangar 2. The area was the location of Building 3009, a temporary building used as a wood shop that was demolished in 2001 (CH2M HILL, Inc., 2009). The site received a no further action determination from the USEPA and is now closed with Institutional Controls in place (USAG FWA, 2012a).

As discussed, Hangars 2 and 3 are not within an IRP site (CH2M HILL, Inc., 2009); however, based on the hangars' historical use for aircraft maintenance during World War II, it is assumed that spills from the day-to-day activities of the previous functions are on the floors of the buildings, the parking lot, and in the soil in the area. The majority of these undocumented, historical spills are assumed to be of grade 115/145 aviation gasoline, which contained significant amounts of tetra-ethyl lead (Griffin, 2013a). The other substance spilled is assumed to be of grade 80/87 aviation gasoline (also contained tetra-ethyl lead) that was used in ground support equipment and military vehicles. In addition, it is assumed that

Figure 3-3: Installation Restoration Sites Adjacent to Hangars 2 and 3



there were releases of POLs, such as hydraulic oils, lubricants, greases, and also solvents, used in aircraft maintenance (Griffin, 2013a). Although chemical sampling has not been conducted in the project area itself, chemical samples were collected in association with other projects by the USACE and Jacobs Engineering in the southeastern area adjacent to the project site. Those samplings showed exceedances of ADEC cleanup criteria for trichloroethene, chloroform, and diesel range organic compounds (Jacobs, 2012).

The USAG FWA has documented records of more recent spills from 1996 to the present (Griffin, 2013b). These recent spills, including JP-4 and JP-8 (jet fuels), antifreeze, hydraulic fluids, engine oil, and mercury, were cleaned up per the Alaska State standards, which are more stringent than federal standards (Griffin, 2013c).

Between Hangars 2 and 3, there is a small open, flammable liquids storage facility that the Army would demolish under Alternative 1. The facility was historically used for hazardous (flammable liquids) material storage by aviation units assigned to the hangars. It is currently unused and empty except for a small amount of refuse (Gray, 2013). Additionally, the Army would remove two above-ground installed oil water separators associated with the hangars.

The USAG FWA actively manages use of hazardous materials and generation of hazardous waste through the development and implementation of plans to eliminate or reduce products that pose environmental risk. Any project that involves excavation or movement of soils must include field screening for petroleum products (plus any other identified contaminants). Soils exhibiting readings less than 20 parts per million (ppm) are considered clean and may be reused on site or disposed of in accordance with the scope of work for the specific project.

3.4.1.3 Asbestos Containing Building Materials, Lead-based Paint, and Other Hazardous Materials

In October 2011, the USACE conducted Hazardous, Toxic, Radiological Waste (HTRW) assessment surveys of Hangars 2 and 3 (USACE, 2012a,b). The surveys constituted of an inspection of the buildings to identify and assess all accessible asbestos containing building materials (ACBM), lead-based paint (LBP), and other hazardous materials at the hangars. The results of the surveys were provided for demolition bidding purposes only. The following sections present brief summaries of the findings from the 2011 HTRW assessment surveys and other previous surveys.

Asbestos Containing Building Materials

Asbestos is a naturally occurring fibrous mineral, and the most common types of asbestos are chrysotile (white) and amosite (brown/off-white). Because it is fire-resistant, resists many chemicals, and is an excellent insulator, asbestos was added to a variety of building materials and other products and was routinely used in buildings constructed prior to 1980. These materials included pipe insulation, floor tiles, cement siding, and wall/ceiling coverings. As long as the ACBM remains non-friable and in good condition, it is not considered a health risk. Because of the age of Hangars 2 and 3, they are sources for ACBM and present health and safety concerns for construction and building maintenance personnel when performing maintenance actions that could disturb this substance.

The 2011 HTRW assessment survey found asbestos in wallboard joint compound; sheet flooring; 9-inch x 9-inch dark brown, light brown, and white floor tiles; and floor tile mastic in Hangar 3. The survey in Hangar 2 found asbestos in floor tile mastic. It should be noted that the although every reasonable attempt was made to locate all ACBM present in the areas surveyed, areas that were inaccessible were addressed via extrapolation of conditions in accessible building space and a review of building plans, specifications, or other building documents provided to USACE (USACE, 2012a,b). Inaccessible areas included but were not limited to: within walls, within fire doors, enclosed pipe/duct chases, inside mechanical equipment, behind inaccessible doors, inside utilidors, and underground utilities.

During a 1997 asbestos survey, the Army found chrysotile in the black mastic (heavy adhesive used on tile flooring) in the tile floor of Hangar 2 on the second floor; chrysotile, or white asbestos, is the most commonly encountered form of asbestos (NTL, 1997). Chrysotile asbestos fibers were also found in pipe insulation and pipe paint chips in the mechanical room of Hangar 2, during a subsequent 1998 asbestos survey (NTL, 1998). Chrysotile was found in Hangar 3 during the following asbestos surveys: 1991 for suspected asbestos in the all of all levels (USAG FWA, 1991) and 2003 in the black mastic in the tile floor (NTL, 2003).

The USAG FWA manages asbestos in accordance with its 2007 Asbestos Management Plan, which was developed in accordance with AR 200-1, to reduce the exposure of occupants and workers and to ensure compliance with all federal laws, including NESHAP asbestos requirements and Army regulations regarding asbestos management to identify, abate, and dispose of ACBM (USAG FWA, 2007a). According to the Asbestos Management Plan, any ACBM will be handled in accordance with applicable USEPA and OSHA regulations by a licensed contractor. Per the requirements, the USAG FWA will provide a written "Notification of Demolition and Renovation" to the USEPA Region 10

Asbestos Coordinator 10 working days prior to beginning any work on an asbestos project. Currently, ACBM resulting from renovation and demolition projects is disposed of at the Fort Wainwright landfill, which is anticipated to close in September 2015. After the Fort Wainwright landfill closes, ACBM will be disposed of at the FNSB landfill (Adams, 2013).

Lead and Lead-based Paint

LBP was used as coatings and finishes before the hazards associated with lead accumulation in children were identified. Regulating of LBP began in 1978, long after Hangars 2 and 3 were constructed; therefore, it is likely that the hangars contain LBP and pose health and safety concerns for construction and building maintenance personnel. Activities such as sanding, scraping, manual demolition, abrasive blasting, cutting, torching, or welding of LBP are trigger tasks that can result in significant worker and community exposures. The federal definition of LBP is paint with greater than or equal to 1 milligram per square centimeter (mg/cm^2) lead (USEPA, 2000).

During the 2011 HTRW assessment surveys, the USAG FWA did not conduct LBP testing; however, the technical memoranda for the surveys state that due to the age of the structure and type of construction, it is assumed that all painted surfaces contain lead at some level. Other components of Buildings 3005 and 3008 that may contain lead are lead plumbing vents on the roof.

During a 2010 LBP survey, the USAG FWA found various levels of LBP in Hangar 3, ranging from 0.9 mg/cm^2 to 9.9 mg/cm^2 (USAG FWA, 2010c). Although a LBP survey has not been conducted for Hangar 2, it is assumed that the building also contains similar levels of LBP because of the similar construction and renovation time frames as Hangar 3.

Army guidance for LBP in facilities requires that each installation must develop and implement a management plan for identifying LBP, risk assessment, worker safety, worker training and certification, and identification, evaluation, management, and abatement of LBP hazards in accordance with AR 420-70, *Facilities Engineering, Building and Structures*. The USAG FWA's 2007 Lead Based Paint Management Plan (USAG FWA, 2007b) provides guidance for LBP removal for Fort Wainwright and requires that LBP removal be conducted in accordance with applicable TSCA, OSHA and Army regulations. All demolition or renovation projects are subject to the requirements of this plan.

Other Hazardous Materials and Hazardous Wastes

The 2011 HTRW assessment surveys noted other miscellaneous hazardous materials and hazardous waste present in Hangars 2 and 3 (USACE, 2012a,b), including:

- PCBs and lead in light ballasts in the fluorescent light fixtures located throughout the buildings (magnetic ballasts can contain PCBs in both the start-up capacitor and the asphalt in which the electronics are embedded, and electronic ballasts contain lead solder)
- Mercury in the fluorescent lamps and thermostats located throughout the buildings
- Glycol in the heating systems
- Small amounts of radioisotopes in lights and smoke detectors
- Lead-acids batteries located in the emergency light fixtures as well as the public address system in the buildings
- Chlorofluorocarbon refrigerants in drinking fountains and window air conditioner units
- Dry chemical fire suppression systems in hazardous waste accumulation chambers
- Miscellaneous containers of fuel, oil, cleaning solvents
- Oil-water separators and associated piping

Other hazardous waste in the buildings includes aircraft exhaust emissions coated on the existing insulation on the underside (interior surface) of roof decks surfaces (LBG, 2008). Additionally, there is a potential for mold, mildew and bird guano in the buildings (USACE, 2012c). Inhalation of these materials could present a hazard to workers.

3.4.2 Environmental Consequences

3.4.2.1 Significance Criteria

For the purposes of assessing the significance of impacts related to hazardous materials and hazardous waste and other concerns, the following impact thresholds were developed:

- **None**—No measurable impacts are expected to occur.
- **Minor to Moderate (not significant)**—The degree to which activities increase the potential for environmental or human exposure to hazardous materials and hazardous waste.
- **Severe (significant)**—Activities that violate applicable regulations or that seriously threaten or cause exposure to hazardous materials or hazardous waste capable of causing imminent and substantial endangerment to human health and the environment would represent a significant impact.

3.4.2.2 Alternative 1: Demolition of Hangars 2 and 3

Under Alternative 1, the USAG FWA would demolish Hangars 2 and 3 and their supporting infrastructure and convert the building footprints into a concrete airfield apron. The USAG FWA would dispose of the demolished hangar material either through recycling/reuse or in a landfill. As discussed in Section 2.4.1, under Alternative 1, Demolition of Hangars 2 and 3, demolition would involve removal of the hangars, totaling 24,016 cubic yards of non-hazardous debris; demolition of existing and abandoned utilities not belonging to Doyon Utilities, totaling approximately 2,680 linear feet; demolition of existing privately owned vehicle parking areas, lighting, head bolt outlets, and power source, encompassing an area of approximately 3.3 acres; and demolition of the concrete building slabs and foundations within 5 feet of the building, to a depth of 8 inches, totaling approximately 2,075 cubic yards of non-hazardous debris. In addition, demolition of the small, open, flammable liquids storage facility located between Hangars 2 and 3 would result in approximately 91 cubic yards of non-hazardous debris.

Demolition activities would be conducted per all applicable federal, state, Army, and installation regulations, guidelines and management plans. The USAG FWA, through its contract, would provide the demolition and construction contractor with the requirements for handling, removing, and disposing of existing hazardous materials/hazardous waste in the buildings; and the requirements for the potential use of hazardous materials and generation of hazardous waste that would result during the demolition and construction activities. As part of the contract, the contractor would be required to prepare and submit a Hazardous Materials Abatement Work Plan to be approved by the USAG FWA for waste containment, removal, and disposal of the hazardous materials and hazardous waste.

Under Alternative 1, the USAG FWA would demolish and remove materials within the hangars that have been determined as containing ACBM. The USACE prepared building demolition estimate states that Hangars 2 and 3 would each generate approximately 100 cubic yards of ACBM (USACE, 2012d). Appropriately licensed and trained contractors would conduct the demolition and removal of the hangars in compliance with applicable federal and state regulations, and in adherence to the USAG FWA's management plans. Per the USAG FWA's Asbestos Management Plan, a licensed contractor would be responsible for handling any ACBM in accordance with applicable USEPA and OSHA regulations. Per NESHAP asbestos requirements, the USAG FWA would provide a written "Notification of Demolition and Renovation" to the USEPA Region 10 Asbestos Coordinator 10 working days prior to beginning any work on an asbestos project. The ACBM would be transported, in compliance with all applicable regulations, to the Fort Wainwright landfill for disposal. The toxicity characteristic leaching procedure—a soil sample extraction method for chemical analysis employed as

an analytical method to simulate leaching through a landfill—would be required during demolition for disposal purposes. This testing methodology is used to determine if the waste is a regulated waste or construction and demolition (C&D) waste.

Because of the historic functions of Hangars 2 and 3 and the contaminants found in adjacent areas, it is assumed that floors (concrete) and the soils in the area contain POLs, trichloroethene, chloroform, and diesel range organic compounds. Under Alternative 1, the USAG FWA would also demolish the small, vacant, open flammable liquids storage facility. Because of the historic use of the area as storage for hazardous materials, contaminants are likely to be present in the ground in the area. During ground-disturbing activities, the excavated soil must be screened for potential contaminants to include field screening for petroleum products (plus any other identified contaminants). Soils exhibiting readings of 20 ppm or higher must be handled per requirements stated in the USAG FWA's *Environmental Concerns for MILCON Projects, Appendix A, Handling / Management of Contaminated Soil* (USAG FWA, 2011c).

Because of the age of the structure and type of construction, it is assumed that all painted surfaces in the hangars contain lead at some level. Although no testing was performed during the 2011 HTRW assessment survey, a 2010 LBP survey of Hangar 3 found various levels of lead that exceeded the USEPA threshold for the substance in paint, and it is assumed that Hangar 2 has similar levels of LBP. Per the USAG FWA Lead based Paint Management Plan, appropriately licensed and trained contractors would conduct LBP removal in accordance with applicable OSHA, ADEC, and Army regulations. These regulations require the contractor to provide appropriate engineering controls, medical surveillance, personal protective equipment in lieu of a negative exposure assessment, air monitoring, and training necessary to work in lead areas. LBP waste from buildings that are demolished would require disposal in accordance with the USEPA, Army, ADEC, and USAG FWA regulations and requirements and would be disposed of at the FNSB Landfill. LBP waste would require a toxicity characteristic leaching procedure sample during the demolition to determine whether the waste is a regulated waste or a C&D waste.

The building demolition estimates prepared by the USACE anticipate that Hangars 2 and 3 would each generate approximately 500 cubic yards of hazardous materials and hazardous waste, including the LBP waste that would be disposed of at the FNSB landfill. The other hazardous materials and hazardous waste include:

- Equipment that contains PCBs
- Mercury

- Glycol
- Radioisotopes
- Lead-acids batteries
- Chlorofluorocarbon refrigerants
- Dry chemical fire suppression systems and containers of fuel, oil, cleaning solvents
- Oil-water separators and associated piping

Hazardous waste also includes the interior surface of roof decks surfaces coated with aircraft exhaust emissions. To ensure the protection of workers and the environment, the hazardous materials and hazardous waste would be removed, transported, and disposed of in compliance with applicable federal, state, Army, and USAG FWA regulations, as well as FNSB landfill requirements.

In the event that mold, mildew, and bird guano are found in the buildings, the contractor would be required to perform abatement, debris removal, and demolition activities in a manner that prevents exposure of workers to airborne pathogens and biological matter. The contractor would be required to properly remove the contaminants prior to building demolition and would be responsible for the lawful collection, characterization, and disposal of all biological matter on surfaces in accordance with the USEPA regulations. Prior to the demolition of Hangars 2 and 3, the USAG FWA would conduct appropriate surveys to further verify and confirm the presence and extent of the hazardous materials and hazardous waste.

The proposed demolition and concrete airfield apron construction is not expected to affect the contaminated area adjacent to Hangar 3 because these activities would be conducted within the footprint of the existing hangar and would not be conducted within the area of known contamination.

If additional hazardous materials and hazardous waste that have not been identified are encountered during demolition activities and if those substances could be hazardous to human health upon disturbance, the contractor would be required to stop that portion of work and notify the Contracting Officer immediately. The USAG FWA would then determine in a timely manner if the material is hazardous. If the material is not hazardous or poses no danger, the USAG FWA would direct the contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the USAG FWA would issue an appropriate modification to the contract. While no known underground storage tanks are known to exist on the project site, if any underground storage tanks are discovered during demolition, their removal would be conducted in compliance with federal and state regulations, and any contaminated soils would be remediated.

Under Alternative 1, only minor impacts are anticipated from contaminated soils, hazardous materials, and hazardous waste because the demolition, disposal, and construction activities would be conducted in compliance with federal, state, and Army regulations and with adherence to the USAG FWA's specific guidance. The proper removal and disposal would result in beneficial impacts in the long term because the risk of potential exposure to the environment would be avoided. Beyond adherence to the plans and regulations discussed above, no additional mitigation has been identified or is needed.

3.4.2.3 Alternative 2: No Action

The No Action Alternative would result in moderate impacts related to contaminated soils, hazardous materials, and hazardous waste. Although the USAG FWA would continue to follow its current procedures regarding the management of hazardous materials and waste, the continued degradation of the hangars would result in an increased risk of exposure to the environment from contaminated soils, hazardous materials, and hazardous waste. These types of exposures could occur if the buildings deteriorate to the point where the interiors are exposed to the elements or the buildings collapse. Because the USAG FWA would still be required to comply with applicable regulations for removal and disposal of the hazardous materials, hazardous waste, LBP, asbestos, and PCBs, the degraded buildings would increase the safety risk for the workers involved.

If the buildings collapse, the focused removal and disposal of the hazardous materials and hazardous waste would be difficult and could result in contaminating demolition debris that otherwise could be diverted from the landfills. This scenario could potentially contaminate a worst-case scenario of approximately 12,008 cubic yards of C&D debris per hangar, which is projected to go to the FNSB landfill. The 24,016 cubic yards of contaminated C&D debris for the two hangars would be in addition to the approximately 1,200 cubic yards of the ACBM and other hazardous materials and hazardous waste (100 cubic yards and 500 cubic yards, respectively, for each hangar) projected to be going to the landfill as separate waste streams. Under this scenario, approximately 25,216 cubic yards of C&D debris could require disposal as ACBM or hazardous materials and hazardous waste, and has the potential to impact the FNSB landfill capacity. However, the impacts to the FNSB landfill capacity is anticipated to be minor because in fiscal year (FY) 11, approximately 298 tons per day of refuse material was taken to the landfill, and the landfill is projected to be operational until the year 2086.

3.5 Safety

3.5.1 Affected Environment

The ROI for safety includes Hangars 2 and 3,the area immediately surrounding them within 100 feet, and the haul routes to and from the Fort Wainwright and FNSB landfills.

As discussed in Section 1.1.3, Hangars 2 and 3 are semi-permanent buildings constructed in 1943–1944. When constructed, the hangars had an estimated life cycle of 40 years, and in 1983, they required a full-scale rehabilitation. This rehabilitation did not occur because funding was focused on mission essential programs and other needs of the installation. With the limited maintenance funding, numerous requirements for funding, and discussions of demolition, rehabilitation for Hangars 2 and 3 was deferred in favor of other critical facilities (Design Alaska and JCA, 2012).

Although no large-scale rehabilitation of the structures has taken place, over the life of the hangars maintenance and repair projects have occurred as needed including, but not limited to, upgrades to the hangar doors, repairs to roof trusses, roof repairs, and replacement of the original hangar doors, windows, siding, and roofing materials. During many of the interior door and window alterations and additions, load bearing structural members were severed to accommodate these changes. Because no full-scale rehabilitation has occurred over the last 70 years, which is almost double the estimated life-cycle of the buildings, the hangars exhibit serious structural, electrical, and safety deficiencies, which are presented in detail in the 2008 Condition Assessment and Rehabilitation Plans for Hangars 2 and 3 (LBG, 2008). Deficiencies include non-compliance with contemporary building codes and life and safety conditions, including anti-terrorism/force protection (AT/FP) measures, structural deficiencies and damage in the roof trusses and framing, seismic deficiencies in the columns and roof framing, and ventilation inadequacies throughout both buildings. These deficiencies affect the general health and welfare of the buildings' occupants, as well as the general well-being of equipment kept in the hangars.

The structural integrity of the wooden trusses has deteriorated with age and exposure to the harsh Alaskan environmental conditions, and they currently meet nine of the top eleven reasons why bowstring wooden trusses fail (Provenghi, 2009; Webb, 2011b). Structural assessments indicate that most wooden framing members display weaknesses resulting from cracking and splitting (see Figures 1-5 through 1-8 in Section 1.1.3). As a result, the hangars' ceiling trusses cannot support helicopter maintenance equipment, their roofs do not meet building codes for snow load, and their infrastructure no longer meets the standards of a functional work space. They were recorded as "non-functional" in Fort Wainwright's real property records in 2011. A geotechnical investigation and analysis resulted in

the determination that both hangars are founded on soils that are susceptible to liquefaction during a seismic event (LBG, 2008).

Additionally, on February 17, 2011, an electrical fire in Hangar 2 severely damaged the west end of the hangar roof decking and the roof trusses (see Figures 1-8 through 1-11 in Section 1.1.3). Subsequent structural investigations indicated that Hangar 2 lacked structural integrity, and in March 2011, it was found unsafe for occupancy (Webb, 2011a). A structural assessment of Hangar 3 was also performed and the same structural deficiencies existing in Hangar 2 were found to exist in Hangar 3, resulting in it being found unsafe for occupancy in April 2011 (Webb, 2011b). As a result, all activities performed in Hangars 2 and 3 were immediately relocated to other facilities located along the airfield. In late 2012, the water pipes in Hangar 2 froze and burst, rendering the fire suppression system within the side offices inoperable, and current funding levels prevent this system from being repaired. Currently, Hangars 2 and 3 are unoccupied and lack the structural integrity needed to house any military functions.

3.5.2 Environmental Consequences

3.5.2.1 Significance Criteria

The following criteria have been used to assess impacts to safety of the buildings' occupants and the general well-being of equipment in the buildings:

- **None**—No measurable impacts to temporary or permanent safety.
- **Minor to Moderate (not significant)**—The degree to which activities increase the potential for human exposure to safety concerns.
- **Severe (significant)**—Activities that violate applicable regulations and policies capable of causing imminent and substantial human safety concerns and resulting in unacceptable risk would represent a significant impact.

3.5.2.2 Alternative 1: Demolition of Hangars 2 and 3

Under Alternative 1, demolition activities would pose safety hazards because of the structural degradation and the presence of the hazardous materials/waste and other concerns, such as POLs, ACBM, LBP, PCBs, and others, as discussed in Section 3.4.1. However, the USAG FWA would conduct both the demolition activities and the construction of the concrete airfield apron in compliance with the applicable regulations and guidance, including 29 CFR §1926, *Safety and Health Regulations for Construction*, and applicable subparts of 29 CFR §1910, *Occupational Safety and Health Standards*, and would ensure the safety and health of the workers during construction. The demolition contractor

would be required to prepare and submit a Health and Safety Plan. Prior to the demolition activities, appropriate surveys would be conducted to further verify and confirm the presence and extent of hazardous materials and contaminants. As discussed in 3.4.2.2, under Alternative 1, the USAG FWA would remove, transport, and dispose of hazardous materials/waste and other contaminants, in compliance with federal, state, and Army regulations and in adherence to the installation's specific guidance. Prior to mobilizing to the site, the demolition contractor would be required to erect temporary project safety fencing around the entire perimeter of the project site and would be responsible for maintaining the integrity of the perimeter fence, access into and out of the job site, and unauthorized entry into the facilities themselves. As a result, Alternative 1 would result in only minor safety impacts during the demolition of the hangars and construction of the airfield concrete apron. By following applicable regulations for packing and hauling hazardous materials and abiding by posted speed limits and road weight limits, the USAG FWA's contractor would ensure that safety would not be compromised when hauling the debris along the truck routes to the landfills. Once the hangars are demolished and the airfield concrete apron is completed, Alternative 1 would result in long-term, beneficial effects on safety because the hazardous materials would be removed and properly disposed of and there would no longer be a risk of structural failure. Under Alternative 1, mitigation measures would not be required because the USAG FWA's contractor would comply with the federal, state, and Army regulations to avoid adverse effects on safety. The contractor's adherence to the USAG FWA's specific guidance for demolition and construction activities at Fort Wainwright and for the removal and disposal of contaminated soils, hazardous materials, and hazardous waste would also serve to avoid adverse effects; therefore, no mitigation measures have been identified or would be needed.

3.5.2.3 Alternative 2: No Action

The No Action Alternative would result in long-term, moderate impacts on safety. Under the No Action Alternative, Hangars 2 and 3 would continue to remain unoccupied because they have both been found to be unsafe for occupancy. As major systems in the hangars continue to fail (similar to the water pipes freezing in Hangar 2 in late 2012, which rendered the fire suppression system in the side offices non-functional), these systems would not be replaced or repaired. The structural integrity of the hangars would continue to deteriorate, and it is assumed that the hangars would eventually collapse. Structural failure would increase the moderate risk of exposure to building debris and hazardous materials and waste, including ACBM, LBP, PCBs, and others in the environment immediately adjacent to the hangars. As the buildings continue to deteriorate over time, the No Action Alternative would not address the buildings' vulnerability to soil liquefaction during a seismic event.

Maintenance and upkeep of the hangars, such as security patrols and pest control would continue based on current funding levels and other maintenance priorities at the installation; however, the continued deterioration of the hangars presents safety concerns for any person entering them, and in some cases, safety concerns prevent maintenance from being performed (USAG FWA, 2011a). These concerns represent long-term, moderate impacts to the safety of the workers and could require additional measures to ensure their safety while performing maintenance work.

Once the buildings collapse, removal and transport of the demolition debris, including hazardous materials and hazardous waste would be conducted in compliance with the applicable regulations and Fort Wainwright and FNSB landfill requirements (if the buildings collapse after September 2015 then all materials would be disposed of in the FNSB landfill as the Fort Wainwright landfill will be closing at that time and no longer able to accept ACBM). Prior to mobilizing to the site, the contractor would be required to erect temporary project safety fencing around the entire perimeter of the project sites and would be responsible for maintaining the integrity of the perimeter fence, access into and out of the job site, and unauthorized entry into the facilities themselves. Additionally, by following applicable regulations for packing and hauling hazardous materials and abiding by posted speed limits and road weight limits, the USAG FWA's contractor would ensure that safety would not be compromised when hauling the debris along the truck routes to the landfills. As a result, once the buildings collapse, the No Action Alternative would result in only minor impact to safety during the removal, transport, and disposal of the demolition debris and construction of the airfield concrete apron. By following applicable regulations for packing and hauling hazardous materials and abiding by posted speed limits and road weight limits, there would be no impacts to safety along the truck routes to the landfills. Once the hangars are demolished and the airfield concrete apron is completed, the No Action Alternative would result in long-term, beneficial impacts to safety.

3.6 Environmental Justice and Protection of Children

On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Executive Order 12898 directs agencies to address environmental and human health conditions in minority and low-income communities so as to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. The general purposes of this executive order are as follows:

- Focus the attention of federal agencies on human health and environmental conditions in minority communities and low-income communities with the goal of achieving environmental justice.
- Foster nondiscrimination in federal programs that substantially affect human health or the environment.
- Improve data collection efforts on the impacts of decisions that affect minority communities and low-income communities and encourage more public participation in federal decision making by ensuring documents are easily accessible (e.g., in multiple languages and readily available).

As defined by the *Environmental Justice Guidance Under NEPA* (CEQ, 1997), "minority populations" include persons who identify themselves as Asian or Pacific Islander, American Indian or Alaskan Native, Black (not of Hispanic origin), or Hispanic. Race refers to census respondents' self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the U.S. Census Bureau's statistical poverty threshold, which is based on income and family size. The U.S. Census Bureau defines a "poverty area" as a census tract with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level. A census tract is a small geographic subdivision of a county and typically contains between 2,500 and 8,000 persons (U.S. Department of Commerce, 2000).

Executive Order 13045, *Protection of Children from Environmental Health and Safety Risks*, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. This executive order, dated April 21, 1997, further requires federal agencies to ensure that their policies, programs, activities, and standards address these disproportionate risks. Executive Order 13045 defines environmental health and safety risks as "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink and use for recreation, the soil we live on and the products we use or are exposed to)."

3.6.1 Affected Environment

The ROI for the assessment of potential impacts to Environmental Justice populations and the Protection of Children is defined as Hangars 2 and 3 and areas in the immediate vicinity (100 feet), as well as the truck haul routes to and from the Fort Wainwright and FNSB landfills. The Proposed Action would occur on Fort Wainwright, Alaska, which is located within the City of Fairbanks, Alaska, and within proximity to North Pole, Alaska, both of which are located within Fairbanks North Star Borough, Alaska. Population statistics for areas outside of Fort Wainwright and the ROI are included below because these are either areas that the ROI is partially located within or are shown for comparison.

3.6.1.1 Environmental Justice

Race, ethnicity, household income, and poverty data are presented in Table 3-10 for the five census tracts that reside within proximity to or encompass the ROI (see Figure 3-4). For the purposes of comparison, all information in Table 3-10 is presented from the American Community Survey 2006–2010 estimates. Among the five census tracts, Census Tracts 1 and 3 had the highest percentage of their populations living below the poverty level at approximately 15 percent. In comparison, the borough as whole had 7.6 percent, while the state had 9.5 percent of its population living below the poverty threshold.

In 2010, Census Tracts 1 and 10 had 26 and 21 percent of their populations, respectively, identify themselves as American Indian or Alaska Native. These percentages were at least 10 percent higher than these same ethnicity/race percentages at either the state of Alaska or FNSB level. Census Tracts 3 and 11 had 16 and 13 percent of their populations, respectively, identify themselves as African Americans. These percentages were at least 10 percent higher than these same ethnicity/race percentages at either the state of Alaska or FNSB level. Therefore, Census Tracts 1, 3, 10, and 11 are identified as potential Minority Areas since the percentage of the American Indian or Native Alaskan or African American minority populations is meaningfully greater than the population of these same ethnicities/races at either the state of Alaska or FNSB level. Environmental Justice Impacts to these communities are determined based on the degree of impact that a proposed action has on each census tract and whether or not a community has been identified as a Minority or Poverty Area (U.S. Department of Commerce, 2010a,b). These impacts will be described in the Environmental Consequences section below.

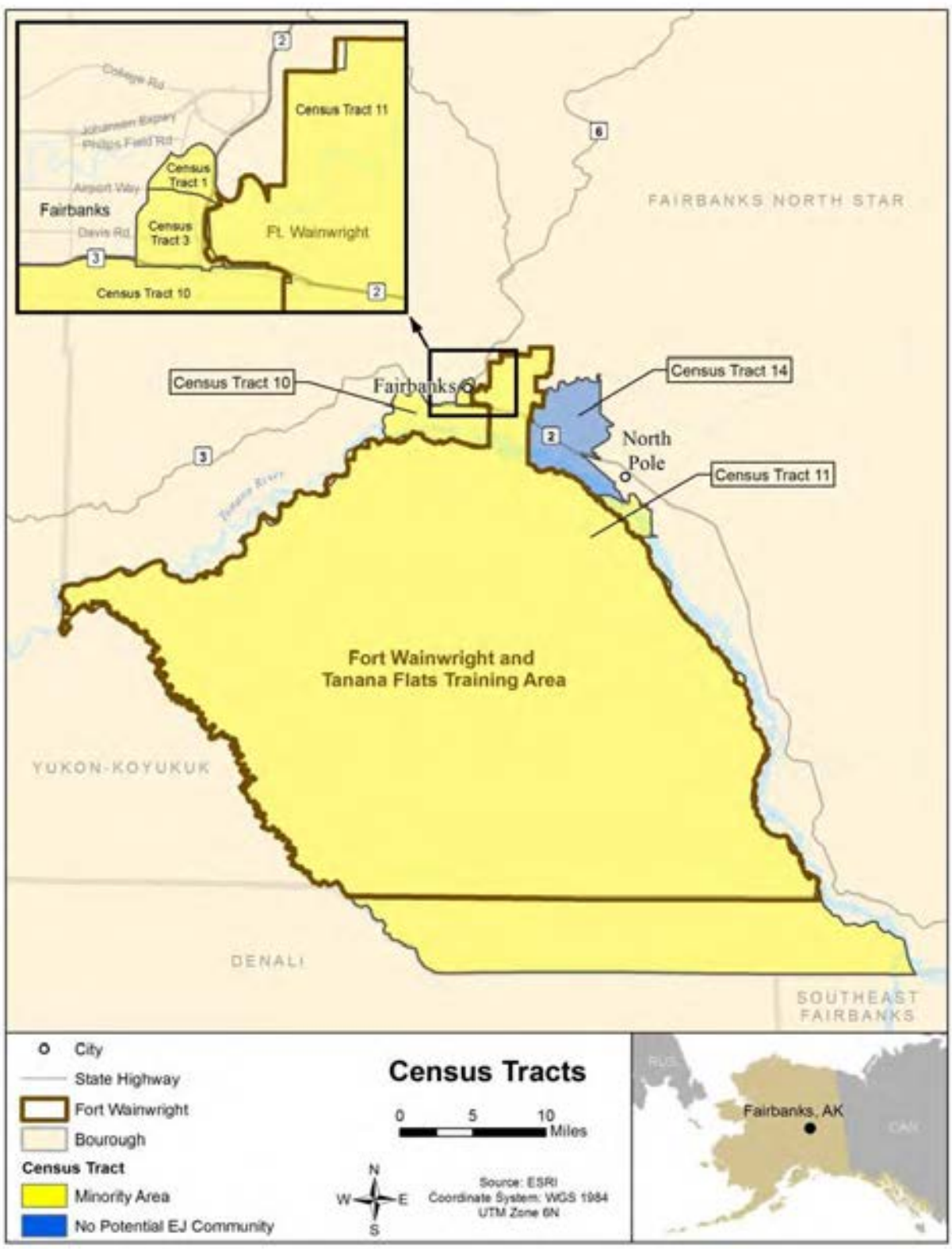
Table 3-10: Race, Ethnicity, Income, and Poverty Data for Geographic Areas, 2010

Geography	Total Pop.	Race/Ethnicity					Median Household Income (2010$)	Percent of Population Below Poverty Level
		White	Afr. Am.	Am. Indian or Alaska Native	Asian, Native Hawaiian, Some Other Race or Two or More Races	Hispanic or Latino		
State of Alaska[a]	691,189	64%	3%	14%	8%	6%	$66,521	9.5
FNSB	94,439	74%	4%	7%	6%	6%	$66,598	7.6
Census Tract 1, (FNSB)	2,025	62%	3%	26%	5%	4%	$43,229	15.7
Census Tract 3, (FNSB)	4,687	50%	16%	17%	12%	4%	$51,897	15.4
Census Tract 10, (FNSB)	1,296	74%	0%	21%	2%	3%	$48,931	14
Census Tract 11 – Fort Wainwright's Tract, (FNSB)	6,775	64%	13%	2%	7%	14%	$55,900	9.1
Census Tract 14, (FNSB)	6,816	87%	0%	3%	6%	4%	$82,329	5

Source: U.S. Department of Commerce (2010a,b)

[a] While data for population, race, ethnicity, income and poverty are presented with Census 2010 data above, the latest data available for the census tract level are available from the American Community Survey 2006–2010 estimates. American Community Survey 2006–2010 estimates for the Borough and state are presented in this table for comparison against the census tracts.

Figure 3-4: Census Tracts Surrounding Ft. Wainwright, Alaska



3.6.1.2 Protection of Children

Several facilities on Fort Wainwright are centers (i.e., schools, a daycare facility, and a recreation center) in which a large number of children gather at some point during an average week; however, none of these facilities are located within 100 feet of the hangars, and only two of these facilities—the Outdoor Recreation Center, located northwest of the intersection of Glass Drive and Gaffney Road, and the Child Development Center I, located southeast of the intersection of 600th Street and Gaffney Road—are within 200 to 300 feet of the haul route that demolition trucks would take between the project site and the FNSB landfill. In addition to these two facilities, children reside with their families in on-post housing, use sidewalks, and possibly recreate within 200 to 300 feet of the proposed demolition truck haul routes. Off-post, no facilities that host a large number of children during an average week are known to be located within 200 to 300 feet of the truck haul route, but some children may reside in off-post homes or use sidewalks and recreation areas that are located within 200 to 300 feet of the proposed truck haul routes.

3.6.2 Environmental Consequences

3.6.2.1 Significance Criteria

An environmental justice impact is considered to have occurred if the impact from an alternative disproportionately and adversely affects a minority or low-income community. An impact to a population of children is considered to have occurred if the impact from an alternative disproportionately and adversely affects a population of children. The following are impact thresholds for environmental justice impacts and impacts to children:

- **None**—No activities would have an adverse and disproportionate impact on minorities, low-income communities, or populations of children.
- **Minor to Moderate (not significant)—**The degree to which activities disproportionately impact minorities or low-income individuals, or result in health and safety risks for children.
- **Severe (significant)—**Activities that adversely pose disproportionate adverse impacts to minorities or low-income individuals or cause health or safety risks for children would represent a significant impact.

3.6.2.2 Alternative 1: Demolition of Hangars 2 and 3

Under this alternative, Hangars 2 and 3 would be demolished and concrete would be added to the building footprints for future use as an airfield apron. It is estimated to take approximately six months to complete the demolition of these hangars and would occur during the summer of 2014.

Environmental Justice

As noted in Table 3-10 in Section 3.6.1 above, the median household income in 2010 for FNSB was higher than the median household income for the state and the nation. In 2010, approximately 7.6 percent of the population in the borough lived below the poverty threshold, which is lower than the state and national figures. As described in Section 3.6.1, four of the census tracts that the ROI is located within have relatively high minority populations. However, it is not anticipated that this project would have an adverse or disproportionate impact on these populations because there is no housing located close to Hangar 2 or Hangar 3. While it is anticipated that trucks hauling demolition debris to the landfills would have a short-term, minor impact on traffic volume on the haul route roads, the roads to be traveled are separated from the surrounding communities by trees, berms, landscaping buffers, or fencing for most of their length, and these routes are currently heavily travelled by trucks. Therefore, no environmental justice impacts are anticipated as a result of this alternative.

Protection of Children

Although the southern exterior sides of Hangars 2 and 3 are open to the post, the hangars are currently kept locked as a result of their condemned status. During the demolition of these buildings, the demolition contractor would be required to erect temporary project safety fencing around the entire perimeter of the project site. Consequently, it is anticipated that these hangars would not pose harm to children on the installation either before or during their demolition.

As described in Section 3.6.1.2, two on-post facilities—the Outdoor Recreation Center and the Child Development Center I—have relatively high proportions of children and are located adjacent to the potential route that demolition truck traffic would use to haul waste off-post to the FNSB landfill. The potential routes for demolition trucks traveling both on- and off-post also pass within 200 to 300 feet of some homes, recreation areas, and sidewalks that children could live in or use. However, the demolition trucks would travel past these facilities, homes, recreation areas, and sidewalks only temporarily during the demolition period, and these routes are already heavily travelled by trucks. Truck operators would be expected to comply with all laws and regulations that govern the transportation of demolition and hazardous material debris and to follow posted speed limits and other roadway safety measures. As a result, adverse and disproportionate impacts on children either on or off the installation are not expected

to occur under Alternative 1. Because there would be no environmental justice or protection of children impacts under Alternative 1, no mitigation measures have been identified or are needed.

3.6.2.3 Alternative 2: No Action

Impacts resulting from the No Action Alternative would be similar to those described for Alternative 1; however, most of these impacts would be expected to occur later in time. Under the No Action Alternative, with no major rehabilitation effort or repair or replacement of major systems as they fail, the hangars would continue to deteriorate, and it is assumed that the hangars would eventually collapse from a catastrophic structural failure. It is not expected that a fence would be installed around Hangars 2 and 3 under this alternative; however, the hangars would remain locked. Because children do not generally pass by these hangars, it is not expected that these structures would pose a risk to them. Furthermore, no Family Housing is located within 100 feet of the hangars; therefore, no environmental justice impacts or impacts to children are anticipated to occur as a result of housing being located in proximity to the hangars. When the hangars do eventually collapse on their own, the USAG FWA would remove the debris and dispose of it in the Fort Wainwright and FNSB landfills (if they collapse after September 2015 then all material would be disposed of in the FNSB landfill as the Fort Wainwright landfill will be closing on that date and would no longer be able to accept ACBM). For the same reasons as described under Alternative 1, disposing of the demolition debris and construction of the airfield concrete apron in the footprint of the buildings and supporting infrastructure would result in no environmental justice impacts, and there would be no adverse or disproportionate impacts on children either on or off Fort Wainwright. Because there would be no environmental justice impacts under the No Action Alternative, no mitigation measures have been identified or are needed.

3.7 Sustainability

The Army recognizes that training, equipping, and supporting Army operations requires land, resources and people and that rising global demand for scarce resources, increasing regional unrest, and the effects of climate change are just some of the trends that will affect our future environment. Incorporating sustainability considerations into Army operations, acquisitions, and installations will help meet current and future mission requirements worldwide, reduce resource demand and enhance the natural environment, safeguard human health and improve the quality of life, preserve current and future operational flexibility, and enhance mission capability and resilience (Army, 2004).

The term “sustainability” has many meanings in a number of different contexts. For the purpose of this Proposed Action at Fort Wainwright, sustainability is focused on energy use, recycling/reuse, and

embodied energy.[21] As part of the overarching Army definition of sustainability, as well as applicability to Fort Wainwright and this project, the following goals and strategies have been adopted to achieve sustainable operations, installations, systems, and communities.

- Strengthen Army operations—The Army will employ sustainable practices, such as water conservation, and fuel and energy efficiency, to minimize environmental impacts and increase logistical efficiencies.
- Minimize impacts and total ownership costs—The Army will integrate sustainability into all activities by using the International Organization for Standardization 14001, *Environmental Management System Standard*, as a framework to improve performance and compliance and will leverage its purchasing power to favor environmentally sustainable products that lower total ownership costs and employ other tools to continually improve effectiveness.

In addition, to the sustainability directive as developed by the Army, a number of federal statutes and executive orders promote sustainable development and include:

- The Energy Independence and Security Act of 2007 requires a reduction of fossil fuel use in new or renovated federal buildings by 55 percent by FY 10 and 100 percent by FY 30.
- Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, set a DoD goal to reduce Scope 1 and 2 GHGs by 34 percent by FY 20 and to reduce Scope 3 GHGs by 13.5 percent by FY 20. It also requires that at least 50 percent of solid waste and 50 percent of C&D waste by FY 15 is diverted from landfills (i.e., either recycled or reused). The executive order also requires that all new buildings that enter design in FY 20 and after achieve net zero energy by FY 30.
- Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, states that all federal buildings will reduce energy consumption by 3 percent per year to total of 30 percent by FY 15, based on the FY 03 baseline as well as requiring 50 percent of required annual renewable energy consumed from "new" renewable sources.

3.7.1 Affected Environment

Based on the relatively small scale of the Proposed Action, the ROI for sustainability is defined as Hangars 2 and 3.

[21] Embodied energy is the energy that is required to extract, process, manufacture, transport, and install building materials.

Current policies at Fort Wainwright fostering sustainability objectives include partnering with the local community to provide for water reuse and increased efficiency in solid waste recycling (Hall, 2011); requiring a solid waste management plan that details strategies for waste minimization and for C&D debris to either be salvaged, reused, or recycled in line with specific goals for diversion stated in Executive Order 13514 (USAEC, 2010); and requiring all new construction and renovations to attain Leadership in Energy and Environmental Design (LEED) Silver certification for green building (Siftar, 2012).

Hangars 2 and 3 were built between 1943 and 1944 during World War II prior to the development and focus of modern Army and DoD sustainability initiatives. The hangars feature closed bowstring wood trusses located 57 feet above an open hangar concrete floor, which is approximately 152 feet by 200 feet, and bare timber columns. Two-story side wings that are 25 feet wide are located on the north and south sides of the hangar floor. The hangars have a barrel vault shaped roof and four stairwell towers at each corner of the building. Major repairs and maintenance work that have occurred to the buildings since construction and that have had the potential to impact the sustainability of the hangars by making them more efficient from a heating point of view include (Design Alaska and JCA, 2012):

- Upgrades to hardware and weather-stripping to hangar doors (1960, 1974, and 1977)
- Roof repairs, including asphalt shingles at east-west overhangs and metal fascias (1968, 1991 and 1998) and repairs to roof trusses (1987)
- Window replacement and the implementation of hot water base board heating at wing windows (1971)
- Replacement of roof/ceiling insulation in wings (1977)
- Replacement of exterior wall insulation (R-19) and a vapor barrier (1985)
- Replacement of heating system in hangar bays to glycol hydronic and new unit heaters (1993)

Typically, it is thought that the most sustainable building is one that has already been constructed because the embodied energy required to construct a building has already taken place, the site has been cleared, all building materials have been used, and all construction debris and procedures have taken place (Preservation Green Lab, 2011). This does not mean that a building that has been constructed is operationally sustainable. Buildings may be inefficient in energy or water use or may no longer serve their intended functional purpose. Although the hangars are sustainable according to the viewpoint that they have already been constructed, their overall sustainability has been greatly minimized by the fact that they have outlived their intended lifespan, are inefficient to heat, and are unoccupied due to their lack of structural integrity (Potschin and Haines-Young, no date).

While the hangars are currently unoccupied, they continue to be heated to minimize the amount of snow on the roofs. The hangars do not meet current snow load codes and a buildup of snow on the roofs could result in a structural collapse. Despite the previous repairs and maintenance described above, based on the deteriorated state of the hangars and the lack of insulation, both hangars are inefficient to heat and lack the necessary equipment to help facilitate the melting of snow. Heat used at the hangars is provided by a coal-fired power plant located on Fort Wainwright. Current coal use to heat and provide electricity to the hangars is approximately 1,427 tons for Hangar 2 and 1,556 tons for Hangar 3 annually (approximately 1 percent of the fossil fuel use at Fort Wainwright) at an approximate annual cost of $350,000 per hangar. By comparison, Hangar 6 at Fort Wainwright, which is similar in size to Hangars 2 and 3, requires approximately 1,867 tons of coal annually for heat and electricity. However, Hangar 6 is fully functional, and the majority of the 1,867 tons of coal is used for electricity because Hangar 6 requires twice the amount of electricity compared to Hangar 2 or Hangar 3 and requires less heating. Even though Hangar 6 has higher costs and usage, the costs and usage for Hangars 2 and 3 are substantially high for buildings that are unoccupied, thus minimizing the current sustainability of Hangars 2 and 3.

Sustainability also includes demolition activities. Sustainable reuse includes efforts to reduce the environmental impact by reusing and recycling materials generated during building demolition. Typical C&D materials include wood, drywall, cardboard, brick, concrete, metal, insulation, and glass. Preliminary estimates from the USEPA show that the nation generated more than 160 million tons of building-related C&D materials in 2003. Nearly 53 percent of all building-related C&D materials is the result of demolition activities, 38 percent of the materials is produced by renovation activities, while approximately 9 percent is the result of construction. Of the total amount of building-related C&D materials generated, the USEPA estimates that only 40 percent was reused, recycled, or sent to waste-to-energy facilities, while the remaining 60 percent of the materials was sent to C&D landfills (USEPA, 2009). Previous waste diversion goals at Fort Wainwright have set goals that C&D projects shall generate at least 50 percent less waste into landfills (American Mechanical Inc., 2011). For previous projects at Fort Wainwright, the main materials disposed of in a landfill include concrete, metals, asphalt, cardboard, and some wood, all of which were deemed unusable and/or non-recyclable (American Mechanical Inc., 2011).

3.7.2 Environmental Consequences

3.7.2.1 Significance Criteria

The following categories are used in assessing potential impacts to sustainability resulting from the Proposed Action.

- **None**—No measureable impacts are expected to occur.
- **Minor to Moderate (not significant)**—The degree to which activities impact economic, environmental, and social resources.
- **Severe (significant)**—Activities that create obvious and substantial impacts to sustainability with the potential to threaten economic, environmental, and social resources.

3.7.2.2 Alternative 1: Demolition of Hangars 2 and 3

Under Alternative 1, the USAG FWA would demolish Hangar 2 and Hangar 3 and supporting infrastructure, including the empty, small, open, flammable liquids storage facility located between Hangars 2 and 3. Demolition would involve removal of the buildings, building slabs, and the foundations and disposal of the materials in the Fort Wainwright landfill (ACBM only) and the FNSB landfill (all other materials). Upon completion of demolition activities, concrete would be added to the building and infrastructure footprints to maintain consistency with the adjacent airfield land use designation as a parking apron. The existing asphalt-paved parking lot would be removed. Infiltration areas, swales, and culverts would be installed as needed, to include the addition of topsoil and seeding, creating a beneficial impact to stormwater management and, in turn, sustainable development at Fort Wainwright. In compliance with the Army's goal of not exceeding 50 percent of C&D materials being disposed of in a landfill, non-hazardous materials would be diverted from the FNSB landfill to the greatest extent possible through the reuse or recycling of materials. The remaining demolition debris would be disposed of in the landfill in accordance with a solid waste management plan developed by the contractor for the project.

Materials from the demolition of Hangars 2 and 3 would include: timber; drywall; metals; concrete; asphalt; and functional building items, such as doors, door frames, windows, structural systems, millwork, fixtures, and other materials. These materials would be disposed of in accordance with an established solid waste management plan to be developed by the contractor for the hangars, and all solid waste disposed of in landfills would be minimized. All existing timber at the site, minus the timber severely burnt from fire, could be recycled. Recycling could include re-milling the wood into

flooring, or chipping/grinding to make engineered board, boiler fuel, or mulch. Plywood, oriented strand board, and particle board may be reused at Fort Wainwright as long as it is not a permanent feature of the facility (i.e., formwork) because it is not structurally sound and otherwise may be recycled. All drywall could be removed and recycled into new drywall, used in cement, or used for agriculture purposes to provide a source of sulfur and calcium to crops and assist in the composting process. Common metals available for recycling include steel, aluminum, and copper. Local metal scrap yards or recyclers that accept metal materials are typically accessible and willing to take these materials. Metals could be melted down and reformed into metal products in the well-established market for metals. Upon the removal of the reinforcement bar, concrete could be recycled with future uses including road base, general fill, pavement aggregate, and drainage media. Asphalt shingles and pavement can be ground and reused in future asphalt mixes. Functional building items (i.e., bathroom fixtures) could be recycled or salvaged in their current use with a number of markets currently existing. In the event that most of the applicable materials stemming from demolition are recycled or reused, long-term, beneficial impacts would occur.

It is expected that some materials would not be appropriate for reuse and would likely need to be disposed of in a landfill; however, based on the relatively small scale of these materials compared to all other materials transported daily to the FNSB landfill (298 tons per day), the impacts would be short term and minor. All demolition activities would be carried out according to protocols stipulated in a solid waste management plan that identifies waste minimization, collection, and disposal methods; waste streams, and locations for solid waste diversion/disposal including clearing debris and C&D waste that is diverted (salvaged, reused, or recycled). The construction of a concrete pad over the previous building footprints would require new construction materials and construction emissions. However, based on the relatively small scale of the project, it is expected that the materials needed and emissions from construction equipment would not be substantial, resulting in short-term, minor impacts.

With the demolition of Hangars 2 and 3, all existing utility demands for both hangars would no longer be required, reducing the use of fossil fuels for heat and electricity production. Because neither of the hangars is functional, the fossil fuels currently used for heating are being wasted because the hangars do not serve a functional military mission. The amount of fossil fuels used to provide energy for the two hangars when compared to Fort Wainwright as a whole is relatively small, approximately one percent. The demolition of both hangars would allow the "wasted" energy to be transferred to buildings that serve the military mission at Fort Wainwright and would be financially sustainable by leading to a cost

savings of $700,000, which is currently being expended into the two condemned hangars, resulting in long-term, beneficial impacts.

Demolition of the hangars would result in the loss of their remaining embodied energy; however, because the hangars have surpassed their intended lifespan, are no longer useable, and do not support the military mission at Fort Wainwright, demolition of the hangars would not be completely contrary to the embodied energy concept and would result in only short-term, minor impacts.

Overall, impacts to sustainability as a result of Alternative 1 would be short term, and minor because of the materials that could not be reused or recycled, the new materials and emissions that would be generated from construction of the airfield apron, and the loss of embodied energy from demolition. Reduced energy consumption, cost savings, and the ability to recycle materials not currently being used would result in long-term, beneficial impacts to sustainability as a result of this alternative. Because impacts are only temporary and minor, no mitigation measures for sustainability are identified or needed under Alternative 1.

3.7.2.3 Alternative 2: No Action

Under the No Action Alternative, Hangars 2 and 3 would remain in their current condition, serving no active military function. Existing energy demand requirements stemming from electricity and heating to prevent snow buildup on the roofs would continue, and costs and energy demand are anticipated to be similar to those currently being experienced: $350,000 per hangar and approximately 3,000 tons of coal combined annually (approximately 1 percent of the fossil fuel use at Fort Wainwright). No large-scale rehabilitation efforts for the hangars would occur, and as major systems fail they would not be repaired or replaced (similar to what happened in late 2012 when the water pipes in Hangar 2 froze and burst rendering the fire suppression system in the side offices inoperable); as a result the structural integrity of the hangars would continue to deteriorate, and it is assumed that the hangars would eventually collapse.

The fact that the hangars would remain intact for some duration of time does attribute some short-term, beneficial impacts to sustainability because no demolition debris would be generated, no construction emissions would occur, and no new materials would be needed. These short-term, beneficial impacts though would be offset by the fact that the non-functionality of the hangars requires that activities set forth for the hangars be carried out at other locations, resulting in minor impacts to sustainability because Hangars 2 and 3 do not serve a functional purpose. In addition, the inefficiencies of the hangars results in high annual utility costs and subsequent emissions, resulting in minor impacts.

As mentioned above, it is assumed that under the No Action Alternative that the hangars would eventually collapse due to their compromised structural integrity and their continued deterioration. In the event of a complete failure, it would be more difficult to properly remediate hazardous materials due to contamination of the debris by ACBM, LBP, and other hazardous materials in the buildings. As a result, the amount of building materials that could be reused or recycled would be greatly reduced, resulting in moderate impacts to sustainability.

Overall, when examining the Army sustainability directive, applicable federal statues and executive orders, and the USAG FWA's policies and objectives for Fort Wainwright, the current status and operation of these building is not sustainable. Both Hangars 2 and 3 have outlived their expected lifespan, are currently condemned, and continue to consume energy through heating from fossil fuels. This results in a drain on sustainability efforts, as well as the inability for the Army to fully support its mission at Fort Wainwright. While it is typically thought that a built building is more sustainable due to the energy and materials required to construct a building already being used, in this instance that is not the case, as the hangars are condemned, have outlived their expected lifespan and purpose, and will likely collapse on their own in due time.

3.8 Transportation

This section describes the baseline conditions for the transportation system serving Fort Wainwright, including regional and local roadways and parking. It also evaluates the potential environmental impacts on the transportation system from implementing the alternatives. The baseline conditions for air transportation, rail transportation, public transportation, and pedestrian/bicycle facilities are not discussed because these elements would not be affected by the Proposed Action.

3.8.1 Affected Environment

The ROI for transportation includes the roadways connecting Hangars 2 and 3 to the gates serving the Main Post and the proposed truck haul routes between the hangars and the Fort Wainwright and FNSB landfills. In 2006, USKH conducted a traffic study on Fort Wainwright's Main Post. Because the projected population growth for the installation has increased since the 2006 traffic study, the *Six-Year Transportation Plan Update, April 2009* (USKH, 2009) was prepared to examine and evaluate year 2015 traffic conditions, assuming the full-projected occupancy and development of the installation. The study included an analysis of current (2009) AM and PM peak hour traffic and safety conditions, and an analysis of forecasted traffic conditions.

3.8.1.1 Roadways and Traffic Volumes

Hangars 2 and 3 are located north of Montgomery Road between Meridian Road and Santiago Avenue on the southwest side of Ladd Army Airfield on Fort Wainwright. State and local roads, railway main lines and spurs, Ladd Airfield, and Fairbanks International Airport provide access to Fort Wainwright Main Post.

Area Roadways

The major state and local roads serving Fairbanks and the Main Post include Richardson Highway, George Parks Highway, and Steese Highway (Figure 3-5). Within Fairbanks, Airport Way is the main east-west arterial accessing the Main Post of the installation. At its eastern terminus, Airport Way enters the cantonment area through the Main Gate, becoming Gaffney Road. On the west side of Fairbanks, Airport Way connects to the Fairbanks International Airport and the George Parks Highway. College Road and the Johansen Expressway/Geist Road also provide major east-west access to the Main Post through the northern part of Fairbanks. Traffic levels on Airport Way, Richardson Highway, and Steese Highway are generally moderate. However, noticeably heavier traffic during peak hours and the summer tourist season can cause congestion at major arterial intersections. Peak hours for Fairbanks (and Fort Wainwright) are typically 7:00 AM to 8:00 AM, and 4:30 PM to 5:30 PM (USACE, 2008).

The off-post roads likely to be used by trucks hauling demolition debris to the FNSB landfill from the project site include Richardson Highway, Old Richardson Highway, Easy Street, and Badger Road.

Main Post Roadways

Main roads within the Main Post are shown on Figure 3-6. The Main Post contains approximately 30 miles of paved roads and 10 miles of gravel/clay unpaved roads. All of the paved and unpaved roads serving the Main Post are in good condition (USACE, 2008). Gravel roads serve facilities, such as the landfill, tank farm, northeast ammunition storage area, and training areas.

Three gates provide access to the Main Post, including the Main Gate on Gaffney Road, the terminus of Airport Way; Trainor Gate, located about one mile north of the Main Gate off Steese Highway; and Badger Gate to the east, on Badger Road, just north of Richardson Highway (USACE, 2008). The roads on Fort Wainwright that would likely be used by trucks hauling demolition debris to the FNSB landfill include Gaffney, Meridian, and Montgomery Roads, while the roads to get to the Fort Wainwright landfill include, Montgomery, Meridian, and River Roads. The *Six-Year Transportation Plan Update* examines traffic conditions for the primary roadways and key intersections within the installation.

Figure 3-5: Fairbanks, Alaska Regional Transportation

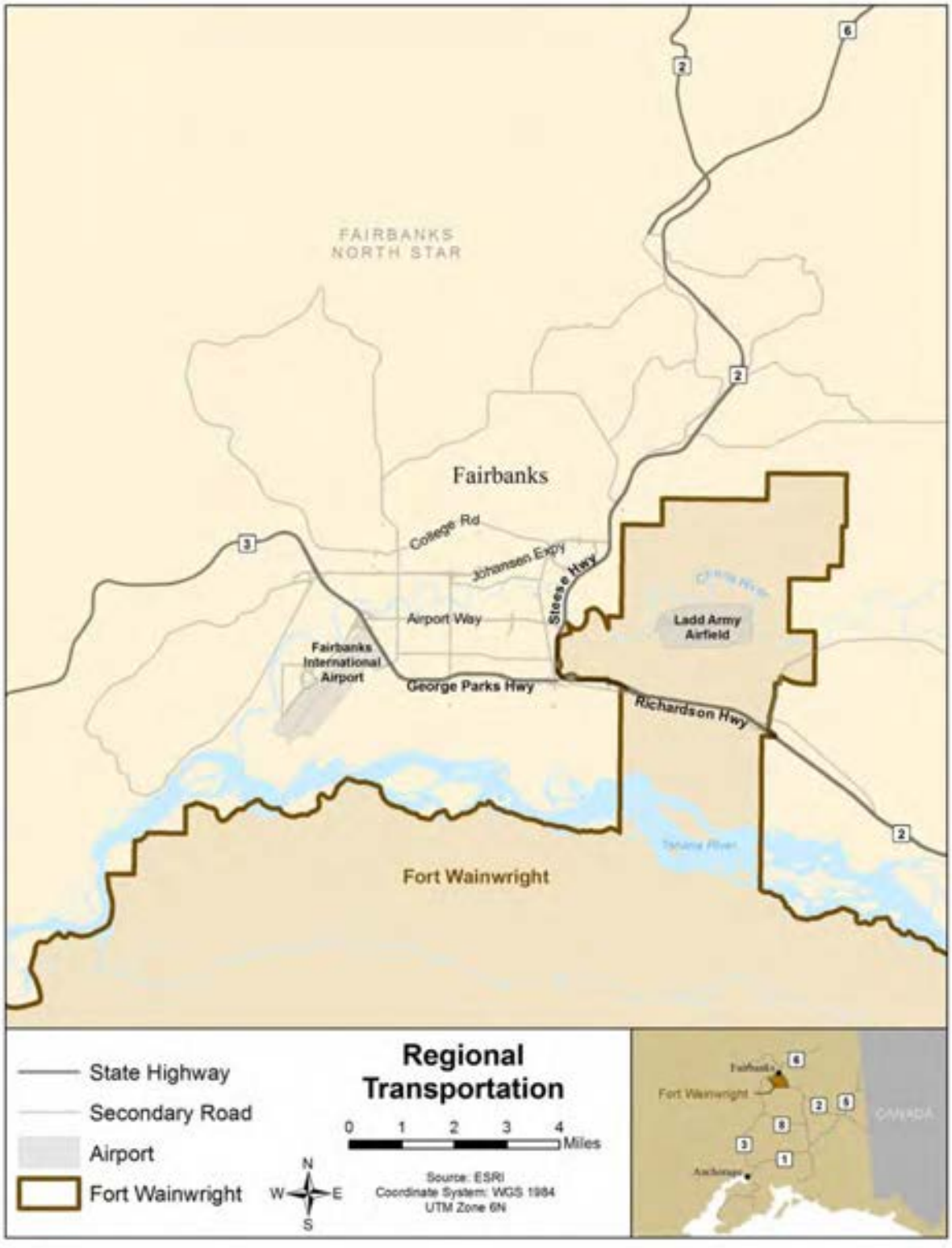


Figure 3-6: Fort Wainwright Main Post Transportation

These roadways support the majority of commuter traffic (work and school-related) on Fort Wainwright, with the remaining secondary roadways supporting shorter trips within the installation, i.e., local traffic. Gaffney Road, Montgomery Road, Neely Road, Rhineland Avenue, Trainor Gate Road, and Alder Avenue are the primary east-west roadways evaluated in the Transportation Plan. The primary north-south routes evaluated in this plan are 599th Street, 600th Street, 9th Street, Whidden Road, Meridian Road, River Road, Santiago Avenue, Luzon Avenue, Apple Street, Marks Road, 102nd Street, 6th Street, 103rd Street, and Ketcham Road.

Gaffney Road, which is the principal arterial on the installation, extends from the Main Gate to Marks Road at the eastern portion of Fort Wainwright. The road is composed of a four-lane section to Marks Road for directional traffic. The road then changes name to Ketcham Road, which is two lanes and continues east to the Badger Road Gate entrance. Posted speeds range between 20 and 35 miles per hour (mph). A separate pedestrian trail runs along the north side of Gaffney Road between the Trainor Gate and Apple Street. Lane widths average about 11 feet along the roadway.

The remaining roadways addressed in the study consist mainly of two-lane roadways with either adjacent paved shoulders or sidewalks. Posted speeds range from 20 mph (in school zones) to 25 mph with Alder Avenue being the only two-lane roadway with a posted speed limit of 35 mph. The average lane width along study roadways is 10 to 11 feet. Because the ROI is focused on the proposed truck haul routes between the hangars and the Fort Wainwright and FNSB landfills, Table 3-11 lists the Main Post ROI study intersection control types.

Table 3-11: Main Post ROI Study Intersection Control Types

Intersection	Type of Control
Gaffney Road at 599th Street	TWSC
Gaffney Road at 600th Street	Signal
Gaffney Road at 602nd Street	Signal
Gaffney Road at 9th Street	Signal
Gaffney Road at 10th Street	TWSC
Gaffney Road at Whidden Road	TWSC
Gaffney Road at River Road/Meridian Road	Signal
Montgomery Road at Meridian Road	Signal
Montgomery Road at Santiago Avenue	TWSC
Montgomery Road at Luzon Avenue	TWSC
Montgomery Road at Ketcham Road	TWSC
River Road at Trainor Gate Road	Signal

Source: USKH (2009); Notes: ROI – region of influence, TWSC – two-way, STOP-controlled

Traffic Volumes

Traffic volumes were developed for 25 key intersections using 2005 and 2007 traffic count data as part of the *Six-Year Transportation Plan Update* (USKH, 2009). The highest traffic volumes recorded on the installation is on Gaffney Road west of Meridian Road. Traffic volumes range from 1,000 to 1,700 vehicles during the PM peak hour. The peak direction on Gaffney Road is eastbound entering the installation in the morning and westbound exiting the installation during the evening. Montgomery Road, Neely Road, Santiago Road, and Meridian Road carry more than 400 vehicles during the AM and PM peak hours, depending on the location. The remaining study roadways carry fewer than 400 vehicles during the AM and PM peak hours (USKH, 2009).

Traffic Analysis

To estimate how well the existing infrastructure accommodates the current and future traffic demand, a traffic analysis was conducted as part of the *Six-Year Transportation Plan Update* (USKH, 2009). The capacity analysis methodology is based on the concepts and procedures in the Highway Capacity Manual (Transportation Research Board, 2000) published by the Transportation Research Board, National Research Council. The Synchro software (Version 7) was used to model the intersections within the study area.

The primary performance indicator for intersections is level of service (LOS). LOS is a performance measure that describes operational conditions and provides an index to the quality of traffic flow. LOS is defined in letter designations from A (no congestion on the road) to F (roadways that are overcapacity). LOS A represents the best operating condition, LOS C describes a stable flow condition, and LOS F represents the worst operating condition and is generally considered "unacceptable" to most drivers. Because the LOS of a traffic facility is a function of the traffic flows placed on it, the LOS of a facility may vary greatly, depending on the time of day, day of week, or period of year. The LOS for signalized and unsignalized intersections is defined in terms of average control delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time (Table 3-12). The average control delay represents the cumulative time decelerating, time spent queuing toward the intersection, time stopped at the stop sign or traffic signal, and time accelerating to the original travel speed.

Table 3-12: Intersection Level of Service Criteria

Level of Service	Average Control Delay (seconds/vehicle)		General Description
	Unsignalized Intersection	Signalized Intersection	
A	0 to 10	≤10	Free flow
B	>10 to 15	>10 to 20	Stable flow (slight delays)
C	>15 to 25	>20 to 35	Stable flow (acceptable delays)
D	>25 to 35	>35 to 55	Approaching unstable flow (small increases in flow may cause substantial increases in delay and decrease in travel speed)
E	>35 to 50	>55 to 80	Unstable flow (intolerable delays)
F	>50	>80	Forced flow (congestion with high delay and extensive queues)

Source: Transportation Research Board (2000)

The weekday peak hour data were analyzed to determine existing LOS at the 25 key intersections under various traffic flow conditions. The Gaffney Road and 599th Street intersection currently operates at LOS E during the AM peak hour, and the Gaffney Road and 10th Street intersection currently operates at LOS D in the PM peak hour. The four intersections along Montgomery Road—at Meridian Road, Santiago Avenue, Luzon Avenue, and Ketcham Road—operate at LOS C or better during both peak hours. The remaining 19 intersections also operate at a LOS C or better during both peak hours (USKH, 2009).

The *Six-Year Transportation Plan Update* also projects the traffic volumes into the future to 2015 for the same 25 intersections on the Main Post previously mentioned. The 2015 estimated turning movement counts include proposed Main Post development expected to be complete and fully occupied by 2015; therefore, these estimated counts provide a reasonable 2014 baseline condition. Since the publication of the *Six-Year Transportation Plan Update,* the Montgomery Road at Meridian Road intersection has been upgraded to a signalized intersection, a recommendation listed in the Transportation Plan. The potential truck haul routes to the two landfills only potentially impact seven intersections along Gaffney Road, four intersections along Montgomery Road, and one intersection along Trainor Gate Road; therefore, the baseline conditions require the analysis of only 12 of the 25 Main Post intersections.

Based on the 2000 Highway Capacity Manual, the same tool used by the *Six-Year Transportation Plan Update*, the intersection analysis for the 12 intersections resulted in poor (LOS D), near failing (LOS E), or failing (LOS F) operations for three intersections, all unsignalized intersections operating as two-way, STOP-controlled. The three intersections operating poorly (Gaffney Road at 599th Street, Gaffney Street at 10th Street, and Montgomery Road at Santiago Avenue) would only represent the minor street approaches (599th Street, 10th Street, and Santiago Avenue) because the major street would operate as free flowing. The operations of the remaining intersections would operate at LOS C or better during both peak hours. Table 3-13 shows the baseline intersection analysis.

Table 3-13: Baseline Intersection Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	Average Control Delay (seconds/vehicle)	LOS	Average Control Delay (seconds/vehicle)	LOS
Gaffney Road at 599th Street[a]	147.6	F	39.0	E
Gaffney Road at 600th Street[b]	2.0	A	5.1	A
Gaffney Road at 602nd Street[b]	2.2	A	4.5	A
Gaffney Road at 9th Street[b]	3.0	A	5.5	A
Gaffney Road at 10th Street[a]	31.2	D	53.4	F
Gaffney Road at Whidden Road[a]	15.7	C	16.1	C
Gaffney Road at River Road/Meridian Road[b]	17.1	B	20.7	C
Montgomery Road at Meridian Road[b]	7.7	A	7.2	A
Montgomery Road at Santiago Avenue[a]	205.4	F	182.6	F
Montgomery Road at Luzon Avenue[a]	9.9	A	11.2	B
Montgomery Road at Ketcham Road[a]	18.5	C	16.1	C
River Road at Trainor Gate Road[b]	10.5	B	13.1	B

Note: LOS – level of service

[a] Unsignalized intersection, and operates as a two-way, STOP-controlled intersection. The average control delay and LOS reflects the minor street approach only.

[b] Signalized intersections, the average control delay and LOS reflects the overall intersection operation.

In addition to conducting the *Six-Year Transportation Plan Update*, the USAG FWA is upgrading Montgomery Road from the intersections of Meridian Road to Luzon Avenue to accommodate the projected increase in traffic and pedestrians associated with the military construction projects related to increasing the number of Soldiers and aviation assets stationed at Fort Wainwright (USAG FWA,

2012b). The upgrades to this section of Montgomery Road will be complete by the end of 2013 and include the following:

- This section of Montgomery Road will be widened to a total of 56 feet. Montgomery Road will have two 12-foot travel lanes with a 10-foot shoulder in the eastbound direction and one 12-foot travel lane with a 10-foot shoulder in the westbound direction.
- At the Montgomery Road and Luzon Avenue intersection, the Army will install a three-way traffic signal with a pedestrian signal.
- Four entrances drives with a minimum width of 24 feet will be built to provide access to Hangars 2 and 3. Some parking spaces will be lost as a result of the construction of the entrances drives.
- Pedestrian crosswalks will be provided on Montgomery Road to adjacent builds, sidewalks, and parking areas.
- Parking spaces for Building 3010 will be relocated, and no parking spaces would be lost.
- A 6-foot-wide bike path will be built along the south side of Montgomery Road between Meridian Road and Santiago Avenue to connect with the existing bike path east of the Montgomery Road and Santiago Avenue intersection.

3.8.1.2 Parking

Adequate parking exists in all active areas of the Main Post (USACE, 2008). The asphalt parking lot between Hangars 2 and 3 and Montgomery Road has had multiple resurfacing and patch repairs completed in the past. Many large cracks and puddles were observed on the parking surface. The parking spaces paint lines are faded and nonexistent in many locations. The paved parking area is approximately 140 feet by 1,200 feet and could accommodate approximately 200 vehicles for both hangars. Vehicles can access the parking lot from Montgomery Road. No curb separates the parking lot and Montgomery Road. Vehicles can enter the facilities from anywhere along Montgomery Road (USACE, 2008).

3.8.2 Environmental Consequences

3.8.2.1 Significance Criteria

The following criteria have been developed to assess the transportation impacts for each of the alternatives:

- **None**—Current traffic patterns and trends would prevail. There would be no change to traffic operations as a result of the action.
- **Minor to Moderate (not significant)**—The degree to which activities result in increased use of roads or interferes with the provision of services to the same, or intersection and gate delays
- **Severe (significant)**—Activities that cause recurring traffic delays on roadways, cause discernible degradation of existing roads, or result in intersections and gates reaching capacity and developing extensive delays would represent a significant impact.

3.8.2.2 Alternative 1: Demolition of Hangars 2 and 3

Under Alternative 1, the building demolition and concrete apron construction activities would be expected to last approximately six months beginning in spring 2014. No road closures or detours are anticipated during construction periods; however, there would be short-term, minor impacts associated with the increase in vehicles generated by construction workers and dump trucks during the demolition and construction activities.

The dump trucks would transport the debris from the hangars to two different landfills, one located on the Main Post and the other located south of the Main Post (the FNSB landfill), depending on the type of debris. ACBM would be transported to the Fort Wainwright landfill, located on the Main Post along River Road, east of Canal Service Road. The truck route between the hangars and the Fort Wainwright landfill would follow Montgomery Road west to Meridian Road north to River Road east to the Fort Wainwright landfill. The return route to the hangars would follow the reverse route along the same roadways. The truck route between the hangars and the FNSB landfill would likely operate in a counter-clockwise loop beginning at the hangars by following Montgomery Road west, to Meridian Road north, to Gaffney Road west, to Richardson Highway south, to the Lakeview Drive exit, to Old Richardson Highway west, to Easy Street south, to the FNSB landfill. The return route would follow Easy Street north, to Old Richardson Highway east, to Richardson Highway east, to the Badger Road exit, to Badger Road north, to Montgomery Road west, to the hangars. Figure 3-7 shows the proposed landfill truck routes.

Figure 3-7: Proposed Landfill Truck Routes

Based on the USACE building demolition estimates (USACE, 2012d), 5,038 total projected truck trips would be required to remove the debris from the demolition of the two hangars and supporting infrastructure, i.e., 5,013 projected truck trips between the two hangars and FNSB landfill and 25 projected truck trips between the two hangars and Fort Wainwright landfill to dispose of ACBM. To estimate the number of peak hour truck trips between the two hangars and FNSB landfill, a six-month time frame and eight-hour workday were assumed. Based on these assumptions, there would be 5 trucks per hour or the equivalent of 10 passenger cars per hour during both peak hours (7:00 AM to 8:00 AM and 4:30 PM to 5:30 PM). The passenger car conversion provides an equivalent measure of vehicle volume when analyzing the intersection operations because the length of one dump truck is approximately equal to the length of two passenger vehicles. Using the same time-frame assumptions, less than one truck per hour is projected to travel between the two hangars and Fort Wainwright landfill. Table 3-14 summarizes the peak hour truck trip assumptions.

Table 3-14: Peak Hour Truck Trip Assumptions

Assumptions	Number of Trucks to Fairbanks North Star Borough Landfill	Number of Trucks to Fort Wainwright Landfill
Total number of truck trips	5,013	25
Number of truck trips per workday (six-month period: April–September [128 workdays])	39	<1
Number of trucks per hour (eight-hour workday)	5	<1
Passenger car equivalent per hour (one truck = two passenger cars)	10	<1

In addition to the truck trips, there would also be construction worker trips during the AM and PM peak hours. To analyze the impact that the construction worker trips would have on traffic, an assumption first had to be made about how the trips would be distributed among the three gates accessing Main Post. Based on the USACE Economic Impact Forecast System, the demolition would require 32 projected construction workers (see Appendix F). Assuming one daily shift, the construction workers would arrive at a similar start time during the AM peak hour and depart at a similar end time during the PM peak hour. Therefore, there would be 32 projected inbound construction worker trips during the AM peak hour and 32 projected outbound construction worker trips during the PM peak hour.

To determine the distribution of the 32 AM peak hour inbound and PM peak hour outbound projected construction work trips, the *Six-Year Transportation Plan Update* turning movement counts at the three intersections closest to the three Main Post gates were used. The turning movement counts provided the number of vehicles entering and exiting through the three gates during the AM and PM peak hours, this number was then converted to a distribution percentage among the three gates. This distribution percentage was then applied to the number of construction worker trips generated by the Proposed Action (Table 3-15) and assigned along the most direct route between the two hangars and each gate as described below:

- To/from Main Gate: Gaffney Road to Meridian Road to Montgomery Road to the site
- To/from Trainor Gate: Trainor Gate Road to River Road to Meridian Road to Montgomery Road to the site
- To/from Badger Gate: Montgomery Road to the site

Table 3-15: Construction Worker Trip Distribution

Gate	AM – Inbound to Site		PM – Outbound to Site	
	Number of Vehicles	Percentage of Vehicles	Number of Vehicles	Percentage of Vehicles
Main Gate	17	54	18	55
Trainor Gate	8	24	8	24
Badger Gate	7	22	6	21
Total	32	100	32	100

Combining the projected construction worker and truck trips (using passenger car equivalents for truck trips) would result in the following projected peak hour trips:

- Main Gate would have 17 projected inbound trips (construction workers) and 10 projected outbound trips (trucks) during the AM peak hour.
- Trainor Gate would have 8 projected inbound trips during the AM peak hour (construction workers).
- Badger Gate would have 17 projected inbound trips (7 construction workers and 10 trucks) during the AM peak hour.
- Main Gate would have 28 projected outbound trips (18 construction workers and 10 trucks) during the PM peak hour.
- Trainor Gate would have 8 projected outbound trips during the AM peak hour.

- Badger Gate would have 10 projected inbound trips (trucks) and 6 projected outbound trips (construction workers) during the AM peak hour.

For this analysis, only the 12 key Main Post intersections directly affected by the Proposed Action have been evaluated because the other key intersections identified in the *Six-Year Transportation Plan Update* would not be affected. Specifically, a comparison between Alternative 1 and the baseline condition was performed for each of the 12 intersections to determine what the traffic impact would be, based on the addition of the temporary construction worker and truck trips. Figure 3-8 shows the location of the analyzed intersections.

Based on the 2000 Highway Capacity Manual, the same tool used by the *Six-Year Transportation Plan Update*, the AM peak hour intersection analysis for the 12 intersections resulted in no change in the LOS when comparing the baseline to Alternative 1. Two of the intersections that would operate at LOS F for the baseline (Gaffney Road at 599th Street and Montgomery Road at Santiago Avenue) would experience approximately a 15-second increase of the average control delay. The remaining intersections would experience less than a 3-second average control delay difference between the baseline and Alternative 1. Table 3-16 shows the AM peak hour analysis comparison between baseline and Alternative 1.

The PM peak hour intersection analysis for the 12 intersections resulted in no change in the LOS when comparing the baseline to Alternative 1. One of the intersections that would operate at LOS F for the baseline (Montgomery Road at Santiago Avenue) would experience less than a 7-second average control delay increase. The remaining intersections would experience less than a 4-second average control delay increase between the baseline and Alternative 1, including Gaffney Road at 599th Street, another intersection that would operate at LOS F for the baseline. Table 3-17 shows the PM peak hour analysis comparison between baseline and Alternative 1.

The maximum number of trips (construction worker and truck trips combined) projected to be entering or exiting the Main Gate would be 28 trips exiting the Main Gate. The second highest number of projected trips would be 17 entering Badger Gate and the Main Gate. If 28 vehicles were added each hour, the result would be the addition of approximately 1 vehicle every 2 minutes along Airport Way.

Figure 3-8: Location of Analyzed Intersections

Table 3-16: AM Peak Hour Traffic Analysis Comparison Between Baseline and Alternative 1

Intersection	Baseline		Alternative 1	
	Average Control Delay (seconds/vehicle)	LOS	Average Control Delay (seconds/vehicle)	LOS
Gaffney Road at 599th Street[a]	147.6	F	162.9	F
Gaffney Road at 600th Street[b]	2.0	A	2.0	A
Gaffney Road at 602nd Street[b]	2.2	A	2.2	A
Gaffney Road at 9th Street[b]	3.0	A	3.0	A
Gaffney Road at 10th Street[a]	31.2	D	33.2	D
Gaffney Road at Whidden Road[a]	15.7	C	16.0	C
Gaffney Road at River Road/Meridian Road[b]	17.1	B	17.7	B
Montgomery Road at Meridian Road[b]	7.7	A	7.9	A
Montgomery Road at Santiago Avenue[a]	205.4	F	219.7	F
Montgomery Road at Luzon Avenue[a]	9.9	A	10.0	A
Montgomery Road at Ketcham Road[a]	18.5	C	20.0	C
River Road at Trainor Gate Road[b]	10.5	B	10.5	B

Note: LOS – level of service

[a] Unsignalized intersection, intersections operate as two-way STOP-controlled intersections. The average control delay and LOS reflects the minor street approach only.

[b] Signalized intersections, the average control delay and LOS reflects the overall intersection operation.

Table 3-17: PM Peak Hour Traffic Analysis Comparison Between Baseline and Alternative 1

Intersection	Baseline		Alternative 1	
	Average Control Delay (seconds/vehicle)	LOS	Average Control Delay (seconds/vehicle)	LOS
Gaffney Road at 599th Street[a]	39.0	E	39.4	E
Gaffney Road at 600th Street[b]	5.1	A	5.1	A
Gaffney Road at 602nd Street[b]	4.5	A	4.5	A
Gaffney Road at 9th Street[b]	5.5	A	5.5	A
Gaffney Road at 10th Street[a]	53.4	F	56.9	F
Gaffney Road at Whidden Road[a]	16.1	C	16.3	C
Gaffney Road at River Road/Meridian Road[b]	20.7	C	23.5	C
Montgomery Road at Meridian Road[b]	7.2	A	7.3	A
Montgomery Road at Santiago Avenue[a]	182.6	F	189.5	F
Montgomery Road at Luzon Avenue[a]	11.2	B	11.3	B

Intersection	Baseline		Alternative 1	
	Average Control Delay (seconds/vehicle)	LOS	Average Control Delay (seconds/vehicle)	LOS
Montgomery Road at Ketcham Road[a]	16.1	C	16.3	C
River Road at Trainor Gate Road[b]	13.1	B	13.4	B

Note: LOS – level of service

[a] Unsignalized intersection, intersections operate as two-way STOP-controlled intersections. The average control delay and LOS reflects the minor street approach only.

[b] Signalized intersections, the average control delay and LOS reflects the overall intersection operation.

Based on turning movement counts provided by the Alaska Department of Transportation and Public Facilities for the Airport Way at Richardson Highway / Steese Highway and Montgomery Road at Badger Road intersections (Anderson, 2013), the new construction worker and truck trips would result in less than a half of a second average control delay increase per vehicle for both AM and PM peak hours (using the Highway Capacity Manual [Transportation Research Board, 2000). The Airport Way at Richardson Highway / Steese Highway intersection would increase by an average control delay of 0.2 seconds per vehicle during the AM peak hour and 0.3 seconds per vehicle during the PM peak hour. The Montgomery Road at Badger Road intersection would not change during the AM peak hour and would increase by an average control delay of 0.1 seconds per vehicle during the PM peak hour. Based on these figures, there would be minor impacts to roadway operations on the off-post roadway network.

Once demolition of the hangars is complete, concrete would be added to the building footprints for future use as an airfield apron. The asphalt paving on the existing parking lot would be removed and replaced with grass. Although implementation of Alternative 1 would remove approximately 200 parking spaces, adequate parking would still exist in all active areas of the Main Post. Once demolition activities are completed, there would be no further impact on the transportation infrastructure as a result of this alternative.

Implementing Alternative 1 would result in short-term, minor impacts at two already failing intersections as a result of temporary construction worker and truck trips. Alternative 1 would not result in significant impacts to traffic or the transportation infrastructure; therefore, no mitigation measures were identified or would be required; however, as standard practices, BMPs would be employed.

As a BMP during the demolition of the hangars, the Army's contractor would provide a traffic control plan and temporary signing plan to provide road access to adjacent occupied building parking lots and entrances, as well as safety measures for pedestrians and occupants of adjacent buildings. The traffic

control plan would present the placement and times of use for any temporary traffic control devices in relation to the project site and construction activities and would follow the Manual on Uniform Traffic Control Devices standards. The Army's contractor would also maintain and protect traffic on affected on-post roads during the construction period. This would include implementing measures for the protection and diversion of general traffic (watchman, flagmen, barricades, temporary lighting, signing), minimizing interference with general traffic along the proposed truck haul route on post, and investigating the adequacy of existing roads and bridge allowable limits.

3.8.2.3 Alternative 2: No Action

Under the No Action Alternative, while Hangars 2 and 3 remain intact there would be no impact on transportation since they would continue to remain vacant. Given the deteriorated nature of the hangars, the fact that they would not be rehabilitated, and as future systems fail they will not be repaired or replaced, it is assumed that they would eventually collapse on their own. When this occurs, the Army would remove the debris, disposing of it in the Fort Wainwright and FNSB landfill (if the buildings collapse after September 2015 then all material would be disposed of at the FNSB landfill since the Fort Wainwright landfill will close on that date and will no longer be able to accept ACBM) and place airfield concrete apron within the footprints of the hangars after the debris is removed. These activities would involve the same number of construction worker and truck trips as calculated and described under Alternative 1, and would result in the same short-term, minor impacts as described under Alternative 1 associated with the increase in temporary construction worker and truck trips during the demolition of both hangars. Once the debris from the collapsed hangars is removed and the airfield concrete apron is placed in the footprints of the buildings, there would be no long-term impacts on traffic.

With no significant impacts under Alternative 2, no mitigation measures were identified or needed; though the same BMPs identified under Alternative 1 also would be employed under Alternative 2 during the removal of the demolition debris.

3.9 Cumulative Effects

In addition to identifying the direct and indirect environmental impacts of their actions, the CEQ's NEPA regulations require federal agencies to address cumulative impacts related to their proposals. A cumulative impact is defined in the CEQ regulations (40 CFR §1508.7) as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person

undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." This section describes the process used to identify potential cumulative impacts related to the Proposed Action at Fort Wainwright and discusses those impacts for each of the resources addressed earlier in this chapter in Sections 3.2 through 3.8.

3.9.1 Approach for Assessing Cumulative Effects

Guidance used for preparing the cumulative effects analysis includes:

- CEQ's NEPA implementing regulations (40 CFR §1500–1508)
- *Environmental Analysis of Army Actions* (32 CFR §651)
- *Considering Cumulative Effects under the National Environmental Policy Act*, 1997
- CEQ's *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*, 2005
- U.S. Army Environmental Command's *NEPA Analysis Guidance Manual*, 2007

The process outlined by CEQ includes identifying significant cumulative effects issues, establishing the relevant geographic and temporal (time frame) extent of the cumulative effects analysis, identifying other actions affecting the resources of concern, establishing the cause-and-effect relationship between the Proposed Action and the cumulative impacts, determining the magnitude and significance of the cumulative effects, and identifying ways in which the agency's proposal might be modified to avoid, minimize, or mitigate significant cumulative impacts.

Issues to be addressed in the cumulative effects analysis were determined based on the identification of resources that would be directly or indirectly affected by the alternatives being considered for implementing the Proposed Action (see Table 3-18). These resources, discussed earlier in this chapter, were identified based on information received during internal and public scoping or through the analysis of direct and indirect effects that have the potential to combine with other past, present, or reasonably foreseeable future actions to produce a larger impact. If the analysis demonstrated there would be no direct or indirect impact to a resource, it was not included in the cumulative effects analysis because the Proposed Action would not add to the cumulative impact.

Table 3-18: Resource Areas and Environmental Impacts Associated with Each Alternative

Resource Area	Alternative 1: Demolition of Hangars 2 and 3	Alternative 2: No Action
Air quality	Short-term and minor Long-term and beneficial	Short-term and minor Long-term and beneficial
Cultural resources	Severe—loss to Ladd Field NHL and Cold War Historic District Moderate—integrity of Ladd Field NHL and Cold War Historic District	Severe—loss to Ladd Field NHL and Cold War Historic District Moderate—integrity of Ladd Field NHL and Cold War Historic District
Hazardous materials/hazardous waste	Minor and beneficial	Moderate
Safety	Short-term and minor Long-term and beneficial	Moderate
Environmental justice and protection of children	No impact	No impact
Sustainability	Short-term and minor Long-term and beneficial	Moderate
Transportation	Short-term and minor Long-term—no impact	Short-term and minor Long-term—no impact

Notes: Cold War Historic District – Ladd Air Force Base Cold War Historic District, Ladd Field NHL – Ladd Field National Historic Landmark

CEQ regulations specify that cumulative effects analyses encompass past, present, and reasonably foreseeable future actions. Actions considered in this cumulative effects analysis are identified in Section 3.9.2. As a practical matter, the impacts of past actions are already reflected in the conditions that currently exist, as described earlier in this chapter in the Affected Environment section of each resource area. For example, past actions on Fort Wainwright affecting the Ladd Field NHL and Cold War Historic District are already considered in the Affected Environment section of Cultural Resources in the discussion of the existing integrity of the Ladd Field NHL and Cold War Historic District. Nevertheless, several past actions have occurred that could contribute to cumulative effects and whose impacts are not reflected in the baseline described in the Affected Environment section of each resource area. As a result, these additional past actions are included in the cumulative effects analysis and are identified in Table 3-20, *Past, Present, and Reasonably Foreseeable Future Actions*, below. The

projects are generally located outside of the ROIs analyzed in the Environmental Consequences section of each resource area, but could still contribute to cumulative effects, particularly with respect to the Ladd Field NHL. Present and reasonably foreseeable future actions are considered as those that currently exist or are under construction, are the subject of an existing plan or proposal, or have identified funding. Actions beyond that become increasingly speculative and difficult to assess.

3.9.2 Geographic Scope

In general, the geographic scope, or ROI, for direct and indirect impacts of the Proposed Action at Fort Wainwright includes the installation itself as well as FNSB (see Table 3-19 below). Because of the unique nature of World War II resources in Alaska, the geographic scope for the cumulative effects analysis for cultural resources has been expanded to include World War II resources in Alaska, and more specifically the World War II NHLs in Alaska.

Table 3-19: Geographic Scope

Resource Area	Proposed Action Direct and Indirect Impacts ROI	Cumulative Effects Analysis ROI
Air quality	Entire FNSB airshed	Same ROI as direct and indirect impacts
Cultural resources	Ladd Field NHL and Cold War Historic District (APE)	World War II resources in Alaska, focusing on World War II NHLs
Hazardous materials/ hazardous waste	Footprint of demolition of Hangars 2 and 3; the apron construction footprint; FNSB landfill and Fort Wainwright landfill	FNSB
Safety	Hangars 2 and 3 and areas in the immediate vicinity (100 feet); haul routes to and from FNSB landfill and Fort Wainwright landfill	Same ROI as direct and indirect impacts
Environmental justice and protection of children	Hangars 2 and 3 and areas in the immediate vicinity (100 feet); haul routes to and from FNSB landfill and Fort Wainwright landfill	Same ROI as direct and indirect impacts
Sustainability	Hangars 2 and 3	Fort Wainwright
Transportation	Hangars 2 and 3 and areas in the immediate vicinity (100 feet); haul routes to and from FNSB landfill and Fort Wainwright landfill	FNSB

Note: APE – area of potential effect, FNSB – Fairbanks North Star Borough, Ladd Field NHL – Ladd Field National Historic Landmark, ROI – region of influence

3.9.3 Past, Present, and Reasonably Foreseeable Future Actions

Table 3-20 lists the past, present, and reasonably foreseeable future actions that were considered as part of this cumulative effects analysis. Descriptions of the actions are presented in Section 3.9.3.1, *Past Actions*; Section 3.9.3.2, *Present Actions*; and Section 3.9.3.3, *Reasonably Foreseeable Future Actions*. Those actions affecting World War II resources in Alaska are discussed in Section 3.9.4.

Table 3-20: Past, Present, and Reasonably Foreseeable Future Actions

Resource Area	Past	Present	Future
Air quality	• Residential Communities Initiative • Stationing and training of increased aviation assets, Phases 1 and 2	• Golf course club house and winter activity center • Stationing and training of increased aviation assets, Phases 3 and 4	• DoD and Veterans Affairs Family Care and Behavioral Health Clinic • Army Force Structure Realignment 2020
Cultural resources	• Activities affecting World War II resources in Alaska	• Activities affecting World War II resources in Alaska	• Army Force Structure Realignment 2020
Hazardous materials/ hazardous waste	• Residential Communities Initiative • Stationing and training of increased aviation assets, Phases 1 and 2	• Golf course club house and winter activity center • Stationing and training of increased aviation assets, Phases 3 and 4	• DoD and Veterans Affairs Family Care and Behavioral Health Clinic • Army Force Structure Realignment 2020 • Relocation of 18th Aggressor Squadron from Eielson AFB to Joint Base Elmendorf-Richardson, Alaska
Safety	• Residential Communities Initiative • Stationing and training of increased aviation assets, Phases 1 and 2	• Golf course club house and winter activity center • Stationing and training of increased aviation assets, Phases 3 and 4	• DoD and Veterans Affairs Family Care and Behavioral Health Clinic
Environmental justice and protection of children	• Residential Communities Initiative • Stationing and training of increased aviation assets, Phases 1 and 2	• Golf course club house and winter activity center • Stationing and training of increased aviation assets, Phases 3 and 4	• DoD and Veterans Affairs Family Care and Behavioral Health Clinic

Resource Area	Past	Present	Future
Sustainability	• Residential Communities Initiative • Stationing and training of increased aviation assets, Phases 1 and 2	• Golf course club house and winter activity center • Stationing and training of increased aviation assets, Phases 3 and 4	• Army Force Structure Realignment 2020 • DoD and Veterans Affairs Family Care and Behavioral Health Clinic
Transportation	• Residential Communities Initiative • Stationing and training of increased aviation assets, Phases 1 and 2	• Golf course club house and winter activity center • Stationing and training of increased aviation assets, Phases 3 and 4	• DoD and Veterans Affairs Family Care and Behavioral Health Clinic • Army Force Structure Realignment 2020 • Relocation of 18th Aggressor Squadron from Eielson AFB to Joint Base Elmendorf-Richardson, Alaska

Note: AFB – Air Force Base, DoD – Department of Defense

3.9.3.1 Past Actions

In accordance with CEQ guidelines as outlined in a 2005 memorandum, the discussion of past actions within this cumulative effects analysis focuses not on the historical details of individual past actions but rather on the aggregate effects of past actions and how they relate to the potential impacts of the Proposed Action.

Fort Wainwright

Residential Communities Initiative

Under the Residential Communities Initiative (RCI), the USAG FWA transferred responsibility for providing Family Housing and ancillary supporting facilities to Army Alaska Family Housing, a limited liability company composed of the Army and Actus Lend Lease. The USAG FWA conveyed, via lease, all military Family Housing units and selected ancillary supporting facilities to Army Alaska Family Housing. The USAG FWA also granted a 50-year ground lease (with an optional 25-year extension) for the areas on which the housing and facilities are located and for additional non-housing areas. The USAG FWA and Army Alaska Family Housing developed the Community Development and Management Plan to implement the Military Housing Privatization Initiative (USACE, 2008). During the first five years of the Community Development and Management Plan (2009–2013), Army Alaska Family Housing constructed an estimated 524 units, demolished an estimated 685 units, and revitalized an estimated 321 units. Because the RCI footprint is within an active NPL site, established under

CERCLA, every parcel within the footprint is governed by the Fort Wainwright Federal Facility Agreement and the institutional controls identified in related documents.

Stationing and Training of Increased Aviation Assets at Fort Wainwright, Phases 1 and 2

The Army is reorganizing and augmenting its aviation assets in Alaska to become a front line aviation unit with an increased combat-readiness capacity. This includes stationing of additional Soldiers and helicopters, construction of a number of facilities within the Fort Wainwright cantonment area, and increased aviation training on Army lands and within airspace in Alaska. Existing USARAK aviation assets will be converted into a Task Force consisting of approximately 1,200 personnel and 72 helicopters. An additional 710 Soldiers and 40 helicopters will augment USARAK's existing aviation assets of approximately 490 personnel and 32 helicopters. To accommodate the stationing and training of new aviation assets new buildings, parking areas, and fencing will need to be constructed along with the renovation or demolition of other structures.

New construction at Fort Wainwright will encompass approximately 2,379,159 square feet (54.6 acres), focusing primarily around the existing active military runway and occurring within the boundaries of already existing buildings. Most of the areas considered for new construction have been disturbed previously by military activities. The new construction will support indoor storage of 100 percent of the Task Force's aviation inventory, as well as other required facilities. New construction is occurring in phases and is described below. In addition to new construction, the demolition of three facilities will also occur (approximately 47,675 square feet): Building 3475 (shipping and receiving and administrative), Building 3477 (vehicle maintenance shop), and Building 3011 (water treatment building). This is a four phase project.

- **Aviation Task Force Complex Phase 1**—This phase of the standard design Aviation Task Force Complex included constructing barracks, a consolidated vehicle maintenance facility, aircraft parts storage building and vehicle parking. Supporting facilities include utilities; electric service; water, sewer, steam connections, paving, walks, curbs and gutters; parking; storm drainage; site improvements and information systems. Accessibility for individuals with disabilities was provided in public areas. Anti-terrorism measures also were provided.

- **Aviation Task Force Complex Phase 2**—This phase included constructing an OH-58D aircraft maintenance hangar, a four-plex Company Operations Facility, rotary wing parking, Organizational Unit storage, and a water deluge pump house. Intrusion Detection Systems, Mass Notifications Systems, Energy Monitoring and Control Systems, Keyless Lock System,

special foundation, and Information Systems are included. Supporting facilities include utilities; electric service; water, sewer, and steam connections; paving, walks, curbs and gutters; parking; storm drainage; site improvements and information systems. Accessibility for individuals with disabilities will be provided for administrative facilities. AT/FP measures will be provided. This phase also included the demolishing of three buildings totaling 41,639 square feet.

Regional

No off-installation projects within the ROIs of the applicable resource areas were identified that could potentially have a cumulative effect beyond those effects that are already reflected as part of the existing affected environment for each individual resource area.

3.9.3.2 Present Actions

Fort Wainwright

Golf Course Club House and Winter Activity Center

This project includes the construction of a 7,000-square-foot golf course club house and winter activity center and a 3,200-square-foot golf cart storage building. The new golf course club house will include a snack bar, dining/meeting area with lounge, common kitchen area, locker rooms, showers, restrooms, administrative offices, storage space, enlarged greens counter, simulator rooms, deck/patio, and mechanical rooms. The facility will be designed and constructed to enable year-round operation.

Stationing and Training of Increased Aviation Assets at Fort Wainwright, Phases 3 and 4

- **Aviation Task Force Complex, Phase 3A—**During this phase, the Army will construct a 125,870-square-foot aircraft maintenance hangar.
- **Aviation Task Force Complex, Phase 3B—**The primary facilities in this phase of the Aviation Task Force project include a 19,500-square-foot Company Operations Facility with enclosed hardstand, a 52,000-square-foot warm storage hangar, and a 118,881-square-foot organizational vehicle parking lot. The new hangar will provide consolidated indoor storage and space for maintenance and repair/reconditioning of helicopter engines, airframes, and electronic and optical systems.
- **Aviation Task Force Complex, Phase 4—**The primary facilities in this phase include two Battalion Headquarters with organizational classrooms (49,546 square feet and 16,015 square feet), and a 31,878-square-foot duplex Company Operations Facility with enclosed covered hardstand.

Regional

No off-installation projects within the ROIs of the applicable resource areas were identified that could potentially have a cumulative effect beyond those effects that are already reflected as part of the existing affected environment for each individual resource area.

3.9.3.3 Reasonably Foreseeable Future Actions

Fort Wainwright

DoD and Veterans Affairs Family Care and Behavioral Health Clinic (FY 17)

This project would construct a new DoD and Veterans Affairs Family Care and Behavioral Health Clinic to replace the Kamish Troop Medical Clinic (TMC) (Building 3406). The new facility will house the stationing actions for the Integrated Disability Evaluation System, along with several other health care entities. Construction of the new facility will begin in 2017. In the interim, interior modifications will be made to the Kamish TMC to support the Integrated Disability Evaluation System. The new 87,845-square-foot facility will be constructed at the southwestern corner of the intersection of Alder Avenue and South Gate Road.

The building will be designed, by 2018, to serve approximately 25,768 DoD/Veterans Affairs personnel and their dependents and accommodate 411 parking spaces. Fort Wainwright would gain approximately 12 personnel as a result of this new facility. The total project footprint is approximately 21 acres, of which approximately half would be occupied by the new building, associated parking spaces, and landscaping.

Army Force Structure Realignment 2020

The Army is proposing to conduct force reductions and realign existing forces from FY 13 through FY 20 to shape a force of a size and configuration that is capable of meeting current and future national security and defense requirements. The Army's Active Duty end strength will decline from an authorized FY 12 end strength of 562,000 to 490,000. Under Alternative 1 of the Army Force Structure Realignment 2020, Fort Wainwright's population could decrease by up to 4,900 personnel, while under Alternative 2, Fort Wainwright's population could increase by up to 1,000 personnel. No decision has been made yet on this proposal.

Regional

Relocation of 18th Aggressor Squadron from Eielson Air Force Base to Joint Base Elmendorf-Richardson, Alaska

The Air Force is proposing to relocate the 18th Aggressor Squadron (18 AGRS) from Eielson AFB to Joint Base Elmendorf-Richardson (JBER). The 18 AGRS consists of 18 assigned F-16 aircraft and 3 back-up F-16 aircraft. This proposed relocation includes removing 623 military personnel from Eielson AFB, transferring approximately 542 positions to JBER, and eliminating 81 positions.

Eielson AFB will continue to host Red Flag and Distant Frontier training exercises with the 18 AGRS operating out of JBER under one of two possible alternatives:

- Alternative 1—The 18 AGRS would deploy to Eielson AFB for the duration of the Red Flag exercises.
- Alternative 2—The 18 AGRS F-16 aircraft would fly to and from the Joint Pacific Alaska Range Complex Military Operations Areas in the vicinity of Eielson AFB on a daily basis during exercises, requiring aerial refueling. The participating F-16 aircraft would not routinely land at Eielson AFB for refueling.

Under both alternatives, aircraft would operate in the same air space as currently used for Red Flag and Distant Frontier exercises. Transient aircraft and personnel from outside of Alaska participating in these exercises would continue to deploy to and operate out of Eielson AFB. Keeping the 18 AGRS stationed at Eielson AFB and not implementing this Proposed Action is also a possibility.

3.9.4 Cultural Resources—Actions Affecting World War II Resources in Alaska

3.9.4.1 World War II Resources in Alaska

Because of their significant role in World War II, specifically with regard to Lend-Lease Operations, military build-up and support, and military actions in the North Pacific and Aleutian campaign, many of Alaska's World War II-era resources have been documented and studied in depth. In August 1984, as part of its historic preservation compliance obligations under the Defense Environmental Restoration Program, the USACE Alaska District entered into a Programmatic MOA with the ACHP, the NPS, and the Alaska SHPO that stipulated the completion of a comprehensive study and plan for World War II resources in Alaska. The report, *World War II in Alaska: A Historic Resources and Management Plan*, provided a historic overview of World War II in Alaska, described significant associated events, and presented a detailed bibliography of World War II sources. The report also identified resources for

preservation and developed a preservation plan for the resources (Envirosphere Company, 1988). The report identified 135 sites associated with the World War II in an Alaska historic context (Envirosphere Company, 1988).

The report also identified more than 50 World War II building and structure types constructed at Alaska wartime installations, including housing and personnel facilities, industrial buildings, infrastructure, docking facilities, artillery facilities, aircraft warning systems, and aircraft facilities. Among the seven Army and Navy hangar types identified, Birchwood hangars were described as "constructed of 150' bowstring trusses supported by timber columns, with 25' wide lean-to on both sides; concrete floor and foundations; overall dimension 202' by either 200' or 300'" (Envirosphere Company, 1988). Wartime examples of these hangars were noted at Ladd Field, Nome, Galena, Mile 26 Air Field, Fort Glenn, Amchitka, and Shemya.

3.9.4.2 Alaska's World War II National Historic Landmarks

In 1984, the Secretary of the Interior took steps to acknowledge the importance of Alaska's role in World War II history by designating eight sites in the state as NHLs. Each of these NHLs was identified through the NPS' World War II in the Pacific initiative and includes former Army and Navy bases, Aleutian battlefields, airfields, and an area on Kiska Island once occupied by the Japanese. The eight World War II-related military sites in Alaska are NHLs:

- Adak Army and Naval Operations Base, Adak Island
- Attu Battlefield and Bases, Attu Island
- Fort Glenn (Cape Field), Umnak Island
- Dutch Harbor Naval Base and Fort Mears, U.S. Army, Unalaska Island
- Japanese Occupation Site, Kiska Island
- Kodiak Naval Operating Base and Forts Greely and Abercrombie, Kodiak Island
- Ladd Field (Fort Wainwright), Fairbanks
- Sitka Naval Base and U.S. Army Coastal Defenses, Sitka

Although several of the properties consisted of facilities related to aircraft function (hangars, runways, servicing facilities), most of those resources were either non-extant at the time of the nomination, were in a deteriorated state, or have been demolished since that time. The USFWS and the NPS, Alaska Region jointly operate several of the NHLs, the Ounalashka Corporation owns most of the land in the Dutch Harbor NHL on Amaknak Island, and some parcels are operated in conjunction with the NPS or are privately held (Clemens, 2012).

These NHL properties represent the most significant World War II sites in the state. The conditions at Ladd Field have been noted above, while current conditions at the other NHLs vary in integrity. At the Attu and Kiska NHLs, some building foundations are extant and wartime ammunition dumps and airstrips still exist. Attu maintains its integrity as the site of the only World War II battle fought on the North American continent and is largely interpreted as a battlefield site. At Adak, four Kodiak T-type wartime hangars had been demolished at the time of its NHL nomination (1984), and the sole surviving wooden hangar on the property (out of the original eight such hangars) was in such a dilapidated condition that it was deemed "not worthy of preservation" (Thompson, 1984b). A commemorative marker at Adak indicates the location of the last surviving wooden hangar that was flattened during a strong wind in the winter of 1995 (Navy, 2012). A Birchwood hangar was completed in 1944 at Cape Field, Fort Glenn, and housed the Air Base Headquarters. Although extant at the time of the NHL nomination and the 1994 NHL update, the 1994 NHL update noted that the hangar was "greatly deteriorated." Vacant and open to destructive winds, large gaping holes in the wood and steel structure were noted; no update on the hangar's condition has been submitted since that time (Cook, 1994; Clemens, 2012). The Naval Operating Base at Dutch Harbor built just south of Mount Ballyhoo was intensely built up during World War II; however, the 1984 NHL nomination noted that although most structures associated with the airfield remained (including a double hangar), they were fast deteriorating and some were already in a ruinous condition (Thompson, 1984c). The 1984 nomination for the land-plane airfield at the Naval Operating Base at Kodiak noted that nothing remained of 25 wartime hangars constructed at the installation, although some of the seaplane hangars were still extant and at the time used by the U.S. Coast Guard (Thompson, 1984d).

3.9.4.3 World War II Valor in the Pacific National Monument

In 2008, President George W. Bush issued Presidential Proclamation 8327 that established the World War II Valor in the Pacific National Monument (USFWS and NPS, 2010). The monument consists of World War II battlefields, sites, and other historic features in Hawaii, Alaska, and California that contribute to the broad story of World War II in the Pacific Region. The Alaska Unit of this monument includes historic resources on Atka, Kiska, Little Kiska, and Attu islands. All sites in the monument are on lands that the USFWS manages as part of the Alaska Maritime National Wildlife Refuge (formerly the Aleutian Islands Reservation). Some of the land in the National Monument overlaps with two of Alaska's NHLs—the Attu Battlefield and the Army and Navy Airfields on Attu and the Japanese Occupation Site on Kiska (USFWS and NPS, 2010). Designation of these sites as part of the National Monument reaffirms their national significance (USFWS and NPS, 2010). The purpose of the Alaska Unit of the National Monument is to honor Soldiers and civilians and their sacrifices by protecting

World War II landscapes, sites, and artifacts; to promote research; and to tell the stories of war in the North Pacific (USFWS and NPS, 2010).

3.9.5 Methodology

A primary goal of this cumulative effects analysis is to provide the decision maker with an awareness and functional view of the longer-term potential implications and consequences associated with implementing the Proposed Action in combination with other past, present and reasonably foreseeable future actions within the region. Each resource analyzed in detail in this Draft EIS was evaluated to determine the appropriate level for cumulative effects analysis. A series of "quick look" questions was developed based on CEQ and Army guidelines. The "quick look" questions facilitate orientation of the issues, consider potential incremental effects of the proposed action, and identify those resources that may be subject to cumulative effects. Based on the answers to these questions, each resource was then placed in one of the three following analysis categories as shown in Table 3-21. See Appendix I for the individual resource area quick look questions and answers.

- Level 1: The Quick Look Level—If the quick look answers indicate that likely impacts are quite small or can be mitigated and will be unlikely to contribute to significant direct or indirect impacts on the resource, then the analysis does not need to be extensive and can be quite brief.

- Level 2: The Analysis and Discussion Level—Additional analyses may be required to thoroughly answer the questions and should be more thoroughly documented, though it still should be "…in proportion to the nature and severity of the issues addressed; and they should focus on those issues that interest the decision maker and the public" (32 CFR §651).

- Level 3: The Detailed Analysis Level—If the analyses identify any potential direct or indirect effects that cannot be mitigated or could contribute to the cumulative effects, a more rigorous analysis is required and should be documented. Detailed analysis is required when the likelihood of significant effects is greatly increased.

Based on the conclusions of the direct and indirect impact analysis conducted for Demolition of Hangars 2 and 3 (Alternative 1) and the No Action Alternative (Alternative 2), answers to the quick look questions (see Appendix I), and a review of the past, present, and reasonably foreseeable future actions and their associated potential impacts within the ROI, it was determined that a Level 1 analysis would be appropriate for air quality, safety, environmental justice and protection of children,

sustainability, and transportation. Cultural resources and hazardous materials/hazardous waste were the only resources determined to require a Level 2 analysis. No resources were determined to need a Level 3 analysis.

Table 3-21: Level of Analysis Established for Each Resource Studied in this Draft EIS

Level 1: Quick Look	Level 2: Analysis and Discussion	Level 3: Detailed Analysis
Air quality Safety Environmental justice and protection of children Sustainability Transportation	Cultural resources Hazardous materials/hazardous waste	None

3.9.6 Cumulative Effects Analysis—Level 1: Quick Look

The proposed alternatives were determined to contribute minimally to cumulative effects on the following resource areas within the geographic and temporal scope of analysis.

3.9.6.1 Air Quality

Both Alternative 1 and the No Action Alternative analyzed in this Draft EIS could have some adverse effect on regional air quality if implemented, though very minor. These impacts include emissions of criteria pollutants including fugitive dust, carbon monoxide, nitrogen oxides, and sulfur dioxide; all of which would be emitted to varying degrees under each alternative. Overall, such emissions are minor and temporary. Under both alternatives, there would be long-term, beneficial impacts from the demolition/removal of both hangars and the reduction from the current heating and electrical load on the CHPP; though the benefits under the No Action Alternative would be delayed compared to Alternative 1.

Both alternatives would result in direct emissions of GHG. Direct emissions would be produced via mobile sources, such as construction vehicles. CO_2 resulting from burning fossil fuels in a vehicle engine would be the primary GHG produced under each alternative; however, the amount of GHGs produced from these vehicles would be short term and minor. In the long term, both alternatives would result in the demolition of both hangars, which would reduce the heating demand on the CHPP and result in fewer GHGs emitted from the facility. Consequently, on a project basis, impacts from GHG emissions are expected to be minimal.

Fort Wainwright is within the portion of FNSB that is in nonattainment for $PM_{2.5}$ and maintenance for CO. FNSB is in attainment for all other criteria pollutants. Past construction projects, including the RCI initiative, resulted in short-term impacts during construction and increased the long-term load on the CHPP. Similarly, ongoing and future projects that involve construction would be expected to contribute short-term impacts during construction and long-term impacts from increased heating and electrical demand, as well as any vehicle emissions from additional employees or residents. The increase in aviation activities at Fort Wainwright would continue to contribute adverse impacts to air quality. Because the addition of criteria pollutants associated with demolition and construction under both alternatives is minor and short term, and long-term beneficial for two criteria pollutants and GHGs, no regional changes to air quality attainment status are expected, even in combination with other local activities.

Overall, when considered in combination with past, present and reasonably foreseeable future actions (Table 3-20), effects of the proposed alternatives on regional air quality are expected to be minor.

3.9.6.2 Safety

Under Alternative 1, Demolition of Hangars 2 and 3, no cumulative impacts to safety would be expected because as discussed in Section 3.5.2, the alternative would remove the risk of structural failure of the buildings and the existing hazardous materials and hazardous waste, thereby avoiding the risk of the buildings collapsing as well as exposure of the contaminants to the environment. The C&D debris from the demolition would be removed and disposed of in compliance with applicable regulations and requirements. Therefore, within the area that includes Hangars 2 and 3 and the immediate vicinity, Alternative 1 would result in beneficial impacts to safety because of the removal of the potential risks. By following applicable regulations for packing and hauling hazardous materials and abiding by posted speed limits and road weight limits, Fort Wainwright contractor would ensure that safety would not be compromised when hauling the debris along the truck routes to the Fort Wainwright and FNSB landfills.

Under the No Action Alternative, the continued degradation of the hangars and potential structural failure of the buildings would pose safety concerns within the area that includes Hangars 2 and 3 and the immediate vicinity. These would result in long-term, moderate impacts on safety. Therefore, until the buildings collapse and the debris is removed and disposed of, the No Action Alternative of the Proposed Action contributes to overall safety concerns at Fort Wainwright. Of the past, present and future projects included in this EIS for cumulative impacts analysis, the EIS for the Stationing and Training of Increased Aviation Assets at Fort Wainwright identified less than significant impacts on

safety. The combined cumulative impacts to safety would also be less than significant because each project would result in less than significant impacts and because the safety concerns and impacts under the No Action Alternative would be confined to a limited area. After the collapse of the buildings, the C&D debris from the demolition would be removed and disposed of in compliance with applicable regulations and requirements. Additionally, by following applicable regulations for packing and hauling hazardous materials and abiding by posted speed limits and road weight limits, Fort Wainwright contractors would ensure that safety would not be compromised when hauling the debris along the truck routes to the Fort Wainwright and FNSB landfills. Therefore, short-term, minor impacts would be anticipated under the No Action Alternative at that stage and would not be expected to contribute significantly to cumulative impacts to safety at Fort Wainwright or along the haul routes to FNSB landfill.

3.9.6.3 Environmental Justice and Protection of Children

As identified in Section 3.6.2, no environmental justice impacts or impacts to children are anticipated as a result of Alternative 1 or the No Action Alternative. Implementation of these alternatives is not expected to result in any disproportionately high and adverse impacts on the human health or environment of minority or low-income populations or on children. Therefore, implementation of these alternatives is not expected to contribute cumulatively to environmental justice impacts or impacts to children when the impacts of these alternatives are considered along with the identified environmental justice impacts and impacts to children of past, present, and reasonably foreseeable future actions.

3.9.6.4 Sustainability

The demolition of the hangars under Alternative 1 would have short-term, minor impacts on sustainability from the loss of embodied energy within the hangars, the requirement of new materials (e.g., new concrete for the aircraft parking apron), the generation of construction emissions, and the inability to recycle or reuse all of the materials. Long-term, beneficial impacts under Alternative 1 would result from reduced energy consumption, cost savings, and the ability to recycle materials not currently being used. Impacts under the No Action Alternative would be moderate and result from wasted energy and funds being contributed to the unused hangars, the hangars having outlived their intended lifespan, and their assumed eventual collapse, which would reduce the amount of material that could be potentially recycled or reused.

The RCI involved the construction of an estimated 524 housing units, demolition of an estimated 685 units, and revitalization of an estimated 321 units. All new construction and renovated units adhered to

sustainable construction standards and were required to achieve a gold rating through the Sustainable Project Rating Tool, which examines site, water, energy and overall building sustainability and work in helping the Army meet its sustainability goals. While the development of these residential units leads to an increase in demand for regional energy and utility resources, based on the relatively small scale of units compared to the region as a whole, energy demand as a result of these units is considered minimal.

Activities associated with Phases 1 through 4 of the Stationing and Training of Increased Aviation Assets, and the Golf Course Club House and Winter Activity Center have or will place additional demands on energy resources through the construction and operation of new and proposed facilities. These demands are not expected to have any significant impacts on energy demand, with impacts being minor nor any impacts to the ability of utility providers to provide energy. All new associated construction activities associated with DoD facilities are required to obtain LEED Silver status and, therefore, they help the Army to meet its sustainability goals because they are required to adhere to more sustainable construction practices and are in general more energy efficient. The proposed 87,845 DoD and Veteran Affairs Family Care and Behavioral Clinic and demolition of the Kamish TMC would have some adverse impacts to sustainability. These impacts would stem from the demolition of the Kamish TMC and the loss of embodied energy and of materials that could not be recycled. Impacts would also come from new materials and construction emissions required to construct the new facility. The facility would obtain LEED Silver status and likely be more efficient than the existing Kamish TMC leading to some beneficial impacts. It is expected that the construction and operation of this facility would have only minor impacts to energy demand or the utility provider's ability to provide energy and by obtaining LEED status would help the Army meet its sustainability goals.

Alternative 2 under the Army Force Structure Realignment 2020 proposes to increase the Fort Wainwright population by up to 1,000 personnel. In the instance that Fort Wainwright does receive more personnel, it is likely that additional facilities would be needed. These facilities would be required to obtain LEED Silver status, helping contribute to the Army sustainability goals, and while putting additional demand on regional utility and energy resources, it is not expected that this demand would be significant. In the event that the population at Fort Wainwright is reduced under Army Force Structure Realignment 2020, it is possible that some of the existing resources at Fort Wainwright would no longer be needed. If existing resources/buildings are removed, it is expected that materials would be recycled to the greatest extent possible and that energy resources would be used as efficiently as possible resulting in no impacts to sustainability or Army sustainability goals.

Based on the above-mentioned cumulative impacts to sustainability in conjunction with the alternatives of this Draft EIS it is expected that combined these actions would result in a minor impact to local energy demand, would not impact the ability of regional utilities to provide energy, and would not be significant in the context of sustainability. Overall impacts to sustainability as a result of new construction and operation are expected to be minor and based on construction and operation requirements at Fort Wainwright would work in helping the Army meet its sustainability goals.

3.9.6.5 Transportation

Alternative 1 would take place beginning in spring 2014 and last approximately six months. None of the reasonably foreseeable future actions are expected to be under construction (heath clinic) or implemented (changes in personnel at Fort Wainwright or Eielson AFB) during 2014. Therefore, there would be short-term, minor, cumulative impacts associated with an increase in traffic generated by construction workers and dump trucks during the Alternative 1 construction period, plus the additional traffic caused by the past and present projects. This additional traffic volume would affect travel times and intersection operations at Montgomery and Gaffney Roads, Luzon and Santiago Avenues, and Main Post access control point delays during morning and evening peak hours. As discussed in Sections 3.8.3.2 and 3.8.3.3, Alternative 1 would have impacts at two already failing intersections. Potential transportation impacts would be localized to the two intersections and would occur during AM and PM peak hours only and would not result in a decrease in the level of service to the road system. These impacts would start and end with the construction phase, lasting six-months, and would contribute only slightly to cumulative impacts.

Because the No Action Alternative does not have a time frame, the cumulative impacts would differ depending on the timing of the structural failure of Hangars 2 and 3. If the structural failure were to occur prior to the implementation of any of the military staffing level change actions (Army Force Structure Realignment 2020), there would be a short-term, minor contribution to cumulative impacts to the roadway system. This would mainly impact roadways serving the airfield (Montgomery and Gaffney Roads and Luzon and Santiago Avenues), affecting travel times and intersection operations during morning and evening peak hours along the above-mentioned roadways and Main Post access control points. If the structural failure were to occur during and after implementation of any of the military staffing level change actions (Army Force Structure Realignment 2020), there would be either no contribution to cumulative impacts if the full staff levels were to drop or a minor contribution to cumulative impacts to the Main Post roadways serving the airfield (Gaffney and Montgomery Roads, and Luzon and Santiago Avenues) if the staff levels were to increase. This would affect travel times and

intersection operations during morning and evening peak hours along the above-mentioned roadways and Main Post access control point delays.

During the demolition of the hangars, the Army's contractor would provide a traffic control plan and temporary signing plan to provide road access to adjacent occupied building parking lots and entrances as well as safety measures for pedestrians and occupants of adjacent buildings. The traffic control plan would present the placement and times of use for temporary traffic control devices in relationship to the project site and construction activities and should follow the Manual on Uniform Traffic Control Devices standards. The Army's contractor would also maintain and protect traffic on affected on-post roads during the construction period. This would include implementing measures for the protection and diversion of general traffic (watchman, flagmen, barricades, temporary lighting, signing), minimizing interference with general traffic along the proposed truck haul route on post, and investigating the adequacy of existing roads and bridge allowable limits.

The updated evaluation in the *Six-Year Transportation Plan Update* recommends roadway, intersection, and pedestrian improvements necessary to maintain the efficient and safe function and operation of installation roadways. Overall, the plan recommends improvements at seven locations due to safety and capacity issues. These recommended improvements would result in intersection operations that comply with the criteria of LOS C or better from the USAG FWA Directorate of Public Works through the 2015 analysis year.

3.9.7 Cumulative Effects Analysis—Level 2: Analysis and Discussion

Additional cumulative effects and analyses are required to thoroughly answer the Quick Look questions and document geographic and temporal cumulative impacts of the proposed alternatives on the resource areas presented below: cultural resources and hazardous materials and hazardous waste.

3.9.7.1 Cultural Resources

Geographic Scope, Time Frame, and Impact Criteria

Although Hangars 2 and 3 are contributing resources to both the Ladd Field NHL and the Cold War Historic District, they primarily derive their significance from their wartime construction and activities, so any impacts to them would result in impacts to the larger collection of World War II-related historic properties in Alaska. Because of the unique nature of World War II resources in Alaska, the USAG FWA considered the cumulative effect of the action and no action alternatives on World War II-related historic properties and NHLs in Alaska. The geographic scope for these analyses, therefore, extends to

the state of Alaska. Past, present, and reasonably foreseeable future actions date back to 1945 and the end of World War II (when disposal of some military properties occurred) and extends to 2020 (when the Army Force Structure Realignment 2020 is expected to be completed). The significance threshold for any cumulative effects would be triggered by changes to historic resources that would diminish their ability to convey their historical significance, as described in Section 3.3.2.1.

Although Hangars 2 and 3 are contributing resources to the Cold War Historic District, impacts to Cold War resources are not evaluated for the cumulative effects analysis because the hangars primarily possess significance as World War II-related aircraft buildings and as contributing resources to the Ladd Field NHL. The hangars' association with the Cold War Historic District is secondary to their original period of significance and function. The greatest effects, therefore, would be impacts to World War II-related resources.

Cause-and and-Effect Relationships

Section 3.3.2 describes the important cause-and-effect relationships affecting cultural resources. Both alternatives would have the same impact on cultural resources—the physical loss of the hangars. The impacts from Alternative 1 would occur immediately, while the impacts from the No Action Alternative would occur later in time. This is a long-term, direct impact. Demolition or structural failure of Hangars 2 and 3, which are contributing resources to the Ladd Field NHL and the Cold War Historic District, would diminish the resources' ability to convey their historical significance. The loss of these hangars would reduce the number of extant, contributing resources within the two districts. Although this loss is significant, the impact to the integrity of the Ladd Field NHL and the Cold War Historic District is moderate because the majority of intact contributing resources will remain and both districts will retain sufficient integrity to convey their historic significance.

Past, Present, and Reasonably Foreseeable Future Actions

Past adverse effects on World War II resources in Alaska are difficult to quantify because official records of such effects have not been maintained. Immediately following the end of the war, some of the military facilities were turned over to the War Assets Administration for disposition. The War Assets Administration transferred ownership of the facilities to local, state, or territorial entities; offered the surplus facilities to private enterprises; or sold them as scrap. Items included real property, buildings, equipment, aircraft, and airports.

The effects of time and the harsh Alaskan environment have taken a toll on the World War II resources in the state. Many of the sites are abandoned or not inhabited and are therefore exposed to vandalism,

along with the slow ravages of time and weather. Some resources listed in or eligible for listing in the National Register are in a deteriorated state or have been demolished due to deterioration. Some sites remain active as military installations or as commercial airports; these continuing activities could result in impacts to the wartime resources as military missions change and new, more modern facilities are needed to replace aging structures. The remote location of many of the World War II resources, however, limits their exposure to commercial development pressures.

The Alaska SHPO has provided information that indicates no ongoing list of adverse effects on World War II resources is maintained in the state, although several examples of recent adverse effects on such resources can be provided (Rickman, 2012). Some impacts include the demolition in 2011 of two World War II-era Birchwood hangars at Eareckson Air Station on Shemya Island, which were part of a World War II historic district. At Sitka, two areas of military support structures within the Sitka Navel Operating Base World War II NHL have been destroyed. A World War II hangar at the Yakutat Air Base, which is owned by the Alaska Department of Transportation and Public Facilities, has been determined to be eligible for listing in the National Register; it is in very poor condition and the current tenant has substantially altered it. In addition, a large portion of the Alaska Air Depot Historic District at JBER has been demolished, altered, or is planned to be altered in the future (Rickman, 2012).

Future actions that would affect World War II resources in Alaska or World War II NHLs in Alaska include the ongoing impacts of time and weather, as noted above. Resources located at active military installations or active airports may also face impacts from changing military missions and facility needs, such as the action at JBER (see Section 3.9.3.3). The only reasonably foreseeable future action identified that could affect the Ladd Field NHL or the Cold War Historic District is the Army Force Structure Realignment 2020. Whether Fort Wainwright's personnel population decreases under Alternative 1 of the proposed realignment or increases under Alternative 2, cultural resources could be affected. Construction of new facilities and removal of older, less functional facilities could impact resources in one or both historic districts.

Cumulative Effects of Actions

Alternative 1 would result in the immediate physical loss of Hangars 2 and 3, whereas the effects from the No Action Alternative would occur later in time. Initially, the No Action Alternative would have no impact because the hangars would remain physically intact and would receive baseline maintenance, but they would serve no military function and would remain vacant because of their unsafe status. Because no full-scale rehabilitation would take place under this alternative, it has the potential to result indirectly in the structural failure of one or both hangars, which would be a significant impact because it

would mean the loss of contributing resources within an NHL. The loss of the hangars, either through the direct impact of demolition or the indirect impact of structural failure through no action, would be a significant impact because two historic resources would be lost. The impact to the Ladd Field NHL and the Cold War Historic District would be moderate because both would retain historical significance and would retain their overall historic integrity.

Past adverse effects on World War II resources in Alaska and World War II NHLs in Alaska include deterioration of resources due to environmental conditions, passage of time, and intentional demolition of resources. The combined impact of these actions has resulted in a moderate impact to the state's collection of World War II resources.

The Proposed Action would result in the loss of two additional World War II buildings, which is a moderate impact to cultural resources. Combined with the past, present, and reasonably foreseeable future actions discussed above, the impacts from the Proposed Action would constitute a moderate cumulative impact to cultural resources because it is unlikely to contribute significantly to cumulative impacts to World War II resources in Alaska. Overall, the state's collection of World War II resources, including the Ladd Field NHL, would retain their historical significance despite the loss of the two hangars. The impacts of the Proposed Action to the collection of extant World War II-period aviation hangars would constitute a moderate cumulative impact to this resource pool. Many World War II hangars already have been demolished or modified since the end of the war and the loss of Hangars 2 and 3 would contribute to the dwindling numbers of these buildings.

Mitigation

In November 2011, the USAG FWA initiated Section 106 consultation with the Alaska SHPO and consulting parties to discuss impacts of the Proposed Action to implement a disposition for Hangars 2 and 3 and to determine appropriate mitigation for those impacts. Through this consultation, an MOA (Appendix A) was drafted that specified the agreed upon mitigation. Because of the large amount of previous mitigation associated with Hangars 2 and 3 (see Section 3.3.1.4), the Army has determined that a reduced amount of additional mitigation is appropriate to compensate for the adverse effects of the Proposed Action. The MOA for the preferred alternative focuses on using existing documentation to further goals and objectives for public outreach concerning Fort Wainwright's historic properties, mainly the Ladd Field NHL and the Cold War Historic District.

Mitigation under the No Action Alternative would be the same as under Alternative 1, Demolition of Hangars 2 and 3, except that the time frame for completing the stipulations would be based on the date

of execution of the MOA rather than on the demolition of the hangars. The mitigation measures, which are fully described in the MOA (see Appendix A), are summarized below.

- Public Outreach—In pursuit of more visibility and appreciation for the Ladd Field NHL, the USAG FWA Cultural Resources staff would be available upon request to present lectures to local Fairbanks groups (military and/or non-military) on Fort Wainwright's World War II history. The staff would engage the public through previously developed publications and would submit articles on historic preservation efforts at Fort Wainwright in local and state publications, websites, and newspapers. Starting six months after the execution of the MOA and continuing for five years, the USAG FWA would update and seek input from consulting parties on the public outreach projects.
- Re-evaluation of the Ladd Field NHL—The USAG FWA would complete a re-evaluation of the Ladd Field NHL through preparation of a revised draft NHL nomination, including an analysis of cumulative effects on the Ladd Field NHL from previous demolitions and additions. The USAG FWA would submit the appropriate documentation to the NPS, Alaska Region, which would then coordinate with the NHL Program in Washington, D.C. If Alternative 1 were selected, the USAG FWA would submit the re-evaluation documentation within five years after demolition of the hangars. If the No Action Alternative were chosen, the USAG FWA would submit the documentation within five years from the execution of the MOA.
- Stewardship of the Ladd Field NHL—With the expected loss of Hangars 2 and 3, the USAG FWA would refocus the efforts of its Public Works staff on effective stewardship through focused and purposeful management of the remaining elements that comprise the Ladd Field NHL. The USAG FWA would use existing and currently planned documentation to further historic preservation objectives and goals including, but not limited to, using the already developed Design Guidelines for the Ladd Field NHL, the educational PowerPoint presentations on historic preservation subjects, and the currently planned, but not yet developed, Historic Buildings Assessment Report. Within one year of completing the Historic Buildings Assessment Report for the Ladd Field NHL, recommendations from the report would be submitted for consideration in the Directorate of Public Works Annual Work Plan.

3.9.7.2 Hazardous Materials/Hazardous Waste

Geographic Scope, Time Frame, and Impact Criteria

The geographic scope for hazardous materials and hazardous waste includes the demolition footprint for Hangars 2 and 3 and the aircraft apron construction footprint. The ROI also includes the Fort

Wainwright and FNSB landfills because of the disposal of the demolition debris, which would include hazardous materials and hazardous waste. The past, present, and reasonably foreseeable future actions date as far back as 2009 and extend to 2020. The significance threshold for any cumulative effects would be triggered by significant increase in the use of hazardous materials and/or generation of hazardous waste.

Cause-and-Effect Relationships

The impacts from the increase in use of hazardous materials and generation of hazardous waste would increase the potential for environmental or human exposure to the toxic substances. Nevertheless, compliance with the applicable regulations and requirements in the use, handling, removal, storage, and disposal of the hazardous materials and hazardous waste would ensure that the potential for environmental or human exposure to the toxic substances is avoided or minimized.

Past, Present, and Reasonably Foreseeable Future Actions

Under the past actions, the implementation of the RCI resulted in short-term impacts because of the increase in use of hazardous materials and generation of hazardous waste from the demolition and construction activities. However, the substances were handled in a manner consistent with applicable regulations and requirements. Additionally, long-term, minor beneficial impacts resulted from the removal of lead contaminated soils from Family Housing areas. Phases 1 and 2 of the Stationing and Training of Increased Aviation Assets included construction and demolition within contaminated areas and the increase in use of hazardous materials and generation of hazardous waste from the demolition and construction activities and operations of the facilities. However, the substances were handled and would continue to be handled in a manner consistent with applicable regulations and requirements.

Under the current actions for the Golf Course Club House and Winter Activity Center, it is assumed that there would be an increase in use of hazardous materials and generation of hazardous waste from construction activities and operation of the facilities. However, the substances would be handled in a manner consistent with applicable regulations and requirements. Phases 3 and 4 of the of the Stationing and Training of Increased Aviation Assets includes construction and demolition of facilities within contaminated areas and the increase in use of hazardous materials and generation of hazardous waste from the demolition and construction activities and operations of the facilities. However, the substances have been and would be handled in a manner consistent with applicable regulations and requirements. The debris from the C&D activities would be disposed of in the Fort Wainwright (ACBM) and FNSB (all other materials) landfills.

Under reasonably foreseeable future actions, three proposed actions are analyzed: DoD and Veterans Affairs Family Care and Behavioral Health Clinic (FY 17), Army Force Structure Realignment 2020, and Relocation of the 18 AGRS from Eielson AFB to JBER.

The implementation of the DoD and Veterans Affairs Family Care and Behavioral Health Clinic would result in an increase in use of hazardous materials and generation of hazardous waste from the construction activities and operation of the facilities. However, the substances would be handled in a manner consistent with applicable regulations and requirements.

The proposed Army Force Structure Realignment 2020 has two action alternatives: Alternatives 1 and 2, under which Fort Wainwright would lose up to 4,900 or gain up to 1,000 personnel, respectively. Under Alternative 1, older less efficient facilities may be demolished or renovated, therefore, resulting in an increase in the short-term use of hazardous materials and generation of hazardous waste from demolition and construction activities. However, the loss of up to 4,900 personnel would result in long-term decrease in the use of hazardous materials and generation of hazardous waste associated with the operations of the facilities. Alternative 2 of the proposed Army Force Structure Realignment 2020 would result in an increase in short-term use of hazardous materials and generation of hazardous waste from the demolition and construction activities. The gain of up to 1,000 personnel would result in long-term increase in the use of hazardous materials and generation of hazardous waste associated with the operations of the facilities. Under either of the alternatives, the substances would be handled in a manner consistent with applicable regulations and requirements.

The Fort Wainwright landfill, which only accepts ACBM, is scheduled to close September 2015; for installation projects occurring after that date, all C&D debris, including ACBM would be disposed of at the FNSB landfill.

Relocation of the 18 AGRS from Eielson AFB to JBER is proposed to consolidate Eielson AFB functions and operations to reduce energy and sustainment costs and vacate several facilities, making them available for re-use or demolition. Therefore, it is likely that the proposed actions would result in an increase in short-term use of hazardous materials and generation of hazardous waste from the demolition and construction activities. The substances would be handled in a manner consistent with applicable regulations and requirements. The loss of personnel from relocation would likely result in a long-term decrease in the use of hazardous materials and generation of hazardous waste associated with the operations of the facilities. Because of compliance with applicable regulations and requirements and sufficient capacity at the landfills, the past, present, and future of the projects did not or would not result in significant impacts.

Cumulative Effects of Actions

Alternative 1, Demolition of Hangars 2 and 3, would result in long-term, beneficial impacts because hazardous materials, hazardous waste, and potentially contaminated soils associated with the hangars would be removed and the risk of potential exposure to the environment would be avoided or minimized. Short-term, minor impacts are anticipated during the demolition and construction activities from an increase in the amount of hazardous materials used and hazardous waste generated. The substances would be handled in a manner consistent with applicable regulations and requirements. The disposal of hazardous materials and hazardous waste would require space at the Fort Wainwright landfill (for ACBM) and the FNSB landfill (for other hazardous materials and hazardous waste). Sufficient capacity exists in the landfills for the amounts estimated under the Proposed Action during the proposed time frame of summer 2014. Therefore, the contribution from Alternative 1 to cumulative impacts at the installation or the landfills is not anticipated to be significant.

Under the No Action Alternative, moderate impacts related to hazardous materials, hazardous waste, and potentially contaminated soils would be expected. Although the USAG FWA would continue to follow its current procedures regarding the management of hazardous materials and hazardous waste on Fort Wainwright, the continued degradation of the hangars would result in an increased risk of exposure to the environment from potentially contaminated soils, hazardous materials, and hazardous waste. These types of exposures could occur if the buildings deteriorate to the point where the interiors are exposed to the elements or the buildings collapse. If the buildings collapse, the focused removal and disposal of the hazardous materials and hazardous waste would be difficult and could result in contaminating demolition debris that otherwise could be diverted from the landfills. This scenario could result in approximately 25,216 cubic yards of C&D debris requiring disposal as ACBM or hazardous materials and hazardous waste. However, the impacts to the FNSB landfill capacity is anticipated to be minor and not significant because in FY 11, approximately 298 tons per day of refuse material was taken to the landfill, and the landfill is projected to be operational until the year 2086. Additionally, the substances would be handled in a manner consistent with applicable regulations and requirements. Therefore, the contribution under the No Action Alternative to cumulative impacts at the installation or the landfills is not anticipated to be significant.

Mitigation

Because of compliance with regulations for handling, removing, transporting, and disposing of hazardous materials and hazardous waste for all of the past, present, and reasonably foreseeable future

actions, no cumulative, adverse impacts are anticipated; therefore, it is not anticipated that additional mitigation would be required.

3.10 Summary of Environmental Impacts and Mitigation Measures

Table 3-22 summarizes the environmental impacts associated with each alternative for each resource area evaluated in this Draft EIS. Mitigation measures are summarized following Table 3-22. In addition to direct and indirect and cumulative impacts, CEQ's NEPA regulation 40 CFR §1502.16 requires identification of many irreversible or irretrievable commitments of resources, adverse environmental impacts that cannot be avoided, and the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, if an alternative is implemented.

Table 3-22: Summary of Environmental Impacts

Resource Area	Alternative 1: Demolition of Hangars 2 and 3	Alternative 2: No Action
Air quality	Short-term and minor Long-term and beneficial	Short-term and minor Long-term and beneficial
Cultural resources	Severe—loss to Ladd Field NHL and Cold War Historic District Moderate—integrity of Ladd Field NHL and Cold War Historic District	Severe—loss to Ladd Field NHL and Cold War Historic District Moderate—integrity of Ladd Field NHL and Cold War Historic District
Hazardous materials/hazardous waste	Minor and beneficial	Moderate
Safety	Short-term and minor Long-term and beneficial	Moderate
Environmental justice and protection of children	No impact	No impact
Sustainability	Short-term and minor Long-term and beneficial	Moderate
Transportation	Short-term and minor Long-term—no impact	Short-term and minor Long-term—no impact

Notes: Cold War Historic District – Ladd Air Force Base Cold War Historic District, Ladd Field NHL – Ladd Field National Historic Landmark

For all of the resource areas, except cultural resources, none of the effects of the Proposed Action would result in significant impacts; therefore, no mitigation measures are needed and none were identified. For cultural resources, the loss of the hangars as contributing resources to the Ladd Field NHL and the Cold War Historic District, either through demolition under Alternative 1 or the likely uncontrolled collapse of the buildings under the No Action Alternative, would be a severe impact. Despite the physical loss of the hangars, the impact on the overall integrity of the Ladd Field NHL and Cold War Historic District would be moderate. Because of the adverse impacts on the Ladd Field NHL and the Cold War Historic District, mitigation measures were developed and agreed upon in an MOA among the USAG FWA, the Alaska SHPO, and the ACHP through the Section 106 consultation process. Because the end state of the hangars is anticipated to be the same under either alternative, the same mitigation is proposed for both alternatives. The only difference is that under the No Action Alternative, the time frame for completing the stipulations would be based on the date the MOA is signed, not when demolition occurs. The mitigation measures are as follows:

- Public Outreach—In pursuit of more visibility and appreciation for the NHL, the USAG FWA Cultural Resources staff would be available upon request to present lectures to local Fairbanks groups (military and/or non-military) on Fort Wainwright's World War II history. The staff would engage the public through previously developed publications, and submit articles on historic preservation efforts at Fort Wainwright in local and state publications, websites, and newspapers. Starting six months after the execution of the MOA and continuing for five years, the USAG FWA would update and seek input from consulting parties on the public outreach projects.
- Re-evaluation of the Ladd Field NHL—The USAG FWA would complete a re-evaluation of the Ladd Field NHL through preparation of a revised draft NHL nomination, including an analysis of cumulative effects on the Ladd Field NHL from previous demolitions and additions. The USAG FWA would submit the appropriate documentation to the NPS, Alaska Region, which would then coordinate with the NHL Program in Washington, D.C. If Alternative 1 were selected, the USAG FWA would submit the re-evaluation documentation within five years after demolition of the hangars. If the No Action Alternative were chosen, the USAG FWA would submit the documentation within five years from the execution of the MOA.
- Stewardship of the Ladd Field NHL—With the expected loss of Hangars 2 and 3, the USAG FWA would refocus the efforts of its Public Works staff on effective stewardship through focused and purposeful management of the remaining elements that comprise the Ladd Field NHL. The USAG FWA would use existing and currently planned documentation to further

historic preservation objectives and goals including, but not limited to, using the already developed Design Guidelines for the Ladd Field NHL, the educational PowerPoint presentations on historic preservation subjects, and the currently planned, but not yet developed, Historic Buildings Assessment Report. Within one year of completing the Historic Buildings Assessment Report for the Ladd Field NHL, recommendations from the report would be submitted for consideration in the Directorate of Public Works Annual Work Plan.

Though the Proposed Action would not result in significant impacts to any of the resource areas other than cultural resource, there are a number of standard measures, including BMPs, that would be employed to reduce or minimize potential impacts for air quality, hazardous materials and hazardous waste, and transportation. Below is a summary of the BMPs as previously discussed in each of the resource areas.

Air Quality

- To help control fugitive dust from ground-disturbing activities, construction vehicles would adhere to the following BMPs:
  - washing down all construction vehicles before leaving the project area and cleaning soil out of tracked equipment before entering the roadway,
  - using a water truck to moisten soils before any grading,
  - minimizing areas of ground disturbance, and
  - avoiding activity during periods of high wind.

Hazardous Materials/Hazardous Waste

- All projects on or near a current or past restoration site are required to comply with the Fort Wainwright Land Use Institutional Controls. Any potentially contaminated soil, debris or groundwater encountered during the action are required to be segregated, sampled, analyzed and containerized in approved containers. Soil and groundwater are not to be removed from any part of the installation or transported off the installation, regardless of whether it is clean or contaminated, without written authorization from an appointed Fort Wainwright representative.
- Projects involving excavation of soils in areas of known or suspected contamination are required to adhere to a work plan approved by ADEC and USEPA, coordinated through the Fort Wainwright Environmental Division prior to the start of work. Work plans typically include field screening for petroleum products and/or other identified contaminants of concern. Screened soils shall be managed in accordance with Fort Wainwright's SOP on Handling/Management of Contaminated Soil.

- Management of hazardous waste and materials are required to follow the instructions as per USARAK Regulation 200-1 Pamphlet, *Hazardous Materials and Regulated Waste Management*. The regulation applies to all military commands and units, civilian activities, tenants, contractors, subcontractors, and consultants working at USARAK facilities, including Fort Wainwright and the activities covered by this regulation include:
- Hazardous materials storage,
- Waste minimization and pollution prevention activities,
- Activities of waste generators, and
- Storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous materials must be in accordance with federal, state, and local laws and regulations.
- Storage, fueling and lubrication of equipment and motor vehicles must be conducted in a manner that affords the maximum protection against spill and evaporation. Managing and storing of fuel, lubricants and oil must be in accordance with all federal, state, and local laws and regulations. Used lubricants and used oil to be discarded must be stored in marked corrosion-resistant containers and recycled or disposed in accordance with federal, State, and local laws and regulations. Storage of fuel on the project site is required to be in accordance with all federal, State, and local laws and regulations.

Transportation

- During demolition of the hangars, the Army's contractor would provide a traffic control plan and temporary signing plan to provide road access to adjacent occupied building parking lots and entrances as well as safety measures for pedestrians and occupants of adjacent buildings. The traffic control plan will present the placement and times of use for any temporary traffic control devices in relation to the project site and construction activities and would follow the Manual on Uniform Traffic Control Devices standards.
- The Army's contractor would maintain and protect traffic on affected on-post roads during the construction period. This would include implementing measures for the protection and diversion of general traffic (watchman, flagmen, barricades, temporary lighting, signing), minimizing interference with general traffic along the proposed truck haul route on post, and investigating the adequacy of existing roads and bridge allowable limits.

3.10.1 Irreversible or Irretrievable Commitments of Resources

An irreversible commitment of resources is defined as the loss of future options. The term applies primarily to the effects of using nonrenewable resources (such as minerals, fossil fuels, or cultural resources) or to factors (such as soil productivity) that are renewable only over long periods. It could also apply to the loss of an experience as an indirect effect of a "permanent" change in the nature or character of the land.

An irretrievable commitment of resources refers to the loss of production or value of resources and represents lost opportunities for the period when the resource cannot be used. For example, the development of a vegetated area is an irretrievable action, but the action is not irreversible. If the area is returned to vegetation, it is possible to resume production.

3.10.1.1 Alternative 1: Demolition of Hangars 2 and 3

Under Alternative 1, demolition of Hangars 2 and 3 would result in the irretrievable commitment of cultural resources because the two historic hangars would be demolished. The fossil fuels required for demolition activities under the Proposed Action also represent irretrievable commitments of resources. The newly cleared space resulting from the demolition of Hangars 2 and 3 would be committed to a new use (currently, an aircraft apron) but would remain as a developed area. As a result, the amount of undeveloped land would not change or represent an irretrievable commitment of land for developed use.

3.10.1.2 Alternative 2: No Action

Under the No Action Alternative, use of energy at existing levels for electricity and heating would continue to be required for Hangars 2 and 3 to prevent snow buildup on the roofs and for minimal security measures (e.g., for the alarm installed to indicate loss of heat to the building). The fossil fuels required for the continued maintenance of the hangars under the No Action Alternative represent non-renewable and irreversible commitments of resources. This amounts to approximately 3,000 tons of coal annually to provide utilities to the two hangars. Although energy conservation is a vital and critical issue, the energy resource commitment under the No Action Alternative is not anticipated to be excessive in terms of region-wide usage and would not have an adverse effect upon the continued availability of energy resources. However, continued maintenance would require a substantial expenditure of federal funds, approximately $350,000 per hangar annually, that would not be directly retrievable.

3.10.2 Relationship between Short-term Use of the Environment and Long-term Productivity

3.10.2.1 Alternative 1: Demolition of Hangars 2 and 3

Under Alternative 1, existing developed areas where the hangars are located would remain developed with an impermeable surface. Implementing Alternative 1 would not result in any short-term use of the environment because land disturbance would be temporary during demolition activities and would occur on previously developed areas of the installation. Because no utilities would be needed to heat or provide electricity to the buildings after they are demolished, eliminating the need to provide heat and electricity to the hangars would be a beneficial impact and an improvement to the long-term sustainability of fossil fuels.

3.10.2.2 Alternative 2: No Action

The No Action Alternative would not involve demolishing Hangars 2 or 3. The facilities would continue to serve no active military function and would remain vacant while occupying space on Ladd Airfield. In addition, electricity and heat would continue to be provided to the hangars from sources derived from non-renewable fossil fuels, i.e., the coal-fired power plant located on Fort Wainwright. Short-term use of these resources would continue, but there would be no long-term improvement in the productivity of these non-renewable resources.

3.10.3 Unavoidable Adverse Effects

The environmental analysis of the alternatives includes the avoidance, minimization, or other mitigation of potential adverse effects on natural, cultural, and environmental resources; however, all adverse impacts may not be completely avoided and/or mitigated.

3.10.3.1 Alternative 1: Demolition of Hangars 2 and 3

Under Alternative 1, significant, long-term, and unavoidable impacts to cultural resources would result from demolishing Hangars 2 and 3. The loss of the hangars as contributing resources to the Ladd Field NHL and the Cold War Historic District would be a severe impact because the two resources would lose their ability to convey their historic significance, while impacts to the overall integrity of the Ladd Field NHL and Cold War Historic District would be moderate. Even with the loss of the two hangars, the Ladd Field NHL and Cold War Historic District would continue to contain a large number of original contributing resources and, thus, retain their overall integrity and continue to convey their

historical significance. The mitigation measures agreed upon through Section 106 consultation would compensate for the adverse effects of Alternative 1 (see Appendix A). Other adverse effects, however, would be temporary in nature and less than significant. For example, the effects on air quality due to emissions from construction equipment and increased traffic associated with construction vehicles would only occur during the temporary period of demolition activities.

3.10.3.2 Alternative 2: No Action

Under the No Action Alternative, significant, long-term, and unavoidable impacts to cultural resources would be expected. Although the physical presence of the hangars would be retained initially and the historic resource would be intact, over time the hangars would continue to deteriorate, further eroding the structural integrity of the facilities. Continued deterioration of the hangars would likely result in the hangars eventually suffering a catastrophic structural failure. Similar to Alternative 1, the loss of the hangars as contributing resources to the Ladd Field NHL and Cold War Historic District would be a severe impact, while the impact on the overall integrity of the Ladd Field NHL and Cold War Historic District would be moderate. Because the No Action Alternative would ultimately result in the physical loss of the hangars, mitigation measures under this alternative would be the same as under Alternative 1 (see Appendix A). Other long-term effects resulting from the No Action Alternative would not be significant but could be eliminated, such as utility and maintenance costs, and fossil fuel emissions associated with producing electricity and heat for the facilities, if the hangars were demolished.

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Table 4-1 lists the individuals responsible for preparing the Disposition of Hangars 2 and 3 Draft Environmental Impact Statement (EIS) and their areas of technical expertise. Table 4-2 lists those additional individuals who contributed to the Draft EIS.

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7.0 REFERENCES

Adams, B. 2013. Personal communication. Email between Brian Adams, U.S. Army Garrison Fort Wainwright, Alaska, and Matthew Sprau, U.S. Army Garrison Fort Wainwright, Alaska, National Environmental Policy Act Coordinator, on February 4, 2013.

Alaska Department of Environmental Conservation (AKDEC). 2008a. Air Quality Operating Permit United States Army Garrison (USAG) Fort Wainwright. December 5, 2008. Permit # AQ0236TVP02

Alaska Department of Environmental Conservation (AKDEC). 2008b. Air Quality Operating Permit Doyon Utilities LLC. December 5, 2008. Permit # AQ1121TVP01P

Alaska Department of Environmental Conservation (AKDEC). 2012. 18 AAC 50: Air Quality Control. April 8, 2012.

American Mechanical Inc. 2011. Waste Diversion Plan and LEED Implementation Plan for Organizational Storage, Ravens Roost, Demo.

Anderson, J. 2013. Personal communication. E-mail between Jenifer Anderson, Alaska Department of Transportation and Public Facilities, and Chris Dixon, The Louis Berger Group, Inc., on February, 11 2013. Turning movement counts attached to E-mail for Airport and Steese (May 18, 2010) and Badger and Montgomery (June 9, 2010).

Bittner, J. 1987. National Register of Historic Places Continuation Sheet. Ladd Field (National Historic Landmark) Fort Wainwright, Alaska. Amendment to Documentation of April 18, 1984, as of October 27, 1987. State Historic Preservation Officer. October 30, 1987.

Bittner, J. 2010. Bittner, Judith E., State Historic Preservation Officer/Office of History and Archaeology, Alaska. Letter to Michael T. Meeks, Director, Directorate of Public Works, U.S. Army Garrison Fort Wainwright. Subject: Fort Wainwright main cantonment survey. July 7, 2010.

CH2M HILL, Inc. 2009. Department of the Army, United States Garrison Fort Wainwright Final Environmental Impact Statement for the Stationing and Training of Increased Aviation Assets within U.S. Army Alaska. Prepared for U.S. Department of the Army. August 2009.

Clean Air Partners. no date. Air Quality Index. June, 21 2012.

Clemens, J. 2012. Personal communication. Phone conversation between Janet Clemens, Historian, Alaska Region, National Park Service, and Debra A. McClane, Architectural Historian, The Louis Berger Group, Inc. on July 17, 2012.

Cook, L. 1994. National Historic Landmark Nomination (Revision), Fort Glenn (Cape Field at Fort Glenn; Alaska Heritage Resource Survey #UNL-201). Cook, Linda, Historian, Alaska Regional Office, National Park Service. 1994.

Council on Environmental Quality (CEQ). 1997. Environmental Justice Guidance under the National Environmental Policy Act. Executive Office of the President. Washington, DC. Website: http://www.epa.gov/compliance/ej/resources/policy/ej_guidance_nepa_ceq1297.pdf. Accessed June 25, 2012.

Crosby, G. 2012. May 23, 2012, Site Visit Follow up Comments. Grant Crosby, Historical Architect, National Park Service, Alaska Regional Office. July 7, 2012.

Department of Defense (DoD). 1998. Department of Defense American Indian and Alaska Native Policy. October 18.

Department of Defense (DoD). 2001. DoD American Indian/Alaskan Native Policy: Alaska Implementation Guidance. May 11. Website: http://www.denix.osd.mil/na/upload/DoD-AI_AN-Policy_Alaska-Implementation-Guidance.pdf. Accessed November 16, 2012.

Department of Defense (DoD). 2006. Department of Defense Instruction, Number 4710.02: DoD Interactions with Federally-Recognized Tribes. Website: http://www.dtic.mil/whs/directives/corres/pdf/471002p.pdf. Accessed November 16, 2012.

Department of Defense (DoD). 2010. Strategic Sustainability Performance Plan, FY 2010. August 26. Website: http://www.acq.osd.mil/ie/download/green_energy/dod_sustainability/DoD%20SSPP-PUBLIC-26Aug10.pdf. Accessed February 18, 2012.

Department of Defense (DoD). 2012. More Disciplined Use of Resources, Fiscal Year 2013 Budget Estimates. Office of the Undersecretary of Defense (Comptroller)/Chief Financial Officer. March 2012.

Design Alaska and JCA. 2011. FWA Aviation Stationing Mitigation: Design Guidelines for Ladd Field World War II National Historic Landmark, Fort Wainwright, Alaska. Final Draft Report, June.

Design Alaska and JCA. 2012. FWA Aviation Stationing Mitigation Reuse Study of FWA's Hangars 2 and 3 Fort Wainwright, Alaska. Final Report. April 2012.

Dickinson-Oswald-Walch-Lee Engineers/Maynard NBBJ Alaska Architects and Planners. 1977. Building Information Schedule. Fort Wainwright, Alaska. Prepared under the Direction of Department of the Army U.S. Engineer District, Corps of Engineers, Anchorage, AK.

ECI/Hyer, Inc. 2003. Condition Assessment/Economic Analysis, Hangars 2085, 3005 & 3008, Fort Wainwright, Alaska.

Eielson Air Force Base, Office of History. no date. Guardians of the North: History of Mile 26 Airstrip and Eielson AFB. Eielson Air Force Base, Fairbanks, Alaska.

Envirosphere Company. 1988. World War II in Alaska: A Historic Resources and Management Plan. Prepared for the U.S. Corps of Engineers, Alaska District under the direction of National Park Service, Alaska Region.

Fish, D. 2012. Personal communication. Email between David Fish, Environmental Division and Carrie McEnteer U.S. Army Garrison Fort Wainwright, National Environmental Policy Act, Branch Chief, on October 16, 2012.

Goodwin and Associates, Inc. 1997. Historic Context for Department of Defense Facilities World War II Permanent Construction. Prepared for U.S. Army Corps of Engineers, Baltimore District. May 1997.

Gray, R.F. 2013. Personal communication. Email between Robert Franklin Gray, U.S. Army Garrison Fort Wainwright, Alaska, and Carrie McEnteer, U.S. Army Garrison Fort Wainwright, Alaska, National Environmental Policy Act Branch Chief, on January 29, 2013.

Griffin, H.L. 2013a. Personal communication. Email between Herbert L. Griffin Gray, U.S. Army Garrison Fort Wainwright, Alaska, and Carrie McEnteer, U.S. Army Garrison Fort Wainwright, Alaska, National Environmental Policy Act Branch Chief, on January 22, 2013.

Griffin, H.L. 2013b. Personal communication. Email between Herbert L. Griffin Gray, U.S. Army Garrison Fort Wainwright, Alaska, and Carrie McEnteer, U.S. Army Garrison Fort Wainwright, Alaska, National Environmental Policy Act Branch Chief, on January 22, 2013.

Griffin, H.L. 2013c. Personal communication. Email between Herbert L. Griffin Gray, U.S. Army Garrison Fort Wainwright, Alaska, and Matthew Sprau, U.S. Army Garrison Fort Wainwright, Alaska, National Environmental Policy Act Coordinator, on March 18, 2013.

Hall, T. 2011. Avoiding Costs by Building Partnerships in Sustainability Programs. Journal of Installation Management. Spring 2011.

Institute of Transportation Engineers. Trip Generation Manual. Eighth Edition. Washington, DC. 2008.

Intergovernmental Panel on Climate Change. 2007. Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Jacobs Engineering Group Inc. (Jacobs). 2012. Final 2011 Aviation Task Force Site (FTW357) After Action Report, Fort Wainwright, Alaska. U.S. Army Corps of Engineers, Alaska District, Environmental Remediation Services. Prepared by Jacobs Engineering Group Inc. June 2012.

The Louis Berger Group (LBG). 2008. Condition Assessment and Rehabilitation Plans, Hangars 2 and 3, Ladd Field National Historic Landmark. Fort Wainwright, Alaska. Prepared by The Louis Berger Group, Inc. with John Bowie Associates, Ammann & Whitney, Design Alaska, Inc., Soils Alaska, PC. Prepared for U.S. Army Medical Research Acquisition Activity, On Behalf of U.S. Army Environmental Center. January 2008.

McEnteer, C. 2012. Personal communication. Email between Carrie McEnteer, U.S. Army Garrison Fort Wainwright, Alaska, National Environmental Policy Act Branch Chief, and Michael Meeks, U.S. Army Garrison Fort Wainwright Director of Public Works, on April 26, 2012.

Meeks, M. 2010. Meeks, Michael T., Director, Directorate of Public Works, USAG FWA. Letter to Judith E. Bittner, State Historic Preservation Officer/Office of History and Archaeology, Alaska. Subject: Concurrence with USAG FWA's findings of eligibility for 207 properties within Fort Wainwright's main cantonment. June 10, 2010.

Miller, H.L. 2010. First-Hand: My Experience in the Army Air Force, 1943 to 1946. July 15, 2010. Website: http://www.ieeeghn.org/wiki/index.php/First-Hand:My Experience in the Army Air Force, 1943 to 1946.

National Park Service (NPS). 1997. National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation. Originally published 1990, revised 1991, 1995, 1997. Website: http://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf.

National Park Service. (NPS). 1998. NPS-28: Cultural Resource Management Guideline. Effective Date: June 11, 1998.

National Park Service (NPS). 2012a. National Historic Landmarks Program. Website: http://www.nps.gov/nhl/. Last Updated March 15, 2012.

National Park Service (NPS). 2012b. National Park Service Response Letter to U.S. Army Garrison Fort Wainwright, Alaska, Regarding the Possibility of a Funding Partnership. January 4, 2012.

National Oceanic and Atmospheric Administration (NOAA). 2013. National Weather Service, Climate Data for Fairbanks International Airport. March 2013. Website: http://pafg.arh.noaa.gov/cliMap/akCliOut.php.

Northern Testing Laboratories, Inc. (NTL). 1997. Bulk Asbestos Test Method: 40 CFR §763, Bulk Asbestos Identification by PLM. Prepared for the Fort Wainwright Public Works Department, Environmental Section. April, 281997.

Northern Testing Laboratories, Inc. (NTL). 1998. Bulk Asbestos Test Method: 40 CFR §763, Bulk Asbestos Identification by PLM. Prepared for the Fort Wainwright Department of Public Works, Environmental Section. June 25, 1998.

Northern Testing Laboratories, Inc. (NTL). 2003. Bulk Asbestos Test Method: 40 CFR §763, Bulk Asbestos Identification by PLM. Prepared for the Fort Wainwright Department of Public Works, Environmental Section. June 25, 1998 January 21, 2003.

Potschin, M. and R. Haines-Young. no date. Sustainability Impact Assessments: Limits, Thresholds and the Sustainability Choice Space.

Preservation Green Lab. 2011. The Greenest Building: Quantifying the Environmental Value of Building Reuse.

Price, K. and R.H. Sackett. 2001. Northern Defenders: Cold War Context of Ladd Air Force Base, Fairbanks, Alaska, 1947-1961. Prepared by Center for Ecological Management of Military Lands, Colorado State University, Ft. Collins, CO and Natural Resources Branch, U.S. Army Alaska, Fort Richardson, AK.

Provenghi, S.G. 2009. External Post-Tensioning Extends Load Carrying Lie of Wood Bowstring Trusses. Mackintosh & Mackintosh, Inc. Consulting Structural Engineers.

Rickman, S. 2012. Personal communication. Email between Summer Rickman, Architectural Historian, Review and Compliance, Alaska State Historic Preservation Office/Office of History and Archaeology, and Debra A. McClane, Architectural Historian, The Louis Berger Group, Inc. on July 17, 2012.

Ross, J.L., Captain, USAF. 1969. Construction and Operation of a World War II Army Air Force Forward Base: Shemya, Alaska, May 1943 to December 1945. Office of History, Alaska Air Force Command.

Siftar, K. 2012. Personal communication. Email between Kathleen Siftar, U.S. Army Garrison Fort Wainwright, Alaska, Master Planning and Facilities, and Carrie McEnteer, U.S. Army Garrison Fort Wainwright, Alaska, National Environmental Policy Act, Branch Chief. June 8, 2012.

Thompson, E.N. 1984a. NHL – WWII Pacific. Ladd Field, Fort Wainwright. National Register of Historic Places Inventory – Nomination Form, Ladd Field, Fort Wainwright. National Park Service, Denver Service Center. April 18, 1984.

Thompson, E.N. 1984b. National Register of Historic Places Inventory – Nomination Form , Adak Army Base and Adak Naval Operating Base, Adak Naval Station (Naval Air Station Adak). National Park Service, Denver Service Center.

Thompson, E. N. 1984c. National Register of Historic Places Inventory – Nomination Form, Dutch Harbor Naval Operating Base and Fort Mears, U.S. Army. National Park Service, Denver Service Center.

Thompson, E.N. 1984d. National Register of Historic Places Inventory – Nomination Form, Kodiak Naval Operating Base and Forts Greely and Abercrombie; U.S. Coast Guard Support Center and Fort Abercrombie State Historic Park. National Park Service, Denver Service Center.

Transportation Research Board. 2000. Highway Capacity Manual. Washington, DC.

U.S. Army Corps of Engineers (USACE). 2008. Environmental Assessment of Implementation of the Army Residential Communities Initiative. Prepared by US Army Corps of Engineers, Mobile District with Assistance from Tetra Tech, San Francisco, California. Prepared for Commander, Fort Wainwright. November, 2008.

U.S. Army Corps of Engineers (USACE). 2012a. US Army Corps of Engineers. Technical Memorandum for Hazardous Materials Survey, Fort Wainwright, Alaska. FTW373d Building 3005 Demolition. January 20, 2012.

U.S. Army Corps of Engineers (USACE). 2012b. US Army Corps of Engineers. Technical Memorandum for Hazardous Materials Survey, Fort Wainwright, Alaska. FTW373d Building 3008 Demolition. January 19, 2012.

U.S. Army Corps of Engineers (USACE). 2012c. Demolition of Buildings 3005 and 3008, Fort Wainwright, Alaska. Final, 19 November 2012.

U.S. Army Corps of Engineers (USACE). 2012d. FTW373D FY 14 Demo Bldg 3005 & 3008 Final CWE. Prepared by Binh Nguyen, U.S. Army Corps of Engineers. Prepared on November 26, 2012 for Fort Wainwright.

U.S. Army Environmental Command (USAEC) 2010. Environmental Protection Section 01 57 20.00 10.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 1991. ACM Survey Data Sheet. Asbestos Survey for Building 3005. July 17,1991.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2007a. Asbestos Management Plan Fort Wainwright Alaska. November 7, 2007.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2007b. Fort Wainwright Lead Based Paint (LBP) Management Plan. October 29, 2007.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2010a. Alaska Heritage Resources Survey Form FAI-00485, Building 3008, Hangar 2, Fort Wainwright, Alaska. Completed by USAG FWA Cultural Resources Staff.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2010b. Alaska Heritage Resources Survey Form FAI-004825, Building 3005, Hangar 3, Fort Wainwright, Alaska. Completed by USAG FWA Cultural Resources Staff.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2010c. Bldg. 3008 and Bldg. 1557 Lead Based Paint Sampling.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2011a. Environmental Impact Statement Hangars 2 and 3 Fort Wainwright, AK NEPA/Section 106 Site Visit/Kick-off Meeting Summary. October 17-20, 2011.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2011b. Five-Year Review Report: Third Five-Year Review Report for U.S Army. Garrison Fort Wainwright, Alaska. September 2011.

U.S. Army Garrison Fort Wainwright Alaska (USAG FWA). 2011c. Environmental Concerns for Construction, Demolition, and Renovation Projects. Revision 04. October 11, 2011.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2012a. Environmental Restoration Sites, Fort Wainwright Alaska. Environmental Restoration GIS Directorate of Public Works, Fort Wainwright, Alaska. Drawn by S. Staska. September 12, 2012.

U.S. Army Garrison Fort Wainwright, Alaska (USAG FWA). 2012b. General Support Aviation Battalion Hangar, PN-67113, DPW-10007-0J, Upgrades to Montgomery Road, February 27, 2012.

U.S. Department of the Army (Army). 1992. Pamphlet 415-3. Economic Analysis: Description and Methods. August 10.

U.S. Department of the Army (Army). 2004. The Army Strategy for the Environment: Sustain the Mission, Secure the Future. October 1, 2004

U.S. Department of the Army (Army). 2006a. Guide to Army Real Property Category Codes. Department of the Army Pamphlet 415-28. April 11.

U.S. Department of the Army (Army). 2006b. BRAC Realignment and Closure Manual for Compliance with the National Environmental Policy Act. January 2006.

U.S. Department of the Army (Army). 2009. Programmatic Agreement among the U.S. Department of the Army, the Advisory Council on Historic Preservation and the Alaska State Historic Preservation Officer Regarding Aviation Stationing. September 28, 2009.

U.S. Department of the Army (Army). 2010. Pamphlet 420-11. Project Definition and Work Classification. March 18.

U.S. Department of the Army (Army). 2011. U.S. Army Garrison Fort Wainwright Installation Operational Noise Management Plan. Prepared by Operational Noise Program Directorate of Environmental Health Engineering, U.S. Army Public Health Command. May 2011.

U.S. Department of the Army (Army). 2012a. The Army in Alaska. Fort Wainwright, Fort Greely. Installation Guide 2012 & Telephone Directory. Website: http://shade.keeptrees.com/publications/g31/The%20Army%20in%20Alaska%20-%20Ft%20Wainwright%20and%20Ft%20Greely/#page0.

U.S. Department of the Army (Army). 2012b. Memorandum for Principal Official of Headquarters, Department of the Army. Subject: American Indian and Alaska Native Policy. October 24, 2012.

U.S. Department of the Army (Army). 2012c. DD1391. PN77601 Aviation Complex, Phase 3B. Revised August 23.

U.S. Department of the Army (Army). 2012d. U.S. Army Program Executive Office for Simulation, Training, & Instrumentation (PEO STRI). Aviation Combined Arms Tactical Trainer - Aviation Reconfigurable Manned Simulator. Website: http://www.peostri.army.mil/PRODUCTS/AVCATT/. Last updated April 20, 2012.

U.S. Department of the Army (Army). 2012e. DD1391. PN81347 UAS Hangar. Revised August 3.

U.S. Department of the Army (Army). 2012f. DD1391 PN81380 Repair/Alter Building 3008 (Hangar 2). Revised August 3.

U.S. Department of the Army (Army). 2012g. Regulation 420-1 Army Facilities Management. Rapid Action Revision, August 24.

U.S. Department of the Army (Army). 2012h. Army Facility Investment Strategy (FIS) Guidance FY 15–19. October 1.

U.S. Department of Commerce. 2000. United States Census Bureau, Geography Division. Census Tracks and Block Numbering Areas. Created April 19, 2000. Website: www.census.gov/geo.www.cen_tract.html. Accessed June 25, 2012.

U.S. Department of Commerce. 2010a. United States Census Bureau. 2006–2010 American Community Survey 5-Year Estimates. Table DP-03 from 5 Year Survey. For Geographies: Fairbanks North Star Borough, State of Alaska; United States. Website: http://factfinder2.census.gov. Accessed June 25, 2012.

U.S. Department of Commerce. 2010b. United States Census Bureau. 2006–2010 American Community Survey 5-Year Estimates. Table DP-05 from 5 Year Survey. For Geographies: Fairbanks North Star Borough, State of Alaska; United States. Website: http://factfinder2.census.gov. Accessed June 25, 2012.

U.S. Department of the Navy (Navy). 2012. Environmental cleanup and closure of the former Adak Naval Air Facility, Adak, Alaska. Website: http://www.adakupdate.com/remote_historical_markers.html#D13. Accessed July 25, 2012.

U.S. Environmental Protection Agency (USEPA). 2000. Testing Your Home For Lead In Paint, Dust, and Soil. Office of Pollution Prevention and Toxics. 7404 EPA 747-K-00-001. July 2000.

U.S. Environmental Protection Agency (USEPA). 2009. Recover your Resources: Reduce, Reuse and Recycle Construction and Demolition Materials at Land Use Revitalization Projects. October 2009

U.S. Environmental Protection Agency (USEPA). 2012a. Greenbook: Nonattainment Status for Each County by Year. Alaska. Website: http://www.epa.gov/airquality/greenbook/anayo_ak.html. Last updated July 20, 2012. Accessed October 20, 2012.

U.S. Environmental Protection Agency (USEPA). 2012b. National Ambient Air Quality Standards. Website: http://www.epa.gov/ttn/naaqs/. Last updated March 22, 2012.

U.S. Environmental Protection Agency (USEPA). 2012c. Monitoring Data: Fairbanks North Star Borough, Alaska. Air Explorer. Website: http://www.epa.gov/airexplorer/monitor_kml.htm. Last updated March 13, 2012. Accessed June 21 2012.

U.S. Environmental Protection Agency (USEPA). 2012d. AQI Data: Fairbanks North Star Borough, Alaska. Air Explorer. Website: http://www.epa.gov/cgi-bin/htmSQL/mxplorer/trend_tile.hsql. Last updated March 13, 2012. Accessed June 21, 2012.

U.S. Environmental Protection Agency (USEPA). 2012e. Final Rule – Prevention of Significant Deterioration and Title V Operating Permit Greenhouse Gas (GHG) Tailoring Rule Step 3 and GHG Plantwide Applicability Limits Fact Sheet. July 12, 2012.

U.S. Environmental Protection Agency (USEPA). 2013. Greenhouse Gas Reporting Program: 2011 Data Sets. Summary 2011 GHG Data. Website: http://www.epa.gov/ghgreporting/ghgdata/2011data.html. Accessed March 15,2013.

U.S. Fish and Wildlife Service (USFWS). 2011. Email correspondence. Subject: ESA consultation number 07CAFB00-2012-SL-0012; EIS for long-term disposition of Hangars 2 and 3, USAG FWA. December 7, 2011.

U.S. Fish and Wildlife Service and National Park Service (USFWS and NPS). 2010. World War II Valor in the Pacific National Monument Alaska Unit. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C. September, 2010.

USKH. 2009. Six-Year Transportation Plan Update, prepared for Directorate of Public Works. April 2009.

U.S. National Archive and Records Administration. 2012. Building Information on U.S. Army Facilities in the Panama Canal Zone, 1960–1960. Website: http://research.archives.gov/description/574516. Accessed June 27, 2012.

Webb, J.L. 2011a. Hangar 2 (Building 3005) after Fire Structural Assessment Report. Fort Wainwright DPW. March 22, 2011.

Webb, J.L. 2011b. Hangar 3 (Building 3008) Structural Assessment Report. Fort Wainwright DPW. April 20, 2011.

8.0 GLOSSARY

Advisory Council on Historic Preservation—An independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation.

Affected Environment—The existing environment to be affected by a proposed action and alternatives.

Ambient Air—Any unconfined portion of the atmosphere: open air, surrounding air.

Apron—A paved portion of the airfield that is provided for aircraft parking, servicing, and loading.

Attainment Area—An area considered to have air quality as good as or better than the National Ambient Air Quality Standards as defined in the Clean Air Act. An area may be an attainment area for one pollutant and a nonattainment area for others.

Aviation Combined Arms Tactical Trainer (AVCATT)—A mobile, transportable, multi-station virtual simulation device designed to support unit collective and combined arms training

Best Management Practices (BMPs)—Methods that have been determined to be the most effective, practical means of preventing or reducing pollution or other adverse environmental impacts.

Building Information Schedule—The information compiled in a Building Information Schedule was used by the Army to evaluate building conditions and uses. The completed form contains information for each numbered building. This information includes available utilities, number of stories, square footage, type (permanent, semi-permanent, or temporary), year built, materials, uses (original, current, and recommended), and estimated life.

Charrette—A process that includes the preparation, planning, on-site workshop and completion of DD Form 1391 for a construction project. A charrette brings together an interdisciplinary team to reach consensus on the project site, scope and cost estimate that is then used in preparation of DD Form 1391.

Consulting Parties—Entities that have consultative roles in the Section 106 process, including the State Historic Preservation Officer, Indian tribes, representatives of local governments, individuals or organizations with a demonstrated interest in the undertaking, and members of the public (see 36 CFR §800.2).

Contributing Resource—A contributing building, site, structure, or object adds to the historical or traditional cultural associations, historic architectural qualities, or archaeological values for which a property is significant

Council on Environmental Quality (CEQ)—Established by Congress within the Executive Office of the President with passage of the National Environmental Policy Act of 1969. CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.

Cultural landscape—A geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Cultural resources—Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reason.

Cumulative Effects—Under National Environmental Policy Act regulations, the incremental environmental impact or effect of an action together with the effects of past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions (40 CFR §1508.7).

***de* minimis—**Levels for annual criteria pollutant emissions that are set according to criteria pollutant nonattainment area and maintenance area designations.

DD1391—DD Form 1391 is used by the DoD to submit requirements and justification to Congress to support funding requests for military construction.

Draft curtains—a noncombustible barrier used to contain flame, smoke, and fumes.

Endangered Species—"…any species (including subspecies or qualifying distinct population segment) that is in danger of extinction throughout all or a significant portion of its range" (ESA Section 3(6)). The lead federal agency, U.S. Fish and Wildlife Service, for the listing of a species as endangered is responsible for reviewing the status of the species on a five-year basis.

Environmental Impact Statement (EIS)—A document prepared to analyze the impacts on the environment of a proposed project or action and released to the public for comment and review. EISs are prepared when there is the potential for severe impacts on natural, cultural or socioeconomic

resources. An EIS must meet the requirements of National Environmental Policy Act, the CEQ, and the directives of the agency responsible for the proposed project or action.

Executive Order—Official proclamation issued by the President that may set forth policy or direction or establish specific duties in connection with the execution of federal laws and programs.

Historic Property—Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register. The term includes artifacts, records, and remains which are related to such district, site, building, structure, or object. 16 USC §470(w)(5).

Lend-Lease Operations—Under Public Law 77-11, the U.S. government assisted Allied forces during the war by providing Lend-Lease deliveries of aircraft and war materiel. From 1942–1945, the U.S. supplied the Soviet Union with more than 7,900 U.S.-built aircraft over the Alaska-Siberia, or ALSIB, route. Pilots from the Air Transport Command flew aircraft from Great Falls, Montana, through Canada and Alaska until they reached Ladd Field. At Ladd Field (the official transfer point), Soviet pilots took over the ferrying operation, flying the aircraft to Nome, then across Siberia and on to the European war front.

Level of Service (LOS)—A qualitative measure that describes operational conditions and provides an index to the quality of traffic flow. LOS is defined in letter designations from A (no congestion on the road) to F (roadways that are overcapacity).

Man Doors—Hinged doors that allow access into a building by turning a doorknob.

National Register of Historic Places (National Register)—A register of districts, sites, buildings, structures, and objects of significant state, local, and national historic properties, maintained by the Secretary of the Interior under authority of Section 2(b) of the Historic Sites Act of 1935 and Section 101(a)(1) of the National Historic Preservation Act of 1966, as amended.

National Environmental Policy Act of 1969 (NEPA)—The Act establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and it provides a process for implementing these goals within the federal agencies. It requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

National Historic Landmark—Nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. At present, there are only 2,500 properties with this distinction.

National Historic Preservation Act of 1966, as Amended (16 USC §470 et seq.)—An act to establish a program for the preservation of historic properties throughout the nation, and for other purposes, approved October 15, 1966 (PL 89-665; 80 Stat. 915; 16 USC §470 as amended by PL 91-243, PL 93-54, PL 94-422, PL 94-458, PL 96-199, PL 96-244, PL 96-515, PL 98-483, PL 99-514, PL 100-127, and PL 102-575). See Section 106 and National Register of Historic Places.

Record of Decision (ROD)—The ROD is the final step for agencies in the EIS process. It states what the decision is; identifies the alternatives considered, including the environmentally preferred alternative; and discusses mitigation plans, including any enforcement and monitoring commitments.

Region of Influence (ROI)—The geographic extent of potential effects from the alternatives on the important elements of a resource.

Scoping—Scoping, as part of NEPA, requires examining a proposed action and its possible effects, establishing the depth of environmental analysis needed, and determining analysis procedures, data needed, and task assignments. The public is encouraged to participate and submit comments on proposed projects during the scoping period.

Section 106—Section 106 of the NHPA, as Amended, and as implemented in 36 CFR §800, requires federal agencies to consider the effects of federally funded, regulated, or licensed undertakings on cultural resources listed in or eligible for inclusion in the National Register. In addition, the federal agency must afford the ACHP the opportunity to comment in the event that an undertaking will have an adverse effect on a cultural resource that is eligible for or listed in the National Register.

Semi-permanent Structure—The military employed two general types of construction in the war effort: temporary and permanent. These general types of World War II construction may be further subdivided into four categories: (1) permanent; (2) semi-permanent; (3) temporary; and (4) theater-of-operations. Permanent construction was intended for use after the war; it typically was built of masonry (brick, tile, or concrete) and metal frame. Semi-permanent construction typically consisted of cinderblock construction, wooden-frame construction clad with synthetic siding, or a mixture of wooden frame and masonry. Semi-permanent construction often resulted from ad hoc compromises between the desire for permanent construction and shortages of time and material.

State Historic Preservation Officer—The official appointed by the governor of a state or territory to carry out the state's responsibilities under the National Historic Preservation Act.

Take—From Section 3(18) of the Endangered Species Act, "take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Under the Migratory Bird Treaty Act, "take" is defined broadly and includes the removal of occupied nests.

Threatened species—Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Undertaking—A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including: (a) those carried out by or on behalf of the agency; (b) those carried out with federal financial assistance; (c) those requiring a federal permit, license, or approval; and (d) those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency.

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