

FINAL

**ENVIRONMENTAL ASSESSMENT
OF INSTALLATION DEVELOPMENT
AT
FAIRCHILD AIR FORCE BASE, WASHINGTON**



DECEMBER 2012

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Fairchild AFB uses the Fairchild AFB General Plan; Long-Range Development Plan (LRDP) Survival, Evasion, Resistance, and Escape (SERE) School Master Plan, and resource management plans including the Integrated Natural Resources Management Plan and Integrated Cultural Resources Management Plan to project installation development requirements. These plans propose demolition construction, infrastructure improvement, natural infrastructure management, and strategic sustainability performance projects intended to ensure that the installation can sustain its current and future national security operations and mission-readiness status. Fairchild AFB seeks to improve the continuing installation development process by evaluating in a single EA selected projects from those proposed in the General Plan, LRDP, SERE School Master Plan, and resource management plans for installation development, called the Installation Development EA (IDEA). The Proposed Action is to implement a range of selected projects, such as demolition of aging facilities, new facility construction, facility upgrades, repair and renovation, utilities upgrades, infrastructure improvements, natural infrastructure management and other environmental projects, and strategic sustainability performance projects that would be completed or implemented during the next 5 fiscal years (FYs) (i.e., FY 2013 to FY 2018). The IDEA uses the fence-line-to-fence-line approach, capturing and addressing selected projects within the installation boundary that have been proposed by host and tenant agencies in accordance with Interservice Support Agreements. The intent of the IDEA is to address the Proposed Action of implementing installation development actions for continuing development on Fairchild AFB to ensure that future mission and facility requirements are met. The scope of the IDEA includes a detailed analysis of the selected projects, an evaluation of alternatives applicable to the selected projects and various categories of projects, and an analysis of the cumulative effects on the natural and man-made environment of all other identified projects from the installation development and resource management plans. Through the IDEA, Fairchild AFB provides a constraints-based environmental impact analysis of installation development actions for projects selected from those projected over the next 5 years and thus helps to identify environmental concerns that could exist throughout the installation and those unique to specific areas of the installation. The analysis draws from the knowledge gained from extensive recent evaluations for similar types of projects to determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation's development. The IDEA has been prepared to evaluate the Proposed Action and alternatives, including

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)
AND
FINDING OF NO PRACTICABLE ALTERNATIVES (FONPA)
Environmental Assessment of Installation Development
at Fairchild Air Force Base (AFB), Washington

Introduction

Federal actions that potentially involve significant impacts on the environment must be reviewed in accordance with the National Environmental Policy Act (NEPA) and all other applicable laws. The United States Air Force (USAF) has completed an Environmental Assessment of Installation Development (IDEA) to address the potential environmental consequences associated with implementing selected installation development actions at Fairchild Air Force Base (AFB), Washington, as found in the *Fairchild AFB General Plan; Long-Range Development Plan; Survival, Evasion, Resistance, and Escape School Master Plan*; and resource management plans including the *Integrated Natural Resources Management Plan* and *Integrated Cultural Resources Management Plan*. The selected installation development projects were grouped into five categories: demolition, construction, infrastructure improvement, natural infrastructure management, and strategic sustainability performance because of common elements of their activities and the nature of their expected potential environmental impacts. The selected installation development projects include the following:

Demolition Projects

- D1. Demolish Ammunition Storage Facilities
- D2. Demolish Building 2001
- D3. Demolish Steam Heat Mains and Abandon Steam Pits Installationwide
- D4. Demolish Aircraft Hangars (Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019)

Construction Projects

- C1. Construct Pipeline Dormitory
- C2. Construct Precision Measurement Equipment Laboratory Facility
- C3. Construct Peacetime Governmental Hostage/Detention Training Facility
- C4. Construct Base Operations Facility
- C5. Construct Airfield Communications Facility
- C6. Construct Civil Engineer Squadron/Contracting Squadron Complex

Infrastructure Improvement Projects

- I1. Repair Electrical Power South Substation (Building 1270)
- I2. Repair/Right-size Airfield: Multiple Areas

Natural Infrastructure Management Projects

- NI1. Prairie Restoration/Long-term Weed Control Phase I and Phase II

Strategic Sustainability Performance Projects

- S1. Repair/Replace, Heating, Ground-Source Heat Pump-Boiler Hybrid, Air Force Office of Special Investigations Building 644

The Proposed Action, implementing these 14 selected projects, reasonable alternatives for the selected projects, and the No Action Alternative, have been reviewed in accordance with NEPA as implemented by the regulations of the Council on Environmental Quality (CEQ) and USAF regulation 32 Code of Federal Regulations (CFR) 989, *Environmental Impact Analysis Process (EIAP)*. The analyses focus on the following environmental resources: noise, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, infrastructure, hazardous materials and waste, and safety. Details of the potential environmental consequences can be found in the attached IDEA.

Project NI1 would occur in an area of the installation known to contain Spalding's catchfly (*Silene spaldingii*) (a federally and state-listed threatened species) and its associated habitat. In February 2007, Fairchild AFB submitted a Biological Assessment (BA) to the U.S. Fish and Wildlife Service (USFWS) to address weed control and habitat protection. The BA concluded that these activities "may affect, but not likely to adversely affect" Spalding's catchfly, and could positively affect their habitat increasing the potential for further recovery. In May 2007, Fairchild AFB received concurrence from the USFWS that the proposed activities, as described in the BA, are "not likely to adversely affect" Spalding's catchfly. Range-wide recovery actions proposed by the Draft Recovery Plan for Spalding's catchfly are detailed in the BA.

Implementation of Projects D1, D4, C4, and C6 would result in an adverse effect on National Register of Historic Places (NRHP) eligible properties at Fairchild AFB under Section 106 of the National Historic Preservation Act. Project D1 includes the demolition of the ammunition storage facilities. These facilities are considered NRHP-eligible. Project D4 includes the demolition of Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019. These facilities were constructed between 1955 and 1958 and are contributing properties to the Flight Line Historic District. Projects C4 and C6 include the demolition of Buildings 1 and 2023, respectively, that were constructed in 1943 and are NRHP-eligible. Fairchild AFB, in coordination with the Washington SHPO, developed a Memorandum of Agreement for demolition activities involving NRHP-eligible structures. In accordance with the MOA, the USAF would ensure stipulations listed in the MOA (Building-Specific Mitigation, Flightline-Specific Mitigation, Public Education and Display, Duration, Post-Review Discoveries, Monitoring and Reporting, Dispute Resolution, Amendments, Termination, and Anti-Deficiency Act) are implemented for demolition of NRHP-eligible properties.

Finding of No Practicable Alternative. Executive Order (EO) 11990, *Protection of Wetlands*, (24 May 1977) directs agencies to avoid to the extent possible the long- and short-term, adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland and the proposed construction incorporates all possible measures to limit harm associated with development in the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands. In accordance with EO 11990 and 32 CFR Part 989, a FONPA must accompany the FONSI stating why there are no practicable alternatives to development within or affecting wetland areas.

Projects D1 and NI1 would involve construction activities in wetland areas (32 CFR Part 989). As noted in Section 2.2 of the attached IDEA, practicable alternatives are not available for Projects D1 or NI1 because the projects are constrained to their current locations. No alternatives to Project D1 are available, because the existing facilities have been determined not to meet current mission requirements and have been deemed to be obsolete or economically infeasible to repair or renovate. No alternatives to Project NI1 are available, because it is a site-specific action that cannot be conducted elsewhere.

As noted in the attached IDEA, implementation of Projects D1 and NI1 would result in short-term, negligible to minor, direct, adverse impacts on wetlands. However, impacts on wetlands would not be

considered significant and would be reduced to the maximum extent practicable through project design and implementation of environmental protection measures. These environmental protection measures would include, but are not limited to, flagging the wetland boundary; installing silt fencing; establishing a wetland buffer; and following the policies and procedures detailed in the installation's erosion-and-sediment-control plan and Spill Prevention, Control, and Countermeasures Plan. Any necessary agency coordination and required permits would be acquired prior to commencing any ground-breaking activities.

Public Outreach. The USAF released the Draft IDEA and FONSI/FONPA for a 45-day public review period from 21 August to 5 October 2012. A Notice of Availability was published in the *Spokesman Review* on 21 August 2012 to announce the availability of the Draft IDEA and FONSI/FONPA for a 45-day review period. Copies of the Draft IDEA and FONSI/FONPA were made available at the Spokane Public Library, at the Fairchild AFB Library, and on the Fairchild AFB Web site. No comments were received during the 45-day review period.

Finding of No Significant Impact. Based on the information and analysis presented in the attached IDEA conducted in accordance with the requirements of NEPA; the CEQ Regulations implementing NEPA; and USAF implementing regulations set forth in 32 CFR 989 (EIAP), as amended, I conclude that implementation of the Proposed Action will not result in significant impacts on the quality of the natural or man-made environment. For these reasons, this FONSI/FONPA is approved and preparation of an Environmental Impact Statement is not warranted. This decision has been made after taking into account all submitted information, and considering a full range of practicable alternatives that will meet project requirements and is within the legal authority of the USAF.



TIMOTHY S. GREEN
Brigadier General, USAF
Director of Installations and Mission Support



Date

Attachment: *Environmental Assessment of Installation Development at Fairchild Air Force Base, Washington*

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ACRONYMS AND ABBREVIATIONS

µg/m ³	micrograms per cubic meter	DAHP	Department of Archaeology and Historic Preservation
92 ARW	92d Air Refueling Wing	dB	decibel
141 ARW	141st Air Refueling Wing	dBA	A-weighted decibel
242 CBCS	242d Combat Communications Squadron	dBc	C-weighted decibel
256 CBCS	256th Combat Communications Squadron	dBp	unweighted decibel
ACHP	Advisory Council on Historic Preservation	DERP	Defense Environmental Restoration Program
ACM	asbestos-containing materials	DNL	day-night average A-weighted sound level
ADA	Americans with Disabilities Act	DOD	Department of Defense
AETC	Air Education and Training Command	EA	Environmental Assessment
AFB	Air Force Base	EFH	Essential Fish Habitat
AFI	Air Force Instruction	EIAP	Environmental Impact Analysis Process
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health	EISA	Energy Independence and Security Act
AFOSI	Air Force Office of Special Investigations	EO	Executive Order
AFPD	Air Force Policy Directive	ERP	Environmental Restoration Program
AFRC	Armed Forces Reserve Center	ESA	Endangered Species Act
AMC	Air Mobility Command	ESCP	Erosion and Sediment Control Plan
AOC	Area of Concern	ESOHC	Environment, Safety, and Occupational Health Council
APE	Area of Potential Effect	EWNII	Eastern Washington-Northern Idaho Interstate
APZ	Accident Potential Zone	FAA	Federal Aviation Administration
AQCR	Air Quality Control Region	FOD	foreign object damage
AST	aboveground storage tank	FONPA	Finding of No Practicable Alternative
AT/FP	Anti-Terrorism/Force Protection	FONSI	Finding of No Significant Impact
BA	Biological Assessment	FUB	Facility Utilization Board
BCE	Base Civil Engineer	ft ²	square feet
BMP	best management practice	FY	fiscal year
BRAC	Base Realignment and Closure	GHG	greenhouse gas
BTEX	benzene, toluene, ethylbenzene, and xylene	GIS	Geographical Information System
CAA	Clean Air Act	GSHP	ground-source heat pump
CAIS	Chemical Agent Identification Sets	HAP	hazardous pollutant
CATEX	categorical exclusion	HAZWOPER	Hazardous Waste, Operations, and Emergency Response
CEQ	Council on Environmental Quality	HMMP	Hazardous Materials Management Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	HQ	headquarters
CES	Civil Engineering Squadron	HUD	U.S. Department of Housing and Urban Development
CFR	Code of Federal Regulations	HVAC	heating, ventilating, and air conditioning
CO	carbon monoxide	ICRMP	Integrated Cultural Resources Management Plan
CO ₂	carbon dioxide	IDEA	Installation Development Environmental Assessment
CONS	Contracting Squadron		
CRM	Cultural Resources Manager		
CRP	Compliance Restoration Program		
CWA	Clean Water Act		
CZ	Clear Zone		

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IICEP	Interagency and Intergovernmental Coordination for Environmental Planning	PSD	prevention of significant deterioration
INRMP	Integrated Natural Resources Management Plan	PVC	polyvinyl chloride
IRP	Installation Restoration Program	QD	quantity-distance
JPRA	Joint Personnel Recovery Agency	RCRA	Resource Conservation and Recovery Act
kV	kilovolt	ROI	region of influence
LBP	lead-based paint	SAP	Satellite Accumulation Point
LEED	Leadership in Energy and Environmental Design	SCDBP	Spokane County Department of Building and Planning
LRDP	Long-Range Development Plan	SDWA	Safe Drinking Water Act
LUC	land use control	SERE	Survival, Evasion, Resistance, and Escape
mg/m ³	milligrams per cubic meter	SHPO	State Historic Preservation Office
MILCON	military construction	SIP	State Implementation Plan
MMRP	Military Munitions Response Program	SME	subject matter expert
MOA	Memorandum of Agreement	SO ₂	sulfur dioxide
MSW	Municipal Solid Waste	SOP	standard operating procedure
NAAQS	National Ambient Air Quality Standards	SPCC	Spill Prevention, Control, and Countermeasures
NAF	Non-Appropriated Funds	SRCAA	Spokane Regional Clean Air Agency
NAGPRA	Native American Graves Protection and Repatriation Act	SRM	Sustainment, Restoration, and Modernization
NAVAID	Navigation Aid	SSPP	Strategic Sustainability Performance Plan
NEPA	National Environmental Policy Act	TCE	trichloroethylene
NMFS	National Marine Fisheries Service	TCP	traditional cultural property
NO ₂	nitrogen dioxide	tpy	tons per year
NOA	Notice of Availability	TSCA	Toxic Substances Control Act
NO _x	nitrogen oxides	U.S.C.	United States Code
NPDES	National Pollutant Discharge Elimination System	UFC	Unified Facilities Criteria
NSR	New Source Review	UHF	ultra high frequency
O ₃	ozone	USACE	U.S. Army Corps of Engineers
OSHA	Occupational Health and Safety Administration	USAF	U.S. Air Force
OWS	oil/water separator	USFWS	U.S. Fish and Wildlife Service
Pb	lead	USGS	U.S. Geological Society
pCi/L	picocuries per liter	UST	underground storage tank
percent g	percent of the force of gravity	UXO	unexploded ordinance
PK15(met)	Peak sound pressure levels	VHF	very high frequency
PM ₁₀	particulate matter equal to or less than 10 microns in diameter	VOC	volatile organic compound
PM _{2.5}	particulate matter equal to or less than 2.5 microns in diameter	WAC	Washington Administrative Code
PMEL	Precision Measurement Equipment Laboratory	WANG	Washington Air National Guard
POL	petroleum, oil, and lubricants	WDE	Washington State Department of Ecology
ppb	parts per billion	WDFW	Washington Department of Fish and Wildlife
ppm	parts per million	WDNR	Washington Department of Natural Resources
		WDOE	Washington Department of Ecology
		WNHP	Washington Natural Heritage Program

COVER SHEET
FINAL ENVIRONMENTAL ASSESSMENT
OF INSTALLATION DEVELOPMENT AT
FAIRCHILD AIR FORCE BASE, WASHINGTON

Responsible Agencies: U.S. Air Force (USAF); Headquarters Air Mobility Command (AMC); Scott Air Force Base (AFB), Illinois; and Fairchild AFB, Washington.

Affected Location: Fairchild AFB.

Proposed Action: Implementation of Selected Installation Development Projects.

Report Designation: Final Environmental Assessment (EA).

Abstract: Fairchild AFB uses the *Fairchild AFB General Plan; Long-Range Development Plan (LRDP); Survival, Evasion, Resistance, and Escape (SERE) School Master Plan*, and resource management plans including the *Integrated Natural Resources Management Plan* and *Integrated Cultural Resources Management Plan* to project installation development requirements. These plans propose demolition, construction, infrastructure improvement, natural infrastructure management, and strategic sustainability performance projects intended to ensure that the installation can sustain its current and future national security operations and mission-readiness status. Fairchild AFB seeks to improve the continuing installation development process by evaluating in a single EA selected projects from those proposed in the General Plan, LRDP, SERE School Master Plan, and resource management plans for installation development, called the Installation Development EA (IDEA). The Proposed Action is to implement a range of selected projects, such as demolition of aging facilities, new facility construction, facility upgrades, repair and renovation, utilities upgrades, infrastructure improvements, natural infrastructure management and other environmental projects, and strategic sustainability performance projects that would be completed or implemented during the next 5 fiscal years (FYs) (i.e., FY 2013 to FY 2018). The IDEA uses the fenceline-to-fenceline approach, capturing and addressing selected projects within the installation boundary that have been proposed by host and tenant agencies in accordance with Interservice Support Agreements. The intent of the IDEA is to address the Proposed Action of implementing installation development actions for continuing development on Fairchild AFB to ensure that future mission and facility requirements are met. The scope of the IDEA includes a detailed analysis of the selected projects, an evaluation of alternatives applicable to the selected projects and various categories of projects, and an analysis of the cumulative effects on the natural and man-made environment of all other identified projects from the installation development and resource management plans.

Through the IDEA, Fairchild AFB provides a constraints-based environmental impact analysis of installation development actions for projects selected from those projected over the next 5 years and thus helps to identify environmental concerns that could exist throughout the installation and those unique to specific areas of the installation. The analysis draws from the knowledge gained from extensive recent evaluations for similar types of projects to determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation's development.

The IDEA has been prepared to evaluate the Proposed Action and alternatives, including the No Action Alternative. Resources that were considered in the impacts analysis are noise, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, infrastructure, hazardous materials and waste, and safety. Inquiries regarding this document should be directed to the 92 ARW Public Affairs Office, Fairchild AFB, Washington 99011-9688. Telephone calls can be directed to 509-247-5706.

FINAL

**ENVIRONMENTAL ASSESSMENT
OF
INSTALLATION DEVELOPMENT
AT
FAIRCHILD AIR FORCE BASE, WASHINGTON**

**HEADQUARTERS AIR MOBILITY COMMAND
INTEGRATED PLANNING BRANCH
507 SYMINGTON DRIVE
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DECEMBER 2012

**FINAL ENVIRONMENTAL ASSESSMENT
OF INSTALLATION DEVELOPMENT AT
FAIRCHILD AIR FORCE BASE, WASHINGTON**

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1. Purpose, Need, and Scope

Fairchild Air Force Base (AFB) seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single Environmental Assessment (EA) selected projects from those projects proposed in the *Fairchild AFB General Plan* (FAFB 2009a); *Long-Range Development Plan* (LRDP) (FAFB 2010c); *Survival, Evasion, Resistance, and Escape (SERE) School Master Plan* (FAFB 2007b); and resource management plans including the *Integrated Natural Resources Management Plan* (INRMP) (FAFB 2010b) and *Integrated Cultural Resources Management Plan* (ICRMP) (FAFB 2005a). The 92d Air Refueling Wing (92 ARW) at Fairchild AFB, Washington, and Headquarters (HQ) Air Mobility Command (AMC) believe a comprehensive U.S. Air Force (USAF) Environmental Impact Analysis Process (EIAP) document would improve the continuing activity of installation development and facilitate compliance with the National Environmental Policy Act (NEPA) documentation and requirements. As a result, 92 ARW and HQ AMC have initiated an evaluation in this EA of the selected projects from the programmed and reasonably foreseeable projects identified for the next 5 fiscal years (FYs) (i.e., FY 2013 to FY 2018).

This document constitutes an Installation Development EA (IDEA). The intent of the IDEA is to address the Proposed Action of implementing selected installation development actions as found in the Fairchild AFB General Plan, LRDP, SERE School Master Plan, and resource management plans. These plans provide for future development of the installation to accommodate future mission and facility requirements, include projects for transportation improvements and airfield and utility infrastructure enhancements, address natural and cultural resources management, and consider development constraints and opportunities and land use relationships. Since the establishment of Fairchild AFB, as with all other USAF installations, development of the installation has occurred continuously.

Fairchild AFB General Plan. The General Plan was developed to provide the Commander with a summary of Fairchild AFB's current and future capability to support its assigned missions. The development of the General Plan involved the Washington Air National Guard (WANG), Armed Forces Reserve Center (AFRC), SERE School, and Joint Personnel Recovery Agency (JPRA). Involving these tenants of Fairchild AFB in developing the General Plan enabled all units to balance their needs and desires with various comprehensive planning elements of land use functional relationships, cultural and natural resources, and environmental factors, which influence and affect the continued improvement and development of Fairchild AFB. The General Plan identifies areas suitable for redevelopment, potential growth, and future missions. In addition, the General Plan provides information on constraints and opportunities for the development of installation infrastructure, existing and future land use, and areas for capital improvement programs. The plan establishes a long-range framework for siting, programming, designing, and constructing all of the installation facilities. The General Plan is a living document that is revised as mission requirements generate new planning (FAFB 2009a).

Long-Range Development Plan. The LRDP was developed in response to two factors: (1) the 2005 Base Realignment and Closure (BRAC) Commission directed the 92 ARW and 141st Air Refueling Wing (141 ARW) at Fairchild AFB to realign in accordance with mission requirements, and the 242d Combat Communications Squadron (242 CBCS) and 256th Combat Communications Squadron (256 CBCS) to relocate from Mann and Walker Halls, which were closed; and (2) World War II wooden buildings were found to be structurally unsafe. The comprehensive LRDP has a 20-year planning horizon (four 5-year phases) to identify the required classic association actions while continuing to enhance the living quality of Fairchild AFB. The primary focus of the LRDP is "Total Force Integration" (restructuring initiative developed in 2008 by the U.S. Secretary of Defense), future mission beddown, and World War II building failures. The LRDP also evaluates all installation units and infrastructure, such as roads and access points, to ensure that any recommendations support overall installation development (FAFB 2010c).

In general, the General Plan, LRDP, SERE School Master Plan, and resource management plans provide for future development of the installation to accommodate future mission and facility requirements, include projects for transportation improvements and airfield and utility infrastructure enhancements, and consider development constraints and opportunities and land use relationships. These plans are linked to individual funding programs, such as BRAC; Military Construction (MILCON), Operations, and Maintenance; Military Family Housing; Sustainment, Restoration, and Modernization; Anti-Terrorism/Force Protection (AT/FP); Nonappropriated Funds; and others. The General Plan, LRDP, SERE School Master Plan, and resource management plans were examined to provide a consolidated list of projects that are planned and programmed over the next 5 FYs for the continued physical development of the installation to support air mobility missions and other readiness training and operational assignments. In addition to evaluating in detail the selected projects, the IDEA serves as a baseline for future environmental analysis of mission and training requirements and future projects. Alternatives applicable to the various categories of projects are provided. An analysis of the potential cumulative effects associated with all the other projects from the installation development plans is also included in this IDEA in the cumulative impacts section.

This section of the IDEA includes background information on the location and mission of Fairchild AFB, a statement of the purpose of and the need for the Proposed Action, an overview of the scope of the analysis, and a summary of key environmental compliance requirements.

1.1 Location and Mission

Fairchild AFB is a 4,551-acre military installation in Spokane County, Washington. It is approximately 12 miles west of the City of Spokane, in the east-central portion of Washington State (see **Figure 1-1**). Fairchild AFB is home to the 92 ARW and is under the command and control of AMC. The mission of Fairchild AFB is to “Support America’s War Fighters with Global Reach Airpower and Agile Combat Support” and to “Perform air refueling, airlift, and aeromedical evacuation missions supporting U.S. and coalition conventional operations and United States Strategic Command strategic deterrence missions.” Together, the 92 and 141 ARWs operate 35 KC-135 aircraft and 56 aircrews to support worldwide military missions refueling fighter, bomber, reconnaissance, and airlift aircraft; and provide rapid and reliable passenger and cargo airlift. In addition to the 92 ARW, Fairchild AFB is home to more than 15 tenant units including the WANG, AFRC, SERE School, and JPRA. The AFRC opened in 2010 and the 242 and 256 CBCS units of the WANG relocated in 2011 into existing facilities.

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to complete selected construction, demolition, infrastructure improvement, natural infrastructure management, and strategic sustainability performance projects from among those identified as necessary to ensure that future mission and facility requirements are met. The analysis of applicable installation development projects in a single EA will facilitate an understanding of the potential environmental consequences associated with the continuing installation development process; facilitate the NEPA review and compliance process; eliminate project fractionation and segmentation; improve the coordination of land use planning; expedite project execution by using early planning; reduce installation, reviewing agency, and major command workloads; provide cost savings; help better evaluate potential cumulative environmental impacts; assist in maintaining a baseline for future analysis; support strategic basing decisionmaking; and encourage agency coordination.

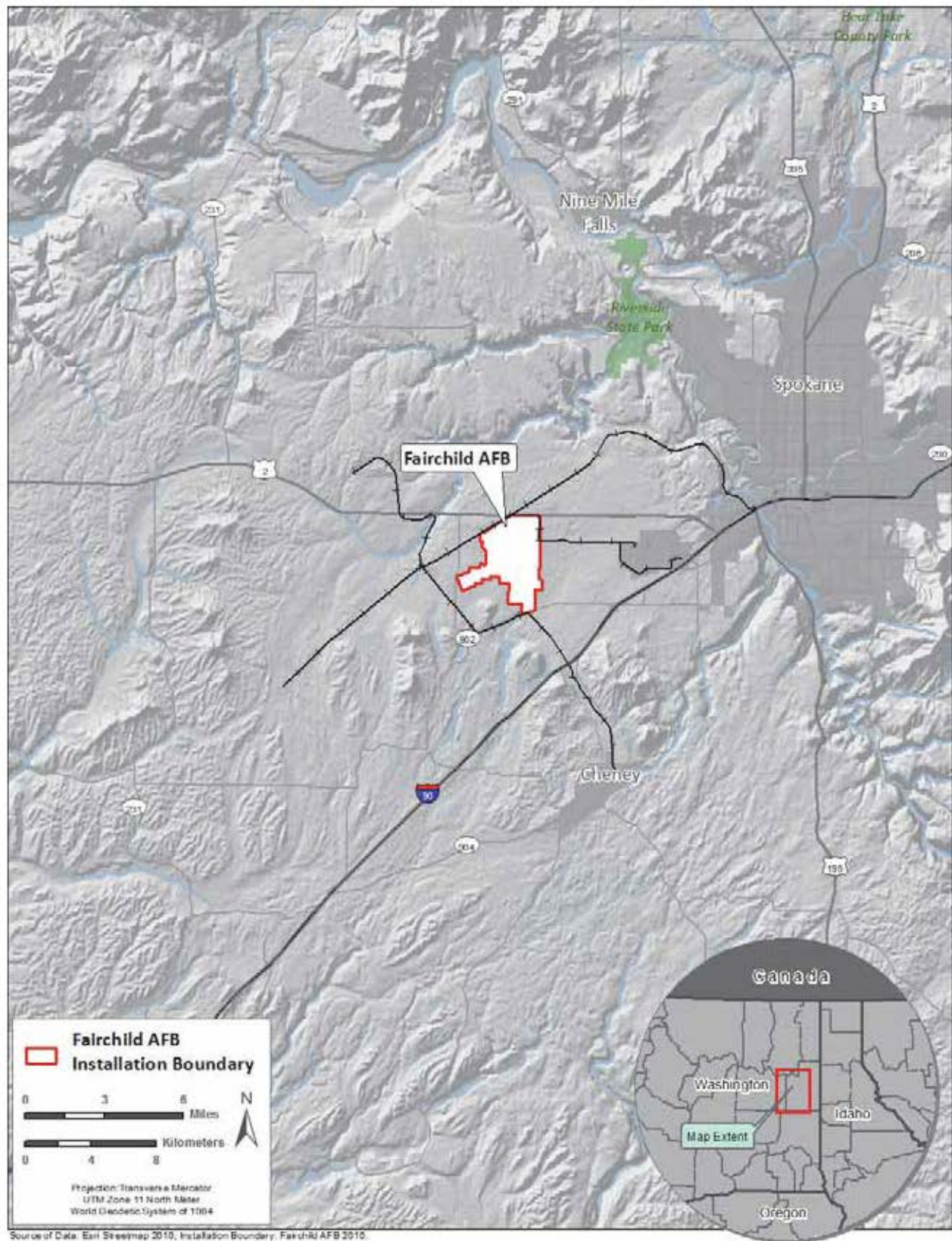


Figure 1-1. Fairchild AFB and Surrounding Area

The need for the Proposed Action is to meet current and future mission requirements and national security objectives associated with Fairchild AFB. This involves meeting ongoing mission requirements that necessitate repairing and upgrading installation utilities, pavements, and facilities; improving the efficiency and effectiveness of forces with the capability to expand; replacing older, substandard facilities with new buildings that are on a par with workplaces outside the gate; and providing reliable utilities, quality housing, and an efficient transportation system to support Fairchild AFB. In addition, morale and welfare projects that are a critical part of supporting the Fairchild AFB mission are addressed. Continued development of infrastructure at Fairchild AFB must take into account future facility construction, demolition, renovation, transportation needs, airfield alterations and enhancements, utilities improvements, land use planning, energy requirements, and development constraints and opportunities.

Contributions by Fairchild AFB to national security dictate that the installation implement planning for the next 5 FYs. To ensure complete readiness at the installation for any tasks assigned, infrastructure improvement projects must take into account—and be capable of supporting—all functions inherent to a USAF installation. These include aircraft operations and maintenance activities, security, administration, communications, billeting, supply and storage, training, transportation, and community quality of life.

1.2.1 Purpose of and Need for Proposed Demolition Actions

The Department of Defense (DOD) has called for significant transformation in all services to strengthen U.S. warfighting capabilities and to operate more efficiently. A key element of USAF transformation is embodied in the goal “20/20 by 2020.” The 20/20 by 2020 term describes a major goal of USAF Civil Engineering to achieve offsetting efficiencies to ensure that installations remain capable of enabling USAF missions. The purpose of the proposed demolition actions is to remove excess, obsolete, deteriorating, and underused facilities and pavements throughout the installation to improve mission capability, meet security objectives, and comply with the USAF’s “20/20 by 2020” goal. The need for the proposed demolition actions is for USAF Civil Engineering to reduce the amount of the physical plant that it spends money on by 20 percent by the year 2020. USAF Civil Engineering currently manages more infrastructure than is necessary and must focus limited time and funding on only the infrastructure needed to perform the USAF mission. In order to achieve this goal, the USAF must divert its resources away from excess, obsolete, and under-used infrastructure, and implement processes to increase consolidation and demolition, optimize space allocation and utilization, and promote other emerging initiatives. Therefore, HQ AMC has worked together for the past year to align AMC’s consolidation/demolition plan with the 2009 through 2013 USAF Civil Engineer Strategic Plan to develop sustainable AMC installations by implementing asset management principles for built and natural assets. As a result of this alignment, AMC’s target is to reduce the building footprint at all AMC installations (HQ AMC 2010).

1.2.2 Purpose of and Need for Proposed Construction Actions

The purpose of the proposed construction actions is to provide state-of-the-art facilities to accommodate current and future mission and facility spacing requirements, while meeting national security objectives. The need for the proposed construction actions is because fundamental support of mission requirements is not being met by existing facilities. In addition, proposed construction projects are needed to improve mission efficiency by consolidating mission functions currently housed in multiple, older, and undersized facilities into more modern facilities with sufficient space; to incorporate life safety and handicapped accessibility requirements; and to meet modern AT/FP measures. The proposed construction projects are also needed to enhance morale and wellness for active and retired military members and their dependents. Individual purpose and need statements for each of the selected construction projects are provided in **Section 2.1.4**.

1.2.3 Purpose of and Need for Proposed Infrastructure Improvement Actions

The purpose of the proposed infrastructure improvement actions is to remove and replace excess, obsolete, and deteriorating utilities; improve the installation's parking and transportation systems; improve and maintain airfield pavements and supporting infrastructure; and enhance existing communications systems. The need for the infrastructure improvements is to improve mission efficiency and effectiveness, improve ground and airspace safety, incorporate life safety and handicapped accessibility requirements, address parking limitations, and provide the installation with state-of-the-art utilities and communications systems to enhance and improve the installation's mission and meet security objectives. Individual purpose and need statements for each of the selected infrastructure improvement projects are provided in **Section 2.1.5**.

1.2.4 Purpose of and Need for Proposed Natural Infrastructure Management Actions

The purpose of the natural infrastructure management actions is to enhance airspace management, improve water quality, improve species habitat, enhance outdoor recreation opportunities, and implement projects for the protection and enhancement of the installations' natural and historic resources as identified in the INRMP and ICRMP. The need is to develop a sustainable installation by implementing asset management principles for built and natural resources assets. Other needs for the proposed natural infrastructure actions are to comply with Federal, state, and local regulations to limit downstream water quality degradation by reducing erosion, which causes sedimentation to accumulate and disperse in the installation's waterways; to improve or maintain safe aircraft takeoff and landing conditions; to protect and enhance cultural resources; and to comply with the Migratory Bird Treaty Act (MBTA) of 1918 and other laws designated to protect migratory birds, threatened and endangered species, wetlands, and other natural resources while balancing the requirements of its military mission. In addition, the need for the proposed natural infrastructure actions is to comply with the Federal Noxious Weed Act (7 United States Code [U.S.C.] 2801 et seq.) and Executive Order (EO) 13112, *Invasive Species*, which require Federal agencies to control noxious weeds on Federal properties by removing noxious and invasive species throughout their installations. A purpose and need statement for the selected natural infrastructure management project is provided in **Section 2.1.6**.

1.2.5 Purpose of and Need for Proposed Strategic Sustainability Performance Actions

The purpose of the proposed strategic sustainability performance actions is to improve water use efficiency and management; implement high performance sustainable Federal building design, construction, operation and management; and advance regional and local integrated planning by identifying and analyzing impacts from energy usage and alternative energy sources. The need for the proposed strategic sustainability performance actions is to comply with Federal mandates for Federal facilities to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. Another need for these proposed actions is to reduce the installation's overall carbon footprint, reduce dependency on foreign coal and oil, and improve local and regional air quality. In addition, these actions are required to comply with Energy Policy Act (EPA) mandates, which require that all Federal agencies' renewable electricity consumption meet or exceed 3 percent from FY 2007 through FY 2009, with increases to at least 5 percent in FY 2010 through FY 2012 and 7.5 percent in FY 2013 and thereafter. A purpose and need statement for the selected strategic sustainability performance project is provided in **Section 2.1.7**.

1.3 Scope of the Analysis

Fairchild AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single EA selected projects proposed in the Fairchild AFB General Plan, LRDP, SERE School Master Plan, and resource management plans. The complete list of all identified proposed installation development and resource management projects from these plans, presented in **Appendix A**, was developed from the projects identified in the General Plan, LRDP, SERE School Master Plan, and resource management plans using a fenceline-to-fenceline approach to capture projects within the installation boundary as proposed by host and tenant agencies in accordance with Interservice Support Agreements.

This IDEA evaluates the potential environmental impact of selected projects involved in modernizing and upgrading Fairchild AFB to meet future requirements in each of the following categories: demolition, construction, infrastructure improvement, natural infrastructure management, and strategic sustainability performance. These five categories were identified for use in the IDEA because they allow the grouping of development initiatives by generally common elements of their activity and the nature of their expected potential environmental impacts. These categories and the selected projects are described in detail in **Sections 2.1.3, 2.1.4, 2.1.5, 2.1.6, and 2.1.7** of this IDEA. The individual projects analyzed in this IDEA should be considered independent of each other and the USAF could eventually choose to implement all, none, or any combination of these projects. This would be the case even if a Finding of No Significant Impact (FONSI) is reached based on the analyses in the IDEA.

From the list of proposed projects identified in **Appendix A**, projects were selected for detailed analysis in the IDEA based on two independent criteria. First, projects were selected that are expected to have the greatest potential to impact the natural and man-made environment. They are typical of the types of projects that are proposed at Fairchild AFB. They were selected based on geographic setting, project size, acreage disturbed, amount of air emissions, increases in impervious surfaces, vegetation disturbed, and other relevant factors associated with environmental and socioeconomic resources. Second, projects were selected for detailed analysis if they have the potential to result in impacts on sensitive resources, such as wetlands, protected cultural resources, or species protected under the Endangered Species Act (ESA). Such projects were selected because they are believed as a group to frame the range of potential impacts that reasonably could be expected from other projects within the category and consequently are subject to detailed analysis in this IDEA. The projects selected for analysis in this IDEA are described in **Sections 2.1.3 through 2.1.7**.

The remaining other projects from the installation development and resource management plans (see the “Other Projects” portions of the tables presented in **Appendix A**) are considered in the cumulative impacts analysis of the IDEA. This IDEA does not represent NEPA documentation for projects other than the selected projects. Projects listed in the “Other Projects” inventory will be reviewed individually to determine the necessary environmental analysis needed to make a decision on whether or not to approve each of these projects, which are outside the scope of this IDEA.

The Proposed Action includes numerous projects selected from those listed in **Appendix A**, such as the demolition of aging facilities, new facility construction, facility upgrades, facility repair and renovation, utilities upgrades, quality of life upgrades, infrastructure improvement, recreational upgrades, natural infrastructure management and other environmental projects, and sustainable improvement projects that would be completed or implemented during the next 5 FYs (2013 to 2018). The assessment compiles information on constraints that might inhibit development or dictate courses of actions affecting development, improve the facility planning process, and capture the Wing Commander’s vision of the facility and infrastructure improvements necessary to support the installation’s ongoing mission.

The scope of this IDEA includes an evaluation of projects that involve construction activities in wetlands. In accordance with 32 Code of Federal Regulations (CFR) § 989, if it is determined that the alternative selected would involve construction activities in wetlands, a Finding of No Practicable Alternative (FONPA) must accompany the FONSI to discuss why no other practicable alternative exists to avoid impacts. Because it has been determined through the analysis contained in this IDEA that preferred alternative of several projects would involve construction activities in wetlands, a FONPA and approval from HQ AMC would be required. Impacts on wetlands would be reduced to the maximum extent practicable through project design and the implementation of environmental protection measures. In addition, appropriate permits would be obtained from applicable regulatory agencies to address impacts on wetlands and to determine potential mitigation, if required.

In accordance with EO 11990, *Protection of Wetlands*, Fairchild AFB considered alternatives to proposed actions in wetlands and determined there were no practicable alternatives. Environmental protection measures, such as flagging the boundary of the wetland area and ensuring construction vehicles and workers remain outside the boundary would be implemented, as appropriate. All direct, adverse impacts would be minimized through techniques such as phasing construction activities to minimize the potential for erosion, installing sedimentation basins and detention or retention ponds, and limiting construction activities to drier periods of the year.

The IDEA includes projects that would result in an adverse effect on National Register of Historic Places- (NRHP) eligible facilities at Fairchild AFB. Projects have been included in the selected projects for the IDEA if the Section 106 consultation process has been recently completed for properties eligible for listing on the NRHP; however, if new or additional consultation would be required and would not be completed by the finalization of the signed FONSI/FONPA, such projects have been excluded from the IDEA analysis. **Appendix C** includes the status of Washington State Historic Preservation Office (SHPO) concurrence for facilities that will be 50 years in age or older by 2018. Fairchild AFB, in coordination with the Washington SHPO, developed a Memorandum of Agreement (MOA) for demolition activities involving NRHP-eligible structures. The MOA is provided in **Appendix B**.

The precise design, footprint, and location on the installation of all projects are in the early planning stages. Therefore, exact locations and layouts are generally not finalized at this time. Should locations and final layouts of the projects differ substantially from those anticipated in terms of the land use category involved or the compatibility with the land use category at the final designated location, then separate environmental documentation for those projects might be required.

It is intended that the projects contained in the IDEA generally will be reviewed on a 5-year rotational basis and that an additional NEPA document might need to be prepared to accommodate changes in development plans, mission objectives, laws and regulations, or land use plans. During the course of the next 5 FYs (FY 2013 to FY 2018), if significant new circumstances or information relevant to environmental concerns are discovered or the scope or proposed siting of any of the selected projects associated with the Proposed Action change enough to be outside the coverage of the analysis provided in the IDEA, the specified projects would no longer be covered by the NEPA analysis represented by the IDEA, but this would not affect other projects originally included in the IDEA.

The IDEA examines potential effects of the Proposed Action and alternatives on 11 resource areas: noise, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, infrastructure, hazardous materials and wastes, and safety. These resources were identified as being potentially affected by the Proposed Action and include applicable elements of the human environment that are prompted for review by EO, regulation, or policy.

After a FONSI is signed (if applicable), and as funding becomes available, each project would be reviewed by the Environmental Planning Function prior to implementation to ensure that it has been sufficiently analyzed in this IDEA and that there has not been a substantial change in the installation mission or project scope, or there are no significant new circumstances or information relevant to environmental conditions; and that there have not been new or modified environmental regulations promulgated warranting reevaluation of potential environmental consequences. If the project has not been analyzed sufficiently or there has been a change in scope, conditions, or regulations, Fairchild AFB would complete additional environmental documentation for the project, as applicable.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

NEPA of 1969 (42 U.S.C. Section 4321–4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help decisionmakers make well-informed decisions based on an understanding of the potential environmental consequences, and take actions to protect, restore, or enhance the environment. NEPA established the Council on Environmental Quality (CEQ) that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations mandate that all Federal agencies use a prescribed structured approach to environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action.

The CEQ-established process for implementing NEPA is codified in Title 40 of the CFR, §§ 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee Federal policy in this process. EIAP regulations (32 CFR § 989) provide the framework for how to implement CEQ regulations and achieve the goals of NEPA. The EA can aid in an agency's compliance with NEPA when an EIS is unnecessary and facilitate preparation of an EIS when one is required.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *Environmental Impact Analysis Process*, 32 CFR § 989, as amended.

1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA can be integrated “with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.”

As noted in **Section 1.3**, this IDEA examines potential effects of the Proposed Action and alternatives on 11 resource areas. These resources were identified as being potentially affected by the Proposed Action and include applicable elements of the human and natural environments that are prompted for review by EO, regulation, or policy.

1.4.3 Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), Native American Tribal Consultation, and Public Involvement

IICEP. NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. Air Force Instruction (AFI) 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning*, requires the USAF to implement the IICEP process, which is used for the purpose of agency coordination and implements scoping requirements.

Through the IICEP process, Fairchild AFB notifies relevant Federal, state, and local agencies of the Proposed Action and alternatives and provides them with sufficient time to make known their environmental concerns specific to the action. The IICEP process also provides Fairchild AFB the opportunity to cooperate with and consider state and local views in implementing the Federal proposal. IICEP materials related to this action are included in **Appendix B**, and will be expanded throughout the EIAP process.

Native American Tribal Consultation. EO 13175, *Consultation and Coordination with Indian Tribal Governments* (6 November 2000) directs Federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with legal mandates, federally recognized tribes that are affiliated historically with the Fairchild AFB geographic region are invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Because many tribes were displaced from their original homelands, tribes with cultural roots in an area might not currently reside in the region where the undertaking is to occur. Effective consultation requires identification of tribes based on ethnographic and historical data and not simply a tribe's current proximity to a project area. The tribal coordination process is distinct from NEPA consultation or the IICEP processes and requires separate notification of all relevant tribes by Fairchild AFB. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The Fairchild AFB point-of-contact for Native American tribes is the Installation Commander. The Fairchild AFB point-of-contact for consultation with the Washington State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) is the Cultural Resources Manager (CRM).

The goal of the tribal consultation process is not simply to consult on a particular undertaking but rather to build constructive relationships with appropriate Native American tribes. Consultation should lead to constructive dialogs in which the Native American tribes are active participants in the planning process. As such, consultation regarding specific proposed projects must begin very early in the process and is outside the scope of the IDEA. Fairchild AFB is in the process of developing government-to-government relationships with affiliated federally recognized tribes. The list of Native American tribal governments with whom coordination for the IDEA occurred is included in **Appendix B**.

Public Involvement. The USAF released the Draft IDEA and Draft FONSI/FONPA for a 45-day public review period from 21 August 2012 to 5 October 2012. A Notice of Availability (NOA) was published in the *Spokesman Review* on 21 August 2012 to announce the availability of the Draft IDEA and FONSI/FONPA for the public review period. Copies of the Draft IDEA and Draft FONSI/FONPA were made available at the Spokane Public Library, at the Fairchild AFB Library, and on the Fairchild AFB Web site. The 45-day review period ended on 5 October 2012, and no comments were received.

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2. Description of the Proposed Action and Alternatives

This section presents information on the Proposed Action of implementing selected installation development projects, as drawn from the Fairchild AFB General Plan, LRDP, SERE School Master Plan, and resource management plans (i.e., INRMP and ICRMP). **Section 2.1** describes the Proposed Action at Fairchild AFB. **Section 2.2** identifies alternatives to the Proposed Action. **Section 2.3** discusses the No Action Alternative. **Section 2.4** identifies the decision to be made and the Preferred Alternative.

2.1 Proposed Action

As noted in **Section 1.3**, the Proposed Action is to implement a range of selected installation development projects drawn from projects contained in the Fairchild AFB General Plan, LRDP, SERE School Master Plan, and resource management plans. The projects selected for analysis in this IDEA are described in **Sections 2.1.3** through **2.1.7** and would meet the selection criteria presented in **Section 2.2**. Each of the projects has been assigned a project identification number, corresponding to the category to which they belong. **Figures 2-1** and **2-2** show the proposed potential locations of all mapable projects associated with the Proposed Action relative to known constraints at Fairchild AFB. The remaining other projects that have been drawn from the Fairchild AFB General Plan, LRDP, SERE School Master Plan, and resource management plans, which are listed in **Appendix A** under the “Other Projects” portions of the tables, are addressed in the cumulative impacts analysis in this IDEA.

2.1.1 Project Considerations

Each project ultimately would be sited in a manner compatible with Fairchild AFB’s surrounding land uses. The analyses provided in this IDEA addressing the selected projects evaluate their siting anywhere within the improved or semi-improved areas of the installation that are within compatible land use areas of the installation, as analyzed in **Section 4** of this IDEA. They are not assessed for a site-specific location within that area of compatible land use because the environmental impacts would be essentially the same no matter where the project is specifically located in that land use area. There are 11 land use categories at Fairchild AFB: administrative, airfield operations and maintenance, airfield, community, housing (accompanied), housing (unaccompanied), industrial, medical, open space, outdoor recreation, and water. **Figure 2-3** shows the locations of Fairchild AFB’s existing land use categories.

Projects would avoid sensitive or constrained areas (see **Figures 2-1** and **2-2**) to the maximum extent practicable. Sensitive areas include wetlands, Environmental Restoration Program (ERP) sites, known archaeological sites, and federally listed species and their habitats. Constrained areas include airfield and airspace clear zones (CZs), areas within safety quantity-distance (QD) arcs, areas inside the 65+ A-weighted decibels (dBA) noise contour, cultural resources (i.e., buildings with potential architectural significance), and areas restricted per AT/FP and other mission requirements.

The exterior and interior design of new facilities would follow the design guidelines outlined in the *Air Mobility Command Civil Engineering Squadron Design Guide* (AMC 1999) and the *Fairchild AFB Architectural Compatibility Plan* (FAFB 2005b). This guidance would ensure a consistent and coherent architectural character throughout Fairchild AFB.

Landscaping would be used to provide an attractive and professional-looking installation and would include plants, shrubs, and trees to blend with the surrounding environment. Landscape designs and maintenance activities would comply with the Landscape Master Plan, which is part of the General Plan and the installation design standards. Landscape designs that use regionally native plants for improved and semi-improved grounds minimize adverse effects on natural habitats while reducing maintenance inputs in terms of energy, water, manpower, and equipment. In addition, the landscape designs choose

plant species adapted to local environmental conditions that have the potential to reduce the need for irrigation and fertilization or pesticide use.

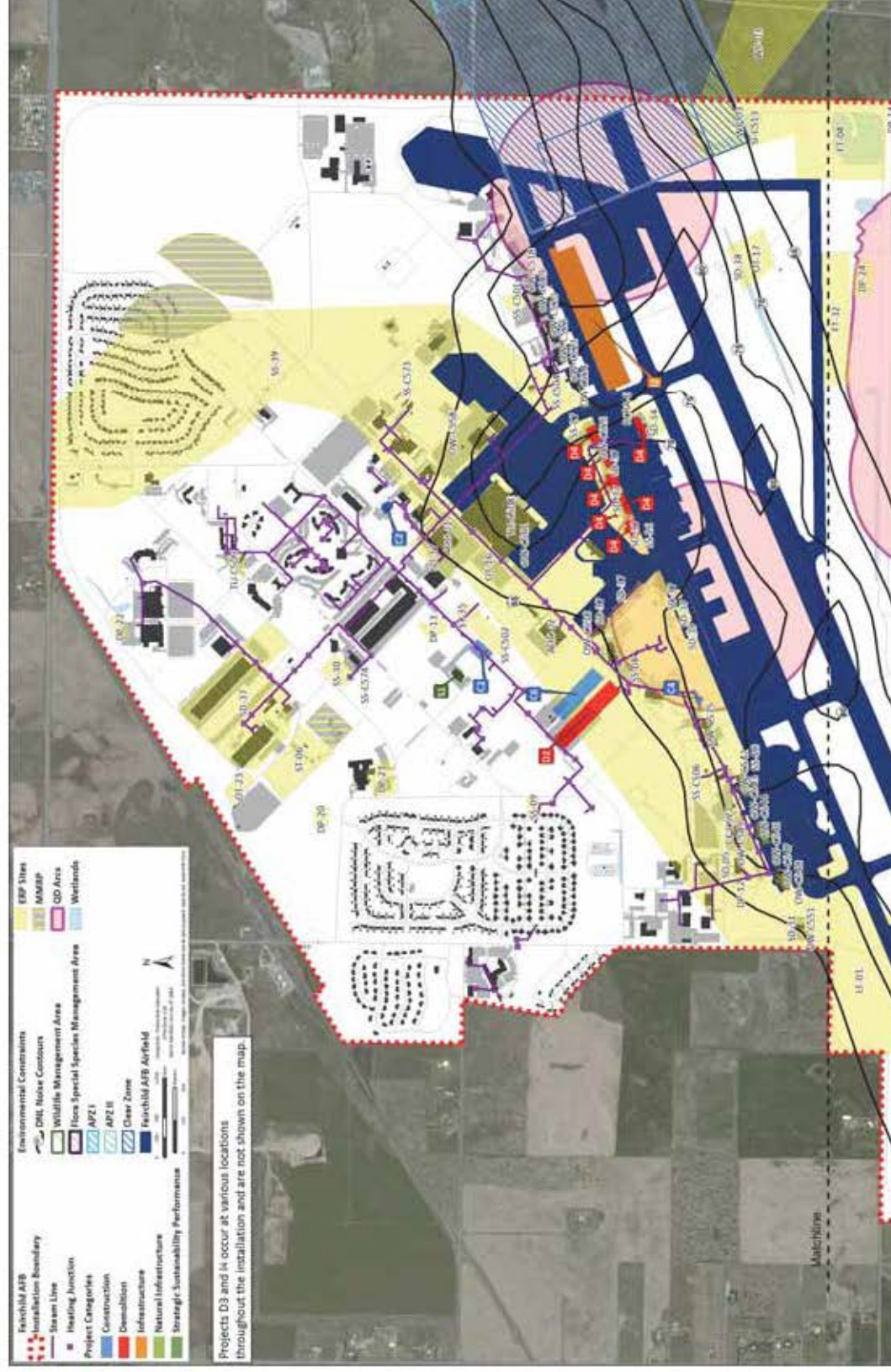
Force protection measures would be incorporated in accordance with the Unified Facilities Criteria (UFC) 4-010-01, *DOD Minimum Antiterrorism Standards for Buildings*, 9 February 2012. All construction would comply with applicable building, fire, and safety codes. The proposed construction projects would be implemented using sustainable design concepts. Sustainable design concepts emphasize state-of-the-art strategies for site development, efficient water and energy use, and improved indoor environmental quality.

2.1.2 Major Installation Constraints

To incorporate selection parameters for the siting of projects, this IDEA has been prepared using a constraints-based analysis. This approach enables a comprehensive evaluation of environmental concerns throughout the installation and also those concerns unique to specific areas of Fairchild AFB. This analysis uses information layers from the installation's Geographical Information System (GIS) database (also called the GeoBase system) and the information obtained from extensive recent EIAP evaluations for similar types of projects to help determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation's development plan.

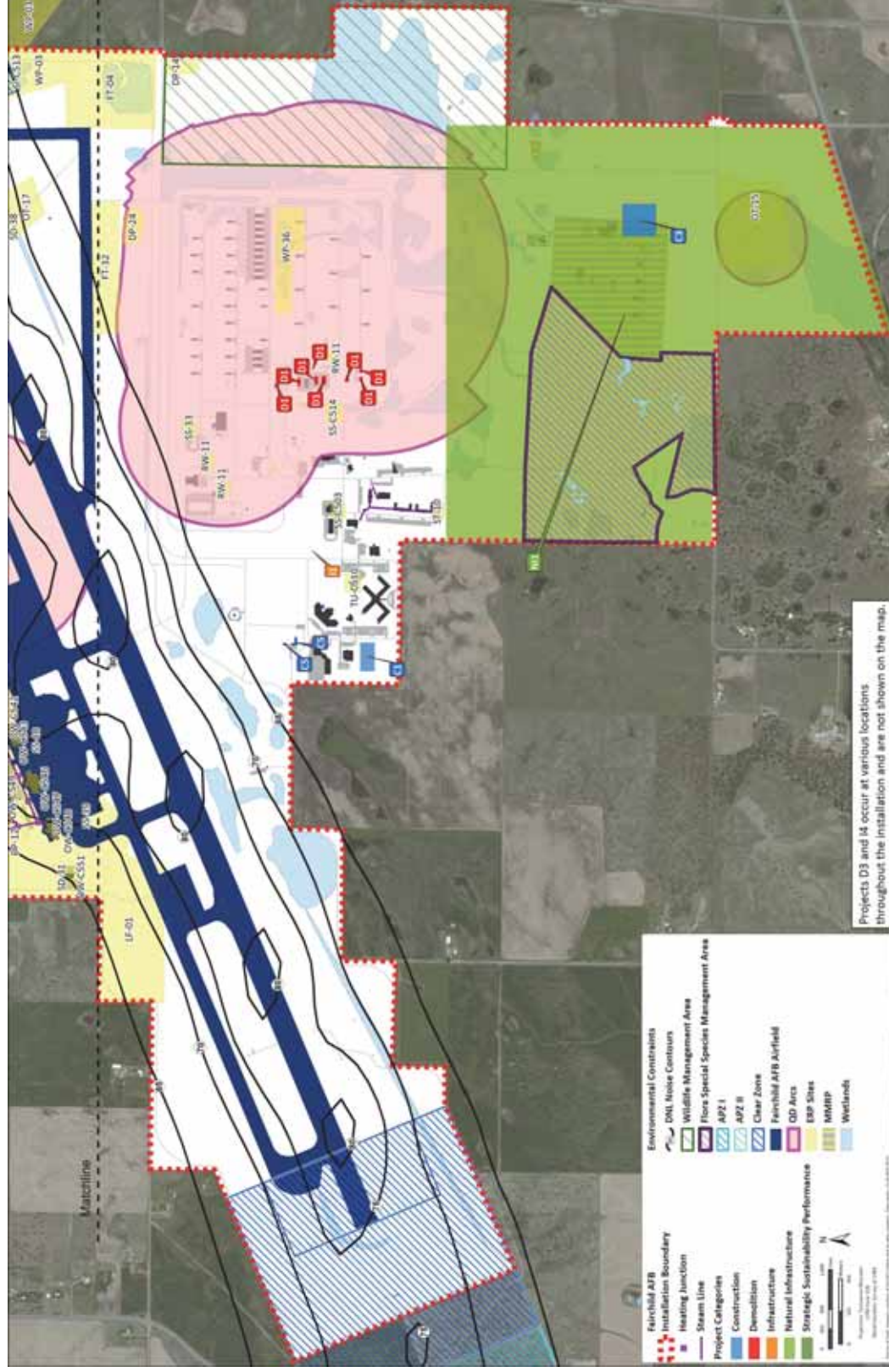
There are a number of land use, regulatory, and mission-related constraints within the boundaries of Fairchild AFB that influence and limit future development at the installation. The major constraints on Fairchild AFB are depicted in **Figures 2-1** and **2-2**. The electronic mapping data from Fairchild AFB's GIS database were used to quantify the major installation constraints to development, unless another source of information is identified. Some constraint areas overlap, and, therefore, the acreages listed in the following bulleted items do not equal the total acreage of Fairchild AFB. The acreage calculations do not include any portions of the constraint areas that extend off the installation. The major constraints are discussed in the following bulleted paragraphs.

- **Noise Zones (3,047.5 acres).** Aircraft operations are a dominant component of the noise environment at Fairchild AFB. USAF, Federal Aviation Administration (FAA), and the U.S. Department of Housing and Urban Development (HUD) criteria specify that noise levels in noise-sensitive land use areas are normally considered unacceptable where they exceed a day-night average A-weighted sound level (DNL) of 65 dBA. Spokane County zoning restricts development to compatible uses inside the 65 dBA DNL noise contour generated by aircraft operations and runway usage at Fairchild AFB.
- **Airfield Infrastructure, Clear Zones, and Imaginary Surfaces (690.2 acres).** The airfield includes pavement, runways, overrun, apron and ramp, and arm/disarm pads. CZs, accident potential zones (APZs), and imaginary surfaces associated with aircraft approach patterns are areas where nonairfield development is constrained or discouraged for airfield safety. These areas would allow only airfield improvements and projects directly associated with airfield operations. All projects within this area must be approved by the Facility Utilization Board (FUB) and airfield management prior to commencement of any construction-related activities.
- **Munitions and Other Safety Criteria (539 acres).** There are several areas that are constrained for safety reasons at Fairchild AFB. The QD arcs are the minimum prescribed distance between munitions site handling and storage areas and inhabited areas. There are three major QD arcs at Fairchild AFB, including the alert area, Explosive Combat Aircraft parking, and the Ammunitions Storage Area (FAFB 2007a).



Note: Project numbers and associated descriptions are shown in Tables 2-1 through 2-5.

Figure 2-1. Possible Locations and Environmental Constraints Associated with Selected Projects (North)



Note: Project numbers and associated descriptions are shown in Tables 2-1 through 2-5.

Figure 2-2. Possible Locations and Environmental Constraints Associated with Selected Projects (South)

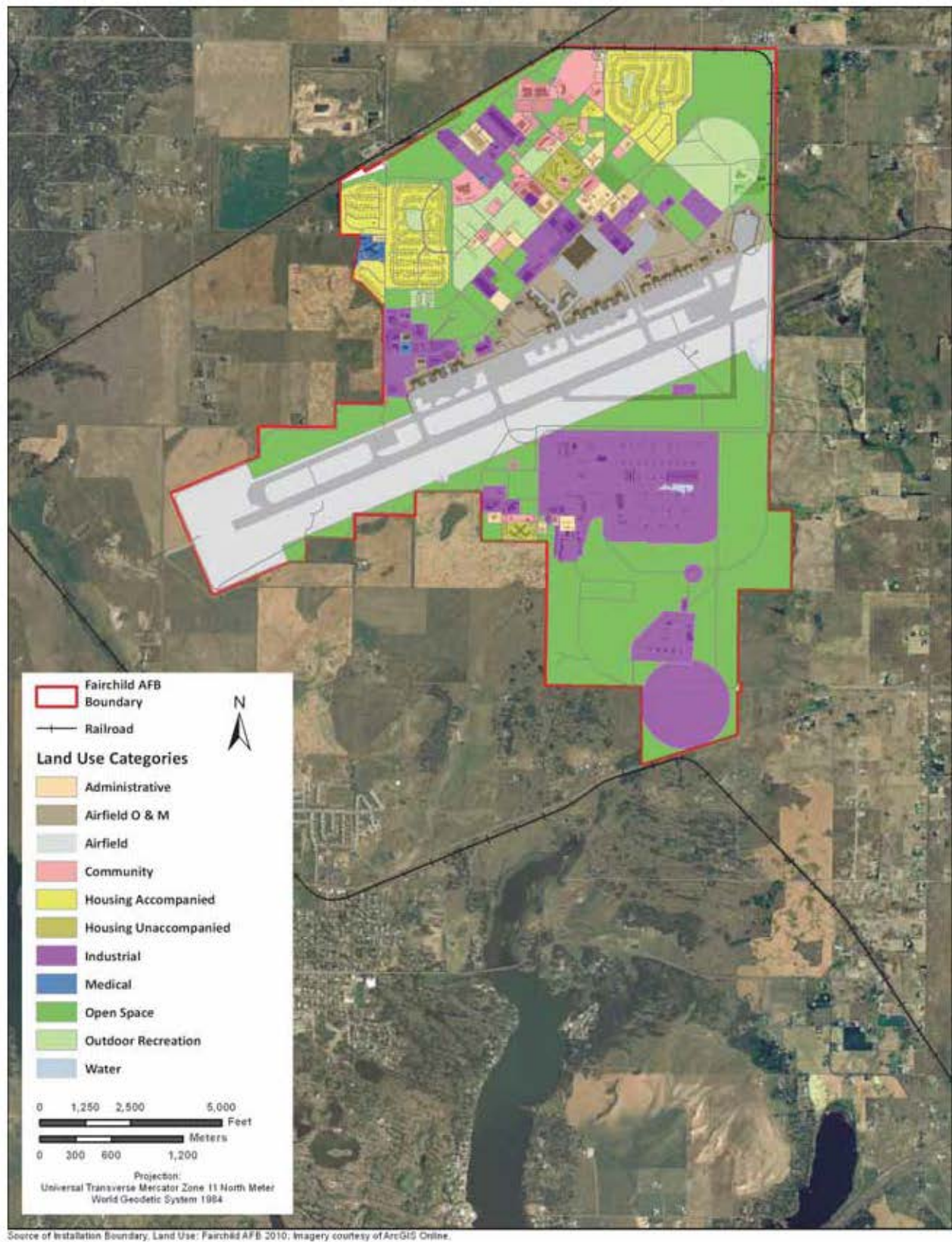


Figure 2-3. Fairchild AFB Existing Land Use Categories

- ***Environmental Restoration Program Sites (781.3 acres).*** Fairchild AFB contains a total of 80 ERP sites: 37 Installation Restoration Program (IRP) sites, 36 Compliance Restoration Program (CRP) sites, and 7 Military Munitions Response Program (MMRP) sites. New facilities could be constructed within certain ERP sites, Compliance Restoration sites, or MMRP sites depending upon the level of contamination, clean-up efforts, and land use controls. Approval of new construction within ERP sites must be obtained from the FUB and coordinated with 92 CES. In addition, an *ERP Waiver to Construct* must be reviewed and approved by HQ AMC in order to construct on an ERP site.
- ***Wetlands (119 acres).*** In accordance with EO 11990, construction of new facilities within areas containing wetlands is avoided where practicable. In general, Fairchild AFB contains approximately 119 acres of isolated wetlands. All wetlands on Fairchild AFB are under Washington State Department of Ecology jurisdiction and are defined per the U.S. Army Corps of Engineers (USACE) as isolated (FAFB 2009a, FAFB 2010a). Wetland impacts would be reduced to the maximum extent practicable through project design and the implementation of environmental protection measures. However, some projects might have minimal, direct impacts on wetland areas, and there is the potential for indirect impacts on wetland areas from development and excavation in areas adjacent to these wetland areas. In accordance with EO 11990, a FONPA must be prepared and approved by HQ AMC for all projects requiring construction activities in wetlands. In addition, appropriate permits must be obtained from applicable regulatory agencies to address potential impacts on wetland areas and to determine mitigation, if required.
- ***Threatened and Endangered Species and Associated Habitats (122.6 acres).*** Currently, one federally listed threatened species is found on Fairchild AFB (Spalding's catchfly). However, none of the projects analyzed in the IDEA would be conducted within threatened and endangered species habitat.
- ***Cultural Resources, Historic Buildings, and Archaeological Sites (0.026 acres).*** Construction within or demolition of cultural resources sites must be coordinated with the CRM. The CRM consults with the Washington SHPO as part of Section 106 consultation. The FUB approves projects that could impact cultural resources. A list of facilities on Fairchild AFB at or approaching 50 years old by 2018 is provided in **Appendix C**.
- ***AT/FP Setback Requirements.*** Minimum AT/FP design standards for new construction have been specified by the DOD and increase the land area required for individual facilities. Design standards for new construction are contained in UFC 4-010-01, *Department of Defense Minimum Antiterrorism Standards for Buildings*, 9 February 2012 (DOD 2012), and augmented by USAF instructions. The USAF Force Protection Design Guide, published by the Air Force Center for Engineering and the Environment, supplements the DOD standards and must also be consulted during the planning and design processes. Fairchild AFB has numerous existing road, parking, and perimeter setback issues that do not meet current AT/FP standards.

Installation constraints are an important parameter in the siting of projects and the development of reasonable alternatives for all projects proposed at Fairchild AFB. As a general practice, Fairchild AFB seeks to avoid, wherever possible, any disturbance to sensitive or constrained areas. This effort to avoid sensitive and constrained areas limits the number of feasible alternatives for projects due to the densely constructed nature of the installation around the expanse of existing constrained areas on Fairchild AFB. However, avoiding or restricting future development within the constrained acreage might not be practical and could limit the installation's ability to accomplish its missions successfully. When these resources cannot be avoided and actions result in moderate to major environmental impacts, separate and additional NEPA documentation would occur and coordination with the appropriate regulatory agencies would be completed prior to initiating the action. All construction or other activities that would occur within areas of concern (AOCs) would comply with the requirements of various Federal, state, and local policies and

regulations that govern such resources, and the appropriate environmental protection measures would be instituted.

2.1.3 Demolition Projects

Of the demolition projects proposed for the next 5 FYs (as identified in **Appendix A**), four projects were identified for detailed analysis as selected projects under the Proposed Action. The other remaining proposed demolition projects are addressed in the cumulative impacts analysis for this IDEA. The selected demolition projects would remove an estimated 488,868 square feet (ft²) of facilities over the next 5 FYs. These demolition projects would contribute to the goal of reducing the physical plant footprint on the installation according to the “20/20 by 2020” initiative or making space available for future development. In accordance with AFI 32-1032, *Planning and Programming Appropriated Funded Maintenance, Repair, and Construction Projects*, it is USAF policy to replace a facility when the estimated repair cost exceeds 70 percent of the replacement cost. All facilities proposed for demolition have either been deemed to be unusable or too costly to repair or renovate to meet the future mission requirements of Fairchild AFB by the 92 CES and other installation personnel. **Section 2.2.1** provides an overview of this determination process, and **Section 2.2.2** further discusses issues considered for individual demolition projects.

Projects within this category primarily include the demolition of structures, but could also include demolition of parking lots and other pavements. The demolition of old or outdated facilities would minimize the area of undisturbed land required for new facilities and reduce labor costs associated with maintenance and repair of these excess facilities. **Table 2-1** identifies the selected demolition projects to be evaluated in detail in this IDEA. **Figures 2-1** and **2-2** show the possible locations of the selected demolition projects relative to known constraints at Fairchild AFB.

The four selected demolition projects are believed to encompass the upper range of potential impacts on the natural and man-made environment from such projects and thus frame the upper limits for potential impacts that reasonably could be expected from the demolition projects proposed at the installation. The other demolition projects not selected under the Proposed Action are listed in **Appendix A** and are considered in the cumulative impacts analysis for this IDEA. For example, the demolition of ammunition storage facilities would have the largest possible impact on wetlands due to their current location. The demolition of Warehouse 2001E would have a greater potential for impacts on hazardous materials and waste because the facility likely contains asbestos-containing materials (ACM) and lead-based paint (LBP) and is within the immediate vicinity of ERP sites. The demolition of 137 steam pits throughout the installation would involve demolition activities in a variety of locations, land uses, and environmental constraints at Fairchild AFB. The demolition of old flightline hangars (Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019) would have the largest potential impact on cultural resources. These buildings are located on several active ERP sites that are known to have groundwater contamination. The other demolition projects not selected under the Proposed Action are considered in the cumulative impacts analysis for this IDEA.

All demolition projects that could impact properties listed in or adjacent to historic districts or that could be eligible for the listing on the NRHP are subject to consultation with the Washington SHPO as per 36 CFR § 800. **Appendix C** includes a list of facilities on Fairchild AFB that have reached or are reaching 50 years in age by 2018. All consultations with the Washington SHPO for facilities that meet applicable parameters and any mitigation requirements developed during consultation would be completed prior to project commencement. In addition, all fill used for post-demolition activities would be obtained from an approved borrow pit and screened to ensure it contains no cultural resources. All trees and vegetation associated with facilities scheduled for demolition would be replaced or relocated, as applicable, and the area reseeded with appropriate species. Greater detail on each of the selected demolition projects is given in the following paragraphs.

Table 2-1. Selected Facilities Demolition Projects Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
D1. Demolish Ammunition Storage Facilities	110092 110093 110094 110095 110096	2013	Multiple	Demolition of Ammunition Storage Facilities in five phases. Associated infrastructure (i.e., foundation, parking, access roads, fencing, and utilities) would also be removed.	Wetlands, QD Arcs, ERP Sites, Cultural	252,744	-252,744
D2. Demolish Building 2001E	TBD	2016	Industrial and Administrative	Demolition of Warehouse Building 2001E. Move CBCS to the new WANG warehouse.	ERP Sites	39,204	-39,204
D3. Demolish Steam Heat Mains and Abandoned Steam Pits Installationwide	090033	2013	Various*	Demolition of the steam heat mains would not result in a change in impervious surface area. A total of 137 steam pits would be removed; 108 of the steam pits are not in the pavement and 29 of the steam pits are in the pavement (approximately 9,000 ft ² of impervious surface area).	ERP Sites, QD Arcs*	12,330	- 9,000
D4. Demolish Aircraft Hangars: Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019	TBD	2017	Airfield O&M	Demolition of aircraft hangars (Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019) and their associated infrastructure (i.e., pavements) and utilities. These areas would be returned to native vegetation.	Airfield, ERP Sites, QD Arcs, Cultural, Noise Contour Line	187,920	-187,920
Net Change in Impervious Surface							-488,868

Note: * The steam heat mains and steam pits are in various locations throughout Fairchild AFB. Subsequently, they could be within various land use categories depending on their location. Some of the steam heat mains and steam pits are aboveground; however, the majority of them are underground.

Key: ft² = square feet; FY = fiscal year; QD = quantity-distance; ERP = Environmental Restoration Program; O&M = operations and maintenance

D1. Demolish Ammunition Storage Facilities. Project D1, Demolish Ammunition Storage Facilities entails the demolition in five phases. Associated infrastructure, including foundations, parking areas, access roads, and fencing, and utilities would also be removed. All of these facilities were being used as storage facilities and have been determined to be ineligible for NRHP listing (FAFB 2005a). Due to their construction dates, these facilities likely contain ACM and LBP; therefore, demolition would include the removal of ACM and LBP in accordance with all Federal, state, and local regulations. For demolition activities involving the removal of more than 48 ft² or 10 feet of ACM, notification must be provided to the Washington State Department of Labor and Industries at least 10 working days prior to the commencement of the project (WAC 296-65-020). In addition, these facilities are within QD arcs and are in the immediate vicinity of wetlands and ERP sites. The demolition of these storage facilities and their associated pavements and utilities would result in a reduction of 252,744 ft² of impervious surface area. Upon completion of demolition activities, site conditions would be restored to match the surrounding areas.

D2. Demolish Warehouse 2001E. Project D2, Demolish Warehouse 2001E entails the demolition of Warehouse 2001E (Building 2001E) and any associated pavements and utilities. Building 2001E was constructed in 1943 and has been determined to be ineligible for NRHP listing (FAFB 2005a). Building 2001E was being used as a warehouse for the WANG and has been identified as an unsafe structure that should be demolished. Due to its construction date, Building 2001E likely contains ACM and LBP; therefore, demolition would include the removal of ACM and LBP in accordance with all Federal, state, and local regulations. For demolition activities involving the removal of more than 48 ft² or 10 feet of ACM, notification must be provided to the Washington State Department of Labor and Industries at least 10 working days prior to the commencement of the project (WAC 296-65-020). In addition, this facility is within the immediate vicinity of ERP sites. The demolition of Building 2001E and its associated pavements and utilities would result in a reduction of 39,204 ft² of impervious surface area. Upon completion of demolition activities, the CBCS would be moved to the new WANG warehouse and site conditions would be restored to match the surrounding areas.

D3. Demolish Steam Heat Mains and Abandoned Steam Pits Installationwide. Project D3, Demolish Steam Heat Mains and Abandoned Steam Pits entails the demolition of 137 steam pits. Of the 137 steam pits, 108 are situated in unpaved areas and 29 are situated in paved areas. The steam pits are part of an old steam plant at Fairchild AFB, which was demolished in 2005.

D4. Demolish Aircraft Hangars: Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019. Project D4, Demolish Aircraft Hangars: Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019, entails the demolition of old flightline hangars and any associated pavements. Buildings 1012, 1013, and 1017 were constructed in 1955 and Buildings 1011, 1015, 1018, and 1019 were constructed in 1958. These old flightline hangars would be demolished because they are no longer in use. Demolition of the buildings would include demolition of their foundations and would result in a reduction of 133,405 ft² of impervious surface area. In addition, these facilities are within the immediate vicinity of several active ERP sites with known groundwater contamination. The sites would be restored with native grasses following demolition.

2.1.4 Construction Projects

Of the construction projects proposed at Fairchild AFB over the next 5 FYs (identified in **Appendix A**) five were selected for detailed analysis under the Proposed Action. The other remaining proposed construction projects are addressed in the cumulative impacts analysis for this IDEA. The selected construction projects would add an estimated 230,699 ft² of new facilities, new pavements, and site improvements. The selected construction projects would also remove an estimated 382,407 ft² of facilities and pavements. Therefore, there would be a total decrease in impervious surface area

(approximately 151,708 ft²) once all of the selected construction projects are completed. Projects within this category primarily include new facility construction and additions to existing facilities, but could also include demolition, renovations, repairs, alterations, parking areas, and other pavements when these elements are a large relevant component of a facility construction project. The construction of new facilities would be zoned in accordance with appropriate land use areas to continue or enhance compatibility with currently designated land use areas. **Table 2-2** identifies the selected construction projects to be evaluated in detail in this IDEA, and **Figures 2-1** through **2-2** show the locations of the selected construction projects relative to known constraints at Fairchild AFB.

The selected construction projects are believed to encompass the upper range of potential impacts on the natural and man-made environment from such projects in the construction category, and thus, frame the upper limits for potential impacts that could reasonably be expected from the construction projects proposed at the installation. For example, construction of the new modern Base Operations Facility, which includes the demolition of the existing Base Operations Facility, would have the largest potential impact on cultural resources. The construction of the Civil Engineer Squadron (CES)/Contracting Squadron (CONS) Complex would represent one of the largest construction and demolition undertakings in terms of square footage. The other construction projects listed in **Appendix A** not selected under the Proposed Action are considered in the cumulative impacts section of this IDEA.

All fill used for construction activities would be obtained from an approved borrow pit and screened to ensure it contains no cultural materials. All trees and vegetation impacted from construction and demolition activities would be replaced or relocated, as applicable. All ground disturbed during construction and demolition activities that does not include site improvements would be reseeded with appropriate species. All new facilities would be constructed to the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standard. Greater detail on each of the selected construction projects is given in the following paragraphs.

C1. Construct Pipeline Dormitory. Project C1, Construct Pipeline Dormitory, entails the construction of a 150-room dormitory for 300 SERE School Pipeline students including utilities, site improvements, pavements, and communications. The purpose of Project C1 is to provide on-installation housing to students attending the SERE School. Project C1 is needed because the SERE School currently has insufficient on-installation housing for unaccompanied pipeline students. A major USAF objective provides unaccompanied enlisted personnel with housing conducive to their proper rest, relaxation, and personal well-being. Properly designed and furnished quarters providing some degree of individual privacy are essential to the successful accomplishment of the increasingly complicated and important jobs these personnel perform. Pipeline students are currently residing in visiting quarters, displacing visiting personnel to off-installation lodging. If a new dormitory is not constructed, there would be an insufficient number of living quarters for the number of students attending SERE courses. Pipeline students would be forced to be billeted in lodging that would, in turn, force other students into off-installation lodging. Forcing students off installation would drive increased transportation and logistical requirements, which would impact training schedules and increase costs.

C2. Construct Precision Measurement Equipment Laboratory (PMEL) Facility. Project C2, Construct PMEL Facility, entails the construction of a PMEL Facility that would be properly sited and built in accordance with Air Force Manual 32-1094 requirements. The purpose of Project C2 is to construct a facility that would allow for more efficient repair and calibration of sensitive equipment and increase the accuracy of testing on items vital to multiple agencies and missions. Project C2 is needed because the current PMEL Facility is deteriorating, causing unsafe working conditions, and costly to maintain, and the facility is not properly sited in accordance with Air Force Manual 32-1094. The condition of the current facility does not provide reasonable confidence that uninterrupted support would be available.

Table 2-2. Selected Facilities Construction Projects Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
C1. Construct Pipeline Dormitory	040009	2014	Housing Unaccompanied	Construction of a three-story, 150-room dormitory for 300 USAF SERE School Pipeline students including utilities, site improvements, pavements, and communications.	None	81,375	81,375
C2. Construct Precision Measurement Equipment Laboratory (PMEL) Facility	940031	2015	Multiple	Construction of a new PMEL Facility, including reinforced concrete footings, foundation, and floors; steel framing, insulated brick exterior façade; and a metal roof. Includes all associated utilities, site work, paving, and landscaping. Demolition of the existing building (Building 2135) and pavements.	ERP Sites	New Construction: 6,835 Building Demolition: 14,574 Pavement Demolition: 33,023	-40,762
C3. Construct Peacetime Governmental Hostage/Detention Training Facility	050054	2015	Industrial and Open Space	Construction of a Peacetime Governmental Hostage/Detention Training Facility. The project includes new construction, demolition, and minor infrastructure/utility work. The new facility will include a 100-seat auditorium, four 50-seat classrooms, four 150-ft ² labs, an 8,000-ft ² resistance-training laboratory, and administrative space. The new facility would be constructed just south of the SERE training compound.	None	New Construction: 20,538 Demolition: 32,539	-12,001
C4. Construct Base Operations Facility Building 1	090014	2015	Airfield O&M	Construction of a new modern Base Operations Facility on the existing facility location and demolition of the antiquated (constructed in 1953) dilapidated facility. This facility would house airfield management, weather, crew communications, life support, and passenger terminal.	ERP Sites, QD Ares, AICUZ, Cultural	New Construction: 18,076 Demolition: 21,809	-3,733

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
C5. Construct Airfield Communications Facility	080075	2017	Industrial	Construction of a new Airfield Communications Facility with reinforced concrete foundation, steel framing, insulated masonry shell, and a metal roof. Provide parking, access roads, landscaping, and site improvements. Includes demolition of Building 1200, pavements, and fencing. Construction of a new facility to improve installation communications infrastructure and to provide redundancy for force protection.	None	New Construction: 3,875 Demolition: 30,462	-26,587
C6. Construct CES/ CONS Complex	902509	2017	Industrial	Construction of a new CES/CONS Administrative and Shop facility including associated parking and infrastructure. Demolition of World War II-era facilities (Buildings 2025 and 2451) and associated parking and infrastructure.	ERP Sites, Cultural	New Construction: 100,000 Demolition: 250,000	-150,000
Net Change in Impervious Surface							-151,708

Key: ft² = square feet; FY = fiscal year; ERP = Environmental Restoration Program; O&M = operations and maintenance; QD = quantity-distance; AICUZ = Air Installation Compatible Use Zone

For Project C2, a new 6,835-ft² facility would be constructed and the existing facility (14,574 ft²) and pavement (33,023 ft²) would be demolished. The new PMEL Facility would be constructed with reinforced concrete footings, foundation, and floors; steel framing; insulated brick exterior façade; and metal roof. Construction would include all associated utilities, site work, paving, and landscaping.

C3. Construct Peacetime Governmental Hostage/Detention Training Facility. Project C3, Construct Peacetime Governmental Hostage/Detention Training Facility, entails the construction of a new facility and demolition of the existing facility. The purpose of Project C3 is to construct an adequate facility that would provide the USAF with capabilities to conduct Level-C Code of Conduct training in Peacetime Governmental Hostage/Detention Survival, as directed by the DOD. Project C3 is needed because the 336th Training Group at Fairchild AFB does not currently have a facility that can accommodate or be modified to accommodate Peacetime Governmental Hostage/Detention Survival Training. For Project C3, a new 20,538-ft² facility would be constructed and the existing facility (32,539 ft²) would be demolished. There would be an overall decrease in impervious surface area (approximately 12,000 ft²). Minor infrastructure and utility improvements would also occur. The new facility would include a 100-seat auditorium, four 50-seat classrooms, four 150-ft² labs, an 8,000-ft² resistance-training laboratory, and administrative space. The new facility would be constructed immediately south of the SERE training compound.

C4. Construct Base Operations Facility Building 1. Project C4, Construct Base Operations Facility Building 1, entails the construction of a new modern Base Operations Facility and demolition of the antiquated, dilapidated existing facility. The purpose of Project C4 is to provide a more modern, structurally sound facility to house airfield management, weather, crew communications, life support, and passenger terminal. Project C4 is needed because the existing facility (constructed in 1953) is deteriorating and functionally restricted, does not provide enough space for crews, has a leaking roof and windows, and is subject to chronic flooding in the basement. For Project C4, the new 18,076-ft² Base Operations Facility would be constructed and the existing facility (21,809 ft²) would be demolished. Once the existing facility has been demolished, the new Base Operations Facility would be constructed in the same location as the existing facility. The new Base Operations Facility would contain a fire suppression system, allow crews to effectively and efficiently meet mission requirements and goals, provide improved passenger processing, and would be compliant with the Americans with Disabilities Act (ADA). Sustainable principles would be integrated into the design, development, and construction of the new Base Operations Facility. Passive force protection measures would be included in the new construction to fulfill the requirement to provide restricted access from the flightline side of the facility with gates and high curbing.

C5. Construct Airfield Communications Facility. Project C5, Construct Airfield Communications Facility, entails the construction of a new Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Building 1200) and its associated pavements and fencing. The purpose of Project C5 is to provide modern equipment, maintenance, and office space in support of the 92d Communications Squadron's ground-to-air communications mission. Project C5 is needed because the existing meteorological and navigation facility (constructed in 1954) is in need of extensive repair, has utility systems that are obsolete, lacks fire suppression and alarm systems, is poorly insulated, and does not allow proper access to enclosed equipment. The new Airfield Communications Facility would be 3,875 ft²; would be in compliance with ADA; and would be constructed with updated, energy-efficient utilities, fire suppression, and alarm systems. The new facility would include an equipment room for transmitter and receiver equipment, a shielded maintenance room to prevent transmission interference during equipment calibration and testing, storage for field test equipment, office space, and a training area. New construction would include a concrete foundation, steel framing, insulated masonry, a metal roof, parking, landscaping, site improvements, a new access road to the SERE School, and resurfaced access roads to the control tower and flightline. The demolition of Building 1200 and its associated pavements and fencing would result in a total decrease of 30,462 ft² of impervious

surface area. Upon completion of Project C5, the total net decrease in impervious surface area would equate to 26,587 ft².

C6. CES/CONS Complex. Project C6, Construct CES/ CONS Complex, entails the construction of a new CES/CONS Administrative and Shop facility and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). The purpose of Project C6 is to provide a modern, energy-efficient administrative building that would house all 92 CES and CONS personnel. Project C6 is needed because the 92 CES and CONS personnel are currently housed in a facility that has severe roof leaks, is costly to maintain, and does not allow compatible future development in the community service area of the installation. The new CES/CONS Administrative and Shop facility would be 100,000 ft²; would meet current building, fire, life safety, and energy codes; would be constructed with updated utilities; and would include parking and associated site improvements. Buildings 2025 and 2451 (250,000 ft²) and their associated parking areas and infrastructure would be demolished, which would result in a net decrease of approximately 150,000 ft² of impervious surface area by the time Project C6 is completed.

2.1.5 Infrastructure Improvement Projects

Of the infrastructure improvement projects proposed at Fairchild AFB over the next 5 FYs (as identified in **Appendix A**), two were selected for detailed analysis as selected projects under the Proposed Action. The other remaining proposed infrastructure improvement projects are addressed in the cumulative impacts analysis for this IDEA. The selected infrastructure improvement projects could disturb as much as 480,000 ft² of land. Projects within this category include the removal, installation of, or upgrades to, paved roadways, sidewalks, parking lots, utilities, storm water systems, fences, and outdoor recreational facilities. **Table 2-3** identifies the selected infrastructure improvement projects to be evaluated in detail in this IDEA, and **Figures 2-1** and **2-2** show the possible locations of the selected infrastructure improvement projects relative to known constraints at Fairchild AFB.

The selected infrastructure improvement projects are believed to encompass the upper range of potential impacts on the natural and man-made environment from such projects in the infrastructure improvement category and thus frame the upper limits for potential impacts that reasonably could be expected from the projects proposed at the installation. For example, the construction of two new ducts near Building 1270 and the demolition and replacement of the overhead lines servicing Feeder No. 1 would entail extensive trenching and excavation across large portions of the installation. An example of pavement demolition, removal, and replacement resulting in a large area of land disturbance would be the repair/right-size of the airfield. The other infrastructure improvement projects identified in **Appendix A** not selected under the Proposed Action are considered in the cumulative impacts analysis of this IDEA.

All fill used for infrastructure improvement activities would be obtained from an approved borrow pit and screened to ensure it does not contain cultural resources. All trees and vegetation impacted from infrastructure improvement activities would be replaced or relocated, as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with appropriate ground cover. Greater detail on each of the selected infrastructure improvement projects is given in the following paragraphs.

II. Repair Electrical Power South Substation. Project I1, Repair Electrical Power South Substation, entails the repair of the electrical power substation (Building 1270). The purpose of Project I1 is to repair the Electrical Power South Substation. Project I1 is needed to provide adequate electrical reliability to the installation. For Project I1, two new ducts would be constructed near Building 1270 and the overhead lines servicing Feeder No. 1 would be demolished and replaced. Nearly 3,000 linear feet of upgraded cable would be installed, including all necessary soil excavation, concrete separators, ducts, manholes, and demolition.

Table 2-3. Selected Infrastructure Improvement Projects Analyzed in this IEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
11. Repair Electrical Power South Substation (Building 1270)	120065	2013	Industrial	Construction of two new ducts near Building 1270 and the demolition and replacement of the overhead lines servicing Feeder No. 1. Nearly 3,000 linear feet of upgraded cable will be laid including all necessary excavation, concrete separators, ducts, manholes, demolition, and disposal fees.	None	30,000	0
12. Repair/Right-size Airfield: Multiple Areas	110030 100161/100162 100156/100157 110028	2013	Airfield Pavements, Airfield	Demolition, removal, and replacement of pavement and curbs (Aircraft Parking Stubs 15-24). The concrete would be removed (a total of approximately 145,269 ft ²). Aircraft Parking Stubs 15-24 are across the taxiway that runs in front of the hangar row (Buildings 1001 through 1009). Replacement of 25-foot-by-25-foot, 17-inch-thick Portland Concrete Cement slabs on the Heavy-Duty Maintenance Apron (a total of approximately 300,531 ft ²). These areas for replacement are adjacent to Building 2050. Repair/right-size Taxiway G (from Runway to Taxilane J) and Taxiway E (from Taxilane J to Taxiway P) (a total of approximately 129,816 ft ²). Repair pavement of Taxiway P (from Taxiway C to Taxiway A) (a total of 207,531 ft ²).	Airfield, QD Arcs, ERP Site	783,144	0
Net Change in Impervious Surface							0

Key: ft² = square feet; FY = fiscal year; QD = quantity-distance; ERP = Environmental Restoration Program

12. Repair/Right-size Airfield: Multiple Areas. Project I2, Repair/Right-size Airfield: Multiple Areas, includes the demolition, removal, and replacement of pavements and curbs on Aircraft Parking Stubs 15 through 24, the Heavy-Duty Maintenance Apron, Taxiway G, Taxiway E, and Taxiway P. The purpose of Project I2 is to repair and right-size the airfield to meet current mission requirements. Project I2 is needed because the current airfield pavements do not provide safe and adequate space for aircraft taxiing and parking. For Project I2, the existing concrete for Aircraft Parking Stubs 15-24 (approximately 145,269 ft²) would be removed. Aircraft Parking Stubs 15-24 are located across the taxiway that runs in front of the hangar row (Buildings 1001 through 1009). Project I2 would include the replacement of 25-foot by 25-foot by 17-inch-thick Portland Concrete Cement slabs on the Heavy-Duty Maintenance Apron (approximately 300,531 ft²). These areas for replacement are adjacent to Building 2050. Project I2 also includes the repair/right-size of Taxiway G (from the runway to Taxilane J) and Taxiway E (from Taxilane J to Taxiway P), which equate to a total of approximately 129,816 ft²; and the repair/right-size of Taxiway P (from Taxiway C to Taxiway A), which equates to a total of approximately 207,531 ft². The total square footage of pavements to be demolished, removed, and replaced under Project I2 is approximately 783,144 ft².

2.1.6 Natural Infrastructure Management Projects

This IDEA addresses one natural infrastructure management project proposed over the next 5 FYs (FY 2013 to FY 2018) to support future mission requirements. This is the only natural infrastructure management project proposed over the next 5 FYs at Fairchild AFB. As such, no other projects exist for the natural infrastructure management category. In general, projects within this category include initiatives that enhance natural resources management (i.e., land, water, and airspace), cultural resources management, air quality, and grounds maintenance. The selected natural infrastructure management project would disturb as much as 10,890,000 ft² of land. There would be no change in impervious surfaces resulting from this natural infrastructure management project. **Table 2-4** identifies the selected natural infrastructure management project associated with the Proposed Action at Fairchild AFB. **Figure 2-2** shows the possible location of the natural infrastructure management project associated with the Proposed Action relative to known constraints at Fairchild AFB. Greater detail on the selected natural infrastructure management project is given in the following paragraph.

NI1. Prairie Restoration, Phases I and II. Project NI1, Prairie Restoration, Phases I and II, entails prairie restoration in two phases: Phase I would occur in 2013 and Phase II would occur in 2014. The purpose of Project NI1 is to restore native prairie areas as a function of controlling noxious weeds in accordance to EO 13112, *Invasive Species*. Project NI1 is needed to control dominant invasive weed species within the green spaces of the installation. Each phase would consist of prairie restoration and long-term weed control in an area encompassing 10,890,000 ft² of land. Specifically, native vegetation would be restored in areas where noxious weeds are growing, where noxious weeds were previously present, and where noxious weeds have occupied the majority of the ground cover. The weeds are so predominant that intervention is necessary to restore ecological balance. Multiple steps would be required, including a comprehensive weed-control strategy, managed disturbance, biological weed control, maintenance level herbicide applications, and planting of native plants to compete and intervene to control invasive plants. This project would take place in the southernmost portion of Fairchild AFB where the Flora Special Species Management Area is located. This area of the installation is known to contain Spalding's catchfly and its associated habitat. Spalding's catchfly and its associated habitat are protected on Fairchild AFB; however, habitat throughout the installation is not known to be critical for any of the Federal- and state-listed or sensitive species. In February 2007, Fairchild AFB submitted a Biological Assessment (BA) to the U.S. Fish and Wildlife Service (USFWS) to address weed control and habitat protection using herbicide treatment within a small conservation area for Spalding's catchfly on Fairchild AFB. The BA concluded that these activities "may affect, but not likely to adversely affect" the population and may positively affect the habitat increasing the potential for further recovery. In May

Table 2-4. Selected Natural Infrastructure Management Project Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
NI1. Prairie Restoration/ Long-term Weed Control Phases I and II	1274001, 1374001	2013, 2014	Open Space	Restore native vegetation in two phases; in areas where noxious weeds are/were present and have occupied the majority of the ground cover (Phase I in 2013 and Phase II in 2014). Project includes comprehensive weed-control strategy, managed disturbance, biological weed control, maintenance-level herbicide applications, planting of native plants to compete, and intervention to control invasive plants.	T&E, Wetlands, ERP Sites, QD Arcs	Phase I: 10,890,000 Phase II: 10,890,000	0
Net Change in Impervious Surface							0

Key: ft² = square feet; FY = fiscal year; T&E = threatened and endangered; ERP = Environmental Restoration Program; QD = quantity-distance

2007, Fairchild AFB received concurrence from the USFWS that the proposed activities, as described in the BA, are “not likely to adversely affect” Spalding’s catchfly. Range-wide recovery actions proposed by the Draft Recovery Plan for Spalding’s catchfly are detailed in the BA.

2.1.7 Strategic Sustainability Performance Projects

Projects within this category include alternative energy projects and projects that support energy conservation measures. This IDEA addresses one strategic sustainability performance project over the next 5 FYs (FY 2013 to FY 2018) to support future mission requirements (see **Table 2-5**). This is the only strategic sustainability performance project proposed over the next 5 FYs at Fairchild AFB. As such, no other projects exist for the strategic sustainability performance category. There is no anticipated change in impervious surfaces resulting from the strategic sustainability performance project. Any trees and vegetation impacted from the strategic sustainability performance project would be replaced or relocated, as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with a commercial grass mix. **Table 2-4** identifies the selected strategic sustainability performance project to be evaluated in detail in this IDEA, and **Figure 2-1** shows the possible location of the selected project relative to known constraints at Fairchild AFB. Greater detail on the selected strategic sustainability performance project is given in the following paragraph.

All fill used for construction activities would be obtained from an approved borrow pit and screened to ensure it contains no cultural resources materials. All trees and vegetation impacted from the strategic sustainability performance construction activities would be replaced or relocated, as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with appropriate species. Greater detail on the selected strategic sustainability performance project is given in the following paragraph.

S1. Repair/Replace, Heating, Ground-Source Heat Pump- (GSHP) Boiler Hybrid, Air Force Office of Special Investigations (AFOSI) Building 644. Project S1, Repair/Replace, Heating, GSHP-Boiler Hybrid, AFOSI Building 644, entails the replacement of four existing boilers in Building 644 with a new geothermal heat pump system and one high-efficiency condensing boiler. The purpose of Project S1 is to replace existing boilers with high-efficiency boilers that would reduce energy consumption and overall cost of heating Building 644. Project S1 is needed because the current boilers have a measured efficiency of 40 percent. This project would replace these existing boilers with three 75 percent efficient GSHPs and one 95 percent efficient condensing boiler. The heat pumps would be installed to the east-southeast of Building 644, using vertical construction.

2.1.8 Summary of Proposed Activities

Over the course of the next 5 years (2013 through 2018), implementation of all of the selected projects described in the preceding subsections and identified in **Tables 2-1** through **2-5**, a total of approximately 871,275 ft² of buildings and pavements would be demolished resulting in an overall decrease in impervious surface area at Fairchild AFB. The selected demolition projects would remove an estimated 488,868 ft² of facilities and pavements. The selected construction projects would add an estimated 230,699 ft² of new facilities and pavements and would remove an estimated 382,407 ft² of facilities and pavements, which would equate to an overall decrease of impervious surface area (151,708 ft²). As a result of both selected construction and demolition projects, the overall impervious surface area at Fairchild AFB would decrease (approximately 640,576 ft²). The selected infrastructure improvement projects and the selected natural infrastructure management project could disturb as much as 813,144 ft² and 10,890,000 ft² of land, respectively; however, there would be no net change in impervious surface area from these projects. In addition, there would be no net change in impervious surfaces from strategic sustainability performance projects. **Table 2-6** summarizes the anticipated project areas and changes in impervious surface area from the selected projects under the Proposed Action.

Table 2-5. Selected Strategic Sustainability Performance Projects Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
S1. Repair/Replace, GSHP-Boiler Hybrid, AFOSI Building 644	110080	2013	Administrative	Replace four existing boilers with a new geothermal heat pump system and one high-efficiency condensing boiler. Building 644 has boilers with measured efficiency of less than 40 percent. This project will replace these boilers with three 75 percent-efficient GSHPs and one 95 percent-efficient condensing boiler.	ERP Sites	–	0
Net Change in Impervious Surface							0

Key: ft² = square feet; FY = fiscal year; GSHP = ground-source heat pump; AFOSI = Air Force Office of Special Investigations; ERP = Environmental Restoration Program

Table 2-6. Change in Impervious Surfaces from Selected Projects

Project Type	Total Project Area (ft²)	Change in Impervious Surfaces (ft²) ^a
Demolition	492,198	-488,868
Construction ^b	495,030	-151,708
Infrastructure Improvement	813,144	No change
Natural Infrastructure Management	10,890,000	No change
Strategic Sustainability Performance	None	No change
Total		-640,576

Notes:

- a. Changes in impervious surfaces are not necessarily equivalent to the project area square footage because some facilities proposed for demolition are multiple stories, and many new facilities would be multiple stories. Furthermore, some infrastructure improvement and natural infrastructure management projects would disturb area but not add impervious surfaces.
- b. Construction projects include the demolition of associated existing facilities and pavements.

2.2 Alternatives

All proposed projects and their associated possible locations at Fairchild AFB have undergone an intensive review by 92 CES Planning and Asset Management Flights and supporting installation staff. During revision to Fairchild AFB installation development plans and individual project planning and programming, alternatives for all projects are considered and evaluated. The best operational and engineering solutions, including facility siting proposals, are identified based on the following selection criteria:

- Fulfillment of current mission requirements
- Facility sustainability as mission evolves or changes
- Economical feasibility
- Consistency with future land uses, General Plan, LRDP, SERE Master Plan, and resource management plans
- Consistency with state, regional, and local plans
- Consistency with DOD and USAF policies, guidances, and directives
- Functional compatibility with adjacent facilities
- Collocation of like services
- Availability of sites and adequacy of space
- Adherence to USAF Strategic Sustainable Performance goals and objectives
- Environmental constraints (see **Section 2.1.2**).

All proposed projects are reviewed and approved by the FUB, which is chaired by the Wing Commander.

Some projects, such as those that require demolition, renovation, or an addition to a specific building, might not have any alternatives by their very nature. Based on the listed criteria, the scope and possible

locations for each project identified in **Section 2.1** were determined by installation personnel to be mission-supportive, sustainable, and economical. **Section 2.2.1** provides an overview of the alternative analysis determination process.

The individual projects identified in this IDEA would be prioritized and implemented as funding becomes available. The Proposed Action encompasses all the currently identified priority projects and the analyses describe the specific and cumulative consequences of implementing installation development. Since project phasing is expected to occur based on the availability of funding, no phasing alternatives were carried forward for independent analysis. The following subsections discuss alternatives for each of the project categories.

2.2.1 Alternatives Analysis

The process for selecting projects to be analyzed in the IDEA is initiated with a review of all projects included in the Fairchild AFB General Plan, LRDP, SERE School Master Plan, and resource management plans. The inclusion of a project in an installation-approved plan begins with the identification of a DOD mission-essential requirement by a proponent. The proponent submits the requirement to the Base Civil Engineer (BCE) for project consideration. Working with the proponent, the Engineering staff, and other subject matter experts (SMEs), including planners and environmental scientists, the BCE conducts an internal review to determine if the requirement can be met with operational or engineering solutions, while minimizing potential environmental impacts on natural and man-made environments. Additional reviews are conducted to determine if the proposed solution is consistent with the AT/FP Plan, INRMP, ICRMP, and other approved installation plans. If the requirement includes facility construction, the internal review will include an evaluation of alternatives for potential development sites, which, in turn, must meet mission and national security requirements and minimize potential environmental concerns. The siting analysis for the proposed facility considers the adequacy of the site to fulfill current requirements with space for future expansion, functionality, command and control, compatibility with existing and future land use, compatibility with adjacent facilities, infrastructure availability, and site development costs. Once the requirement is determined to need an engineering solution and is consistent with installation plans, a project is created and additional screening is conducted to determine placement of the project into the appropriate construction program (i.e., MILCON; Sustainment, Restoration, and Modernization [SRM]; Non-Appropriated Funds [NAF]) or plan (i.e., INRMP, ICRMP). Finally, the project is presented to the FUB for approval. If it is approved, it is assigned a priority and recommended for a specific FY for completion.

2.2.2 Alternatives Evaluated for Demolition Projects

The demolition projects selected under the Proposed Action are proposed for demolition because they no longer meet the selection criteria described in **Section 2.2**. As presented in **Table 2-7**, the FUB determined that the four selected demolition projects are no longer needed to support current mission requirements and are economically inefficient to repair or renovate. Further, Air Force Handbook 32-1084, *Facility Requirements*, has decreased the space requirements for many functions, which means that functionalities within different facilities can often be combined and aging facilities can be demolished. In accordance with AFI 32-1032, *Planning and Programming Appropriated Funded Maintenance, Repair, and Construction Projects*, it is USAF policy to replace a facility when the estimated repair cost exceeds 100 percent of the replacement cost. All facilities proposed for demolition have either been deemed to be unusable or too costly to repair or renovate to meet future mission requirements of Fairchild AFB by the FUB, 92 CES, and other installation personnel.

Table 2-7. Justification for Selected Building Demolition Projects

Project Number/ Description	Year Constructed	Project Area (ft²)	Facilities Utilization Board Justification for Demolition
D1. Demolish Ammunition Storage Facilities	1952, 1954, 1955, 1956	252,744	The ammunition storage facilities are no longer needed to support mission requirements, are economically inefficient to maintain or upgrade for an alternative use, and functionalities are being moved to other facilities.
D2. Demolish Building 2001E	1943	39,204	Building 2001E does not meet current mission requirements, has exceeded its lifespan, and has become economically inefficient to maintain or upgrade for an alternative use.
D3. Demolish Steam Heat Mains and Abandoned Steam Pits Installationwide	N/A	12,330	The steam heat mains and abandoned steam pits are no longer consistent with current mission requirements and are economically inefficient to maintain.
D4. Demolish Aircraft Hangars	1955, 1958	187,920	The aircraft hangars are no longer consistent with current mission requirements, are economically inefficient to maintain or upgrade for an alternative use, and functionalities are being moved to other facilities.

Additionally, the facilities included as selected demolition projects to be addressed under the Proposed Action are proposed for demolition because they aid Fairchild AFB in achieving the DOD and USAF energy conservation goals, as required by EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, the Energy Independence and Security Act (EISA), and EPAct. The goals include reducing energy consumption/gross square feet by 2 percent each year through FY 2015 with a total reduction of 30 percent from a baseline of FY 2003.

Although not alternatives to demolition, employing different demolition methods, and altering the timing of demolition activity to minimize fugitive dust generation, would be included in the project design. Alternative demolition methods would vary depending on the area where demolition is planned, the building or structural materials to be demolished, the purpose of the demolition, and the way the resultant debris would be disposed of, and are discussed within the analysis, where appropriate. These alternative demolition methods are not alternatives in the sense that the USAF would consider them during project planning, but rather, the USAF would choose the appropriate demolition method as dictated by local site conditions.

2.2.3 Alternatives Evaluated for Construction Projects

Fairchild AFB supports a complex variety of command-level activities. As noted in **Sections 2.1.2** and **Figures 2-1** and **2-2**, much of the installation is constrained by the location of the airfield and its associated airfield infrastructure, CZs, APZs, and noise zones; the existence of cultural resources sites; QD arcs; numerous IRP sites, Compliance Restoration sites, and MMRP sites; wetland areas; threatened and endangered species and their associated habitats; AT/FP standoffs; and designated land use categories. Due to the constraints described here and in **Section 2.1.2**, the analyses provided in this IDEA

addressing the selected projects evaluates their siting anywhere within the improved or semi-improved areas of the installation that are within compatible land use areas of the installation.

Specific alternatives to the five selected construction projects were considered by the 92 CES and other installation personnel during the planning process for these projects. The following paragraphs provide a summary of the alternatives considered and the reasoning when no reasonable alternatives were identified or were included for further detailed evaluation in this IDEA.

Alternative for Project C1. Construct Pipeline Dormitory. Under this alternative, all of the construction activities discussed under the Proposed Action for Project C1 (Construct Pipeline Dormitory) (see **Section 2.1.4**) would occur; however, Buildings 1334 and 1342 would be demolished and the new dormitory would be constructed in the area where Buildings 1334 and 1342 were previously located. These buildings are currently in an industrial land use area, which is not compatible with the construction of a dormitory, and this area is at a further distance from the dining facility. In addition, this alternative does not meet the following selection criteria presented in **Section 2.2**: consistency with future land uses and the General Plan, functionality compatibility with adjacent facilities, and collocation of like services. Therefore, this alternative was eliminated from further detailed analysis in the IDEA.

Alternative for Project C2. Construct PMEL Facility. Under this alternative, the existing PMEL Facility would be demolished and the new PMEL Facility would be constructed in the same location. However, new operational requirements mandate that the PMEL Facility be located away from the flightline due to excessive vibration from aircraft operations. In addition, this alternative does not meet the following selection criteria presented in **Section 2.2**: fulfillment of current mission requirements, functional compatibility with adjacent facilities, and collocation of like services. Therefore, this alternative was eliminated from further detailed analysis in the IDEA.

Alternative for Project C3. Construct Peacetime Governmental Hostage/Detention Training Facility. Under this alternative, all of the construction activities discussed under the Proposed Action for Project C3 (Construct Peacetime Governmental Hostage/Detention Training Facility) (see **Section 2.1.4**) would occur; however, the Peacetime Governmental Hostage/Detention Training Facility would be constructed on the north side of Building 1712. In order to facilitate the SERE training mission, the new facility needs to be constructed near the SERE training compound. The project area for this alternative is not near the SERE training compound. In addition, this alternative does not meet the following selection criteria presented in **Section 2.2**: fulfillment of current mission requirements; consistency with future land uses, General Plan, LRDP, SERE Master Plan, and resource management plans; functional compatibility with adjacent facilities, and collocation of like services.

Alternative for Project C4. Construct Base Operations Facility Building 1. Under this alternative, all of the construction activities discussed under the Proposed Action for Project C4 (Construct Base Operations Facility Building 1) (see **Section 2.1.4**) would occur; however, the new Base Operations Facility would be constructed northeast of the existing building, in the open land area near the flightline. Constructing the new Base Operations Facility in the open land area near the flightline would not allow compatibility with future land uses or future mission requirements. In addition, this alternative does not meet the following selection criteria presented in **Section 2.2**: consistency with future land uses and the General Plan, functional compatibility with adjacent facilities, and collocation of like services. Therefore, this alternative was eliminated from further detailed analysis in the IDEA.

Alternative for Project C5. Construct Airfield Communications Facility. Under this alternative, all of the construction activities discussed under the Proposed Action for Project C5 (Construct Airfield Communications Facility) (see **Section 2.1.4**) would occur; however, the new facility would be constructed in a new location, in the immediate vicinity of the existing air traffic control tower at Fairchild AFB. This alternative would require the relocation and extension of communications lines to

the new location, which would not be as economically efficient. In addition, this alternative does not meet the following selection criteria presented in **Section 2.2**: economical feasibility, consistency with future land uses and the General Plan, and availability of sites and adequacy of space. Therefore, this alternative was eliminated from further detailed analysis in the IDEA.

Alternative for Project C6. Construct CES/CONS Complex. Under this alternative, all of the construction activities discussed under the Proposed Action for Project C6 (Construct CES/CONS Complex) (see **Section 2.1.4**) would occur; however, the CES/CONS Complex would be constructed on the flightline near Building 1003. Constructing the CES/CONS Complex in this location would decrease the installation footprint that would be available for future mission expansion. Specifically, the site is within the airfield operations and maintenance land use category and is reserved for future aircraft support. In addition, this alternative does not meet the following selection criteria presented in **Section 2.2**: consistency with future land uses and the General Plan, functionality compatibility with adjacent facilities, availability of sites, and adequacy of space. Therefore, this alternative was eliminated from further detailed analysis in the IDEA.

2.2.4 Alternatives Evaluated for Infrastructure Improvement Projects

Infrastructure improvement projects generally include the removal, installation of, or upgrades to airfield pavements, paved roadways, sidewalks, parking lots, utilities, storm water systems, fences, and outdoor recreational facilities. Alternatives are limited to existing and proposed locations of real property facilities (i.e., buildings, structures) and non-real property assets (i.e., aircraft, equipment, vehicles) that the infrastructure serves. As noted in **Section 2.2.3**, Fairchild AFB is a densely constructed installation supporting a complex variety of command-level activities. Consequently, the need for adjacency in operational activity and the overall lack of and competition for available space results in most infrastructure alternatives being limited to areas that such infrastructure would serve.

Project I1 (Repair Electrical Power South Substation) is required to prevent continued deterioration and to upgrade the existing substation in order to meet current and future demand. It would be inefficient and there would be greater environmental impacts if a new substation was constructed; therefore, alternatives to this project were considered but eliminated from further detailed analysis. Project I2 (Repair/Right-size Airfield: Multiple Areas) is required because the existing pavements and curbs on the aircraft parking aprons are deteriorating and do not support mission requirements. It would be inefficient, and there would be greater environmental impacts if new aprons were constructed; therefore, alternatives to this project were considered but eliminated from further detailed analysis. Additionally, as noted in **Section 2.1.2** and **Figures 2-1** and **2-2**, much of the installation is constrained by the existing land use. Due to the constraints described here and in **Section 2.1.2**, the selection criteria presented in **Section 2.2**: the fulfillment of current mission requirements, consistency with future land uses and the General Plan, the collocation of like services, the availability of sites and adequacy of space, and environmental constraints preclude the development of reasonable alternatives to the infrastructure improvement projects analyzed in this IDEA.

2.2.5 Alternatives Evaluated for Natural Infrastructure Management Projects

Natural infrastructure management projects are selected because they are required to ensure the natural environment remains compatible with military operations; the goals and objectives identified in the INRMP and ICRMP are met; and environmental statutes, rules, regulations, and permit conditions are followed. There are no alternatives to the natural infrastructure management project at Fairchild AFB. Project NI1 (Prairie Restoration/Long-term Weed Control Phases I and II) includes both the use of herbicides and biological controls. Project NI1 is a programmatic endeavor that is a site-specific action that cannot be conducted elsewhere.

2.2.6 Alternatives Evaluated for Strategic Sustainability Performance Projects

Specific alternatives to the selected strategic sustainability performance project were considered by the 92 CES and other installation personnel during the planning process. Other facilities and alternate locations for the geothermal well field were considered, and the facilities and locations described under Project S1 were determined to be the only practicable alternative. Therefore, the FUB determined that there are no alternatives to the strategic sustainability performance project at Fairchild AFB. Implementation of Project S1 (Repair/Replace Heating, GSHP-Boiler Hybrid, AFOSI Building 644) would be in compliance with EO 13514, *Federal Leadership In Environmental, Energy, And Economic Performance*, and EO 13423 by incorporating sustainable design through implementing green technologies.

2.3 No Action Alternative

CEQ regulations require consideration of the No Action Alternative for all proposed actions. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and other potential action alternatives can be compared and consequently it is carried forward for further evaluation in this IDEA. The No Action Alternative would be “no change” from current practices, or continuing with the present course of action until that action is changed.

Through implementation of the No Action Alternative, future installation development projects would continue to be evaluated on an individual project basis. It is anticipated that future development would occur under the No Action Alternative, but those development projects would be analyzed through the preparation of project-specific NEPA documentation, as appropriate. This alternative is carried forward for analysis as a baseline against which the impacts of the Proposed Action and potential action alternatives can be evaluated.

2.3.1 No Action Alternative for Selected Demolition Projects

Under the No Action Alternative, the selected demolition projects would not be implemented. In some situations relevant to the projects addressed in the IDEA, mission functions would continue to occur, and personnel would continue to work in obsolete, deteriorating, and underused facilities or would be consolidated into other less appropriate facilities within the installation, if space is available. In addition, limited funding would have to be used to continue maintenance and upkeep of these facilities diverting necessary funding away from other mission-essential functions. The No Action Alternative for demolition projects is considered unreasonable because it would prevent Fairchild AFB from meeting its prescribed goals and reducing the physical plant footprint on the installation pursuant to the “20/20 by 2020” initiative or allowing the installation to make space available for future development.

2.3.2 No Action Alternative for Selected Construction Projects

Under the No Action Alternative, the selected construction projects under the Proposed Action would not be built. In some situations relevant to the projects addressed in this IDEA, Fairchild AFB would not have new state-of-the-art facilities to accommodate current and future missions and address facility workspace requirements. For instance, projects to upgrade and enhance AT/FP and communications capabilities would not be constructed, causing the installation to decrease mission efficiency and experience difficulty meeting national security requirements. Projects planned to enhance morale and wellness for active and retired military members and their dependents would not be constructed, causing fitness and other recreational programs to be held in facilities that are inadequate in size and considered to be in substandard conditions; ultimately causing Fairchild AFB to experience difficulty meeting USAF physical fitness and welfare requirements.

2.3.3 No Action Alternative for Selected Infrastructure Improvement Projects

Under the No Action Alternative, the selected infrastructure improvement projects would not be implemented. In some situations relevant to the projects addressed in this IDEA, Fairchild AFB would continue to use obsolete and deteriorating utilities, vehicle and storage parking space would continue to be inadequate to support mission functions and meet national security objectives, and the installation's roadways and airfield pavements and parking space would continue to deteriorate and could cause unsafe conditions. Fairchild AFB would still be required to repair breaks and interruptions in utilities and would continue to repair cracks and deteriorating pavement areas by patching until their useful life has ended. In addition, not upgrading and replacing outdated and unsafe infrastructure would hinder Fairchild AFB's mission and security objectives and could increase potential foreign object damage (FOD) hazards to aircraft.

2.3.4 No Action Alternative for Selected Natural Infrastructure Management Projects

Under the No Action Alternative, the natural infrastructure management project would not be implemented. Fairchild AFB would not be in full compliance with INRMP management objectives and would not be able to restore natural prairie areas as a function of controlling noxious weeds or enhance habitat for sensitive species. In addition, Fairchild AFB would not be in full compliance with Federal, state, and local regulations requiring protection of water quality and sensitive species and their associated habitat.

2.3.5 No Action Alternative for Selected Strategic Sustainability Performance Projects

Under the No Action Alternative, the selected strategic sustainability performance project under the Proposed Action would not be built. The installation would not replace existing boilers with a new GSHP and high-efficiency condensing boiler, and thus, would not meet the purpose of and need for reducing the installation's overall carbon footprint, reducing dependency on foreign oil, and improving local and regional air quality.

2.4 Decision to be Made and Identification of the Preferred Alternative

In this IDEA, Fairchild AFB provides an evaluation of selected projects to determine whether the Proposed Action would result in any significant impacts. If such impacts are predicted, Fairchild AFB would provide mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS addressing the Proposed Action, or abandon the Proposed Action. This IDEA will also be used to guide Fairchild AFB in implementing the Proposed Action, should it be approved, in a manner consistent with USAF standards for environmental stewardship. The Preferred Alternative is the Proposed Action as set forth in **Section 2.1**.

3. Affected Environment

Section 3 describes the environmental resources and conditions most likely to be affected by the Proposed Action and provides information to serve as a baseline from which to identify and evaluate potential environmental and socioeconomic impacts that could result from the Proposed Action. Baseline conditions represent current conditions. The potential environmental impacts of the Proposed Action and the No Action Alternative on the baseline conditions are described in **Section 4**. In compliance with NEPA, CEQ guidelines, and USAF guidance in 32 CFR § 989, as amended, the description of the affected environment focuses on those resources and conditions potentially subject to impacts.

3.1 Noise

3.1.1 Definition of the Resource

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. Affected receptors are specific (e.g., schools, churches, or hospitals) or broad areas (e.g., nature preserves or designated districts) in which occasional or persistent sensitivity to noise above ambient levels exists.

Noise Metrics and Regulations

Noise Metrics. Two types of measurements are normally considered when determining noise impacts on the surrounding population: the DNL and peak sound levels. DNL represents daily operations averaged over a prescribed time period with a 10-decibel (dB) penalty assigned to noise events occurring hours between the hours of 10 p.m. and 7 a.m. DNL is the primary descriptor of noise impacts because it represents a daily average. Single-event noise levels are also used to assess the risk of noise complaints. A peak sound level is a single noise event; it is the estimated maximum noise level that is heard.

Sound levels can be dBA, C-weighted (dBC), or unweighted (dBP). The dBA measurement depresses the noise levels in low- and high-frequency bands to approximate the range of human hearing. This noise measurement provides a good indication of the impact produced by aircraft activities. The dBC measurement includes a lower frequency range of sounds than the A-scale, and only is used to evaluate the DNL noise levels from the proposed explosive ordnance proficiency range operations. The low-frequency components of sound from high-amplitude impulse noise cause buildings and windows to shake and rattle (vibration). Peak sound pressure levels (PK15[met]), a single event metric, is only used to evaluate the levels from proposed explosive ordnance proficiency range operations. PK15(met) accounts for statistical variation in received single-event peak noise levels due to weather. It is the calculated peak noise level, without frequency weighting, expected to be exceeded by 15 percent of all events that might occur. If there are multiple weapon types fired from one location, or multiple firing locations, the single-event level used is the loudest noise level that occurs at each receiver location. PK15(met) does not take the duration or the number of events into consideration; it is measured in dBP.

Federal Regulations. DNL is the designated metric of the Federal government for measuring noise and its impacts on humans. According to the USAF, FAA, and HUD criteria, residential units and other

noise-sensitive land uses are “clearly unacceptable” in areas where the noise exposure exceeds 75 dBA DNL, “normally unacceptable” in regions exposed to noise between 65 and 75 dBA DNL, and “normally acceptable” in areas exposed to noise of 65 dBA DNL or less. The Federal Interagency Committee on Noise developed land use compatibility guidelines for noise in terms of DNL (FICON 1992). For outdoor activities, the USEPA recommends 55 dBA DNL as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (USEPA 1974).

State Regulations. Noise regulations for Washington State are provided in Title 173 of the Washington Administrative Code (WAC), Chapter 60: *Maximum Environmental Noise Levels*. This code includes limits for several types of environments. However, sound originating from temporary construction sites as a result of construction activity, sound created by blasting, sound created by the installation, and sound created by repair of essential utility services are all exempt between the hours of 7:00 am and 10:00 pm (Washington State 2012c).

Local Regulations. The Spokane County Code of Ordinances states that it is unlawful for any person to make a sound which creates a noise disturbance (Spokane County 2011a). However, per Section 612.20: Exemptions (Spokane County 2011b), sounds originating from temporary construction sites as a result of construction activity are exempt between the hours of 7:00 a.m. and 10:00 p.m. or when conducted more than 1,000 feet from any residence where humans reside.

Common Sounds. Table 3-1 compares common sounds and shows how they rank in terms of the effects of hearing. As shown, a whisper is normally 30 dBA and considered to be very quiet while an air conditioning unit 20 feet away is considered an intrusive noise at 60 dBA. Noise levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, each 10 dBA increase seems twice as loud (USEPA 1981).

Table 3-1. Sound Levels and Human Response

Noise Level (dBA)	Common Sounds	Effect
10	Just audible	Negligible
30	Soft whisper (15 feet)	Very quiet
50	Light auto traffic (100 feet)	Quiet
60	Air conditioning unit (20 feet)	Intrusive
70	Noisy restaurant or freeway traffic	Telephone use difficult
80	Alarm clock (2 feet)	Annoying
90	Heavy truck (50 feet) or city traffic	Very annoying Hearing damage (8 hours)
100	Garbage truck	Very annoying
110	Pile drivers	Strained vocal effort*
120	Jet takeoff (200 feet) or auto horn (3 feet)	Maximum vocal effort
140	Carrier deck jet operation	Painfully loud

Source: USEPA 1981

Note: * HDR extrapolation

Construction Sound Levels. Building construction and demolition activities can cause an increase in sound that is well above the ambient level. A variety of sounds are emitted from loaders, trucks, saws, and other work equipment. **Table 3-2** lists noise levels associated with common types of construction equipment. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban area.

Table 3-2. Predicted Noise Levels for Construction Equipment

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
Clearing and Grading	
Bulldozer	80
Grader	80 to 93
Truck	83 to 94
Roller	73 to 75
Excavation	
Backhoe	72 to 93
Jackhammer	81 to 98
Building Construction	
Concrete mixer	74 to 88
Welding generator	71 to 82
Pile driver	91 to 105
Crane	75 to 87
Paver	86 to 88

Source: USEPA 1971

3.1.2 Existing Conditions

The ambient noise environment throughout Fairchild AFB is affected mainly by military aircraft operations and automobile traffic. Military operations that impact the noise environment can also include aircraft maintenance activities on the ground and weapons training. In 2007, an AICUZ Study was completed for the installation (FAFB 2007b). As shown in **Figures 2-1** and **2-2** in **Section 2.1.2**, the 65 to 80+ dBA DNL noise contours from the 2007 AICUZ extend northeast and southwest from the runway centerlines and parallel the runways. The 65 dBA DNL noise contour extends outside of the installation boundary to the northeast and southwest. Vehicle use associated with military operations at Fairchild AFB consists of passenger and military vehicles and delivery and fuel trucks. Passenger vehicles compose the majority of the vehicles present at Fairchild AFB and the surrounding community roadways.

Considering the aircraft operations and vehicle traffic at Fairchild AFB, the ambient sound environment around Fairchild AFB is likely to resemble an urban atmosphere.

3.2 Land Use

3.2.1 Definition of the Resource

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, “labels,” and definitions vary among jurisdictions. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational. USAF installation land use planning commonly uses 12 general land use classifications: Airfield, Aircraft Operations and Maintenance, Industrial, Administrative, Community (Commercial), Community (Service), Medical, Housing (Accompanied), Housing (Unaccompanied), Outdoor Recreation, Open Space, and Water (USAF 1998).

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. According to Air Force Pamphlet 32-1010, *Land Use Planning*, land use planning is the arrangement of compatible activities in the most functionally effective and efficient manner (USAF 1998). The highest and best uses of real property are obtained when compatibility among land uses fosters societal interest. Tools supporting land use planning within the civilian sector include written master plans/management plans, policies, and zoning regulations. The USAF comprehensive planning process also uses functional analysis, which determines the degree of connectivity among installation land uses and between on- and off-installation land uses, to determine future installation development and facilities planning.

In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its “permanence.”

3.2.2 Existing Conditions

On-Installation Land Use. There are 11 land use categories at Fairchild AFB: administrative, airfield, aircraft operations and maintenance, community, housing (accompanied), housing (unaccompanied), industrial, medical, open space, outdoor recreation, and water (see **Figure 2-3** in **Section 2.1.2**). Airfield and open space land uses compose more than 50 percent of the installation’s acreage.

Airfield facilities at Fairchild AFB include hangars, maintenance shops, the control tower, fire station crash/rescue facilities, the runway, and taxiway areas. Fairchild AFB has easements on privately owned land at the end of the runways in the CZs to deter incompatible uses. Industrial land use throughout the installation consists of a jet fuel tank farm, warehouses, civil engineering facilities, a kennel, vehicle operations, and an Ammunition Storage Area. There are numerous community service facilities on the installation including an elementary school, library, child care center, chapel, and professional development center, and medical complex on the western side of the installation. Open space portions of the installation are adjacent to the Air Education and Training Command (AETC) Survival School and ammunition storage facility complexes. Fairchild AFB also owns and operates a recreation area at Clear Lake, approximately 10 miles southwest of the installation.

Fairchild AFB's long-range objective for development is to establish areas on the installation that are compatible with surrounding land uses (FAFB 2010a). The land between the runway and Arnold Street is reserved primarily for aircraft operations and maintenance functions. The area between Arnold Street and Bong Street is planned for industrial operations. The land area between Bong Street and Castle Street is planned for administrative and housing (unaccompanied) land uses. The land between Castle Street and the northern boundary of the installation is planned for most of the community functions. No significant changes to the land uses on the south side of the installation are anticipated. There are no long-range plans for the areas surrounding Fairchild AFB that would impact zoning on land adjacent to the installation (Spokane County 2010b).

Land Use Controls. As a result of mission activities over the years, groundwater and soil at Fairchild AFB have been contaminated by a wide range of pollutants at varying contamination levels. These contaminated areas have land use controls (LUCs) due to the residual contamination left in place. Fairchild AFB maintains a *Land Use Controls Management Plan* (USAF 2007) to provide installation personnel and other entities involved in real estate management or project implementation with information on Fairchild AFB's LUC requirements and guidance for ensuring continued LUC compliance. LUCs include any type of physical, legal, or administrative mechanism (e.g., signage, easements, well drilling prohibitions, zoning restrictions, special permit requirements) that restricts the use of, or limits access to, real property to prevent or reduce risks to human health, safety, and the environment. The objective of the LUCs is to ensure that future land use remains compatible with the land use that was the basis for the evaluation, selection, and implementation of the response action.

Fairchild AFB has established LUCs at several sites as part of its ERP. The LUCs were established to prevent exposure to contaminated media, and they include restrictions controlling access to the ERP sites, restrictions against on-installation use of contaminated groundwater, and implementation of a dig permit system to limit access and exposure to contaminated soils and groundwater. Fairchild AFB Instruction 32-1001, *Work Clearance Request*, requires 92 CES signature on all digging permits. All projects that require ground disturbance of more than 6 inches below ground surface are subject to the Work Clearance Request process. In addition, the 92 CES has developed a comprehensive facilitywide approach for establishing, implementing, maintaining, enforcing, and monitoring LUCs at the installation, including a comprehensive permitting system and other installation policies and orders (USAF 2007).

Table 3-3 summarizes the current LUCs associated with the Proposed Action at Fairchild AFB.

Table 3-3. LUCs Associated with the Proposed Action at Fairchild AFB

Site	Contaminants Present	LUC Description	IDEA Projects
SS-26	BTEX in the groundwater and soil.	Prevent use of contaminated groundwater.	D4
SD-37	BTEX, TCE, and Carbon Tet in the groundwater and soil.	Prevent use of contaminated groundwater.	D4, D8, C6, I3
SS-39	TCE and Carbon Tet in the groundwater.	Prevent use of contaminated groundwater.	D2, D4, C4, C6, and I2
OT-15	Lead in the soil.	Prevent use of potentially contaminated soil.	NI1
RW-11	Radiological contamination in the groundwater and soil.	Prevent use of potentially contaminated groundwater and soil.	D1

Source: USAF 2007

Key: TCE = Trichloroethylene; BTEX = Benzene, Toluene, Ethylbenzene, and Xylene

Surrounding Off-Installation Land Use. Incorporated areas surrounding Fairchild AFB include Airway Heights, the City of Spokane, and Medical Lake. Unincorporated areas are under the jurisdiction of Spokane County. Airway Heights is approximately 1.5 miles east of Fairchild AFB. Land use throughout the southern half of Airway Heights, closest to the installation, includes residential, industrial, and open space. This area is subject to elevated noise levels from aircraft operations at Fairchild AFB. The remaining section of Airway Heights consists mainly of residential, tribal, commercial, public, and open space and is not significantly impacted by aircraft noise from Fairchild AFB. The City of Spokane is the largest city in Spokane County and is approximately 12 miles east of Fairchild AFB. Spokane is considered to be the regional economic and medical hub for the Inland Northwest and contains a mix of urban land uses. Aircraft operations from Fairchild AFB do not significantly impact the populations in the City of Spokane. Medical Lake is approximately 2.5 miles south of Fairchild AFB and consists mainly of residential, agricultural, open space, and public land uses. Most of the residential and commercial property is in the northeastern portion of the city, while the state institutions lie to the west and southwest. The noise analysis from the *Fairchild AFB Air Installation Compatible Use Zone Study, 2007* (FAFB 2007b) does not show elevated noise levels in Medical Lake as a result of aircraft operations at Fairchild AFB. However, land use and development issues within its jurisdiction are important due to the community's proximity to the installation and because development is expanding on the north side of the community towards the installation.

The majority of the unincorporated land to the north, southeast, and west of the installation consists mostly of agricultural uses; however, over time these areas have been subdivided into rural and suburban residential uses. Most residential parcels are composed of 3 to 20 acres. The main land use to the east of the installation is light industrial, which includes a gravel operation and warehouses. Less than 2 miles east of Fairchild AFB, Spokane International Airport owns a large parcel of land, much of which is in use by the airport (FAFB 2007b).

3.3 Air Quality

3.3.1 Definition of the Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

Ambient Air Quality Standards. Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM₁₀] and particulate matter equal to or less than 2.5 microns in diameter [PM_{2.5}]), and lead (Pb) (40 CFR § 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of Washington has adopted the NAAQS and promulgated additional State Ambient Air Quality Standards (SAAQS) for criteria pollutants. In some cases, the SAAQS are more stringent than the Federal primary standards. **Table 3-4** presents the NAAQS and SAAQS.

Table 3-4. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standard		Secondary Standard
		Federal	State	
CO	8-hour ^a	9 ppm (10 mg/m ³)	Same as Federal	None
	1-hour ^a	35 ppm (40 mg/m ³)	Same as Federal	None
Pb	Rolling 3-Month Average ^b	0.15 µg/m ³ ^c	Same as Federal	Same as Primary
	Quarterly Average	1.5 µg/m ³ ^c	Same as Federal	Same as Primary
NO ₂	Annual ^d	53 ppb ^e	50 ppb	Same as Primary
	1-hour ^f	100 ppb	None	None
PM ₁₀	Annual (Arithmetic Mean)	None	50 µg/m ³	None
	24-hour ^g	150 µg/m ³	Same as Federal	Same as Primary
PM _{2.5}	Annual ^h	15 µg/m ³	Same as Federal	Same as Primary
	24-hour ⁽⁶⁾	35 µg/m ³	Same as Federal	Same as Primary
O ₃	8-hour ⁱ	0.075 ppm ^j	Same as Federal	Same as Primary
	1-hour (Daily Maximum)	None	0.12 ppm (235 mg/m ³)	None
SO ₂	1-hour ^k	75 ppb ^l	0.40 ppm ^m	None
	1-hour ^k	None	0.25 ppm ⁿ	None
	Annual (Arithmetic Average)	0.03 ppm	0.02 ppm	None
	24-hour	0.14 ppm	0.10 ppm ^m	None
	3-hour ^a	None	Same as Federal	0.5 ppm (1300 µg/m ³)

Sources: USEPA 2011b, WDOE 2010b

Notes: Parenthetical values are approximate equivalent concentrations.

- Not to be exceeded more than once per year.
- Not to be exceeded.
- Final rule signed 15 October 2008. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. The USEPA designated areas for the new 2008 standard on 8 November 2011.
- Annual mean.
- The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
- 98th percentile, averaged over 3 years.
- Not to be exceeded more than once per year on average over 3 years.
- Annual mean, averaged over 3 years.
- Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
- Final rule signed 12 March 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, the USEPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
- 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
- Final rule signed 2 June 2010. The 1971 annual (0.3 ppm) and 24-hour (0.14 ppm) SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved. The USEPA expects to designate areas for the new 2010 standard by 2 June 2012.
- Not to be above this level more than once in a calendar year.
- Not to be above this level more than twice in a consecutive 7-day period.

Key: ppm = parts per million; ppb = parts per billion; mg/m³ = milligrams per cubic meter; µg/m³ = micrograms per cubic meter

Although O₃ is considered a criteria pollutant and is measureable in the atmosphere, it is not often considered a regulated pollutant when calculating emissions because O₃ is typically not emitted directly from most emissions sources. Ozone is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants or O₃ precursors. The O₃ precursors consist primarily of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies attempt to limit atmospheric O₃ concentrations by controlling NO_x and VOC pollutants.

Attainment Versus Nonattainment and General Conformity. The USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS, nonattainment indicates that criteria pollutant levels exceed NAAQS, maintenance indicates that an area was previously designated nonattainment but is now attainment, and an unclassified air quality designation by USEPA means that there is not enough information to classify an AQCR appropriately so the area is considered attainment. The USEPA has delegated the authority for ensuring compliance with the NAAQS in Washington to the State of Washington Department of Ecology, Air Quality Program. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule applies only to significant actions in nonattainment or maintenance areas. This rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

Federal Prevention of Significant Deterioration. Federal Prevention of Significant Deterioration (PSD) regulations apply in attainment areas to a major stationary source, (i.e., source with the potential to emit 250 tons per year [tpy] of any regulated pollutants), and a significant modification to a major stationary source, (i.e., change that adds 15 to 40 tpy to the facility’s potential to emit depending on the pollutant). Additional PSD major source and significant modification thresholds apply for greenhouse gases (GHGs). PSD permitting can also apply to a proposed project if all three of the following conditions exist: (1) the proposed project is a modification with a net emissions increase to an existing PSD major source, (2) the proposed project is within 10 kilometers of national parks or wilderness areas (i.e., Class I Areas), and (3) regulated stationary source pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 mg/m³ or more (40 CFR 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area’s baseline air contaminant concentrations, based on the area’s Class designation (40 CFR 52.21[c]).

Title V Requirements. Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A Title V major stationary source has the potential to emit criteria air pollutants and hazardous air pollutants (HAPs) at levels equal to or greater than Major Source Thresholds. Major Source Thresholds vary depending on the attainment status of an AQCR. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality. Section 112 of the CAA lists HAPs and identifies source categories.

Greenhouse Gas Emissions. GHGs are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from human activities include carbon dioxide (CO₂), methane, and nitrous oxide. GHGs are primarily produced by the burning of fossil fuels and through industrial and biological processes. On 22 September 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on CO₂ and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO₂ equivalent emissions per year but excludes mobile source emissions. The first emissions report was due in 2011 for 2010 emissions. The White House Council on Environmental Quality issued draft NEPA guidance in February 2010 regarding the inclusion of analysis of GHG emissions in NEPA documents. The guidance indicates 25,000 metric tons of direct CO₂-equivalent GHG emissions could provide a useful, presumptive, threshold for discussion and disclosure of GHG emissions. However, the guidance does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that could warrant some description in the appropriate NEPA analysis involving direct emissions of GHGs. GHG emissions are also factors in PSD and Title V permitting and reporting, according to a USEPA rulemaking issued on 3 June 2010 (75 FR 31514). GHG emissions thresholds of significance for permitting of stationary sources are 75,000 tons CO₂ equivalent per year and 100,000 tons CO₂ equivalent per year under these permit programs.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, was signed in October 2009 and requires agencies to set goals for reducing GHG emissions. One requirement within EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to identify, among other things, “agency activities, policies, plans, procedures, and practices” and “specific agency goals, a schedule, milestones, and approaches for achieving results, and quantifiable metrics” relevant to the implementation of EO 13514. On 26 August 2010, DOD released its SSPP to the public. This implementation plan describes specific actions the DOD will take to achieve its individual GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. All SSPPs segregate GHG emissions into three categories: Scope 1, Scope 2, and Scope 3 emissions. Scope 1 GHG emissions are those directly occurring from sources that are owned or controlled by the agency. Scope 2 emissions are indirect emissions generated in the production of electricity, heat, or steam purchased by the agency. Scope 3 emissions are other indirect GHG emissions that result from agency activities but from sources that are not owned or directly controlled by the agency. The GHG goals in the DOD SSPP include reducing Scope 1 and Scope 2 GHG emissions by 34 percent by 2020, relative to FY 2008 emissions, and reducing Scope 3 GHG emissions by 13.5 percent by 2020, relative to FY 2008 emissions.

3.3.2 Existing Conditions

Fairchild AFB is located in Spokane County, Washington, which is within the Eastern Washington-Northern Idaho Interstate (EWNII) AQCR 62. The EWNII AQCR also includes Adams, Asotin, Columbia, Garfield, Grant, Lincoln, and Whitman counties in Washington; and Benewah, Kootenai, Latah, Nez Perce, and Shoshone counties in Idaho (USEPA 2011b). Portions of Spokane County, which include the Spokane Urban Area as defined by the Washington Department of Transportation, are designated as maintenance areas for CO. Fairchild AFB is not within the Spokane Urban Area. Portions of Spokane County are designated as maintenance for PM₁₀; however, Fairchild AFB is west of this maintenance area. Fairchild AFB and the immediate surrounding area are in attainment for all criteria pollutants (SRCAA 2004). According to 40 CFR § 81, no Class I areas are within 10 kilometers of Fairchild AFB (USEPA 2002).

The most recent emissions for Spokane County and the EWNII AQCR are shown in **Table 3-5**. Spokane County is considered the local area of influence, and the EWNII AQCR is considered the regional area of influence for this air quality analysis. O₃ is not a direct emission; rather, it is generated from reactions of VOCs and NO_x, which are precursors to O₃. Therefore, for the purposes of this air quality analysis, VOCs and NO_x emissions are used to represent O₃ generation.

Table 3-5. Local and Regional Air Emissions Inventory (2008)

	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
Spokane County	12,309	14,222	95,679	277	11,086	2,306
Eastern Washington-Northern Idaho Interstate AQCR	36,373	38,050	258,845	4,912	70,573	10,862

Source: USEPA 2008

The Washington State Department of Ecology (WDE) regulates air quality for the State of Washington. The Spokane Regional Clean Air Agency (SRCAA) is the air pollution control authority for Spokane County.

Fairchild AFB is classified as a synthetic minor source with the SRCAA. There are various sources on-installation that emit criteria pollutants and HAPs, including emergency generators, boilers, hot water heaters, fuel storage tanks, gasoline service stations, surface coating, and miscellaneous chemical usage. As required by the SRCAA, Fairchild AFB calculates annual criteria pollutant emissions from stationary sources and provides this information to the SRCAA. **Table 3-6** summarizes the calendar year 2009 air emissions inventory for Fairchild AFB.

Table 3-6. Calendar Year 2009 Air Emissions Inventory for Fairchild AFB

	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO _x (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
2009 Actual Emissions	9.6	10.7	4.3	0.3	1.1	1.1

Source: FAFB 2010e

3.4 Geological Resources

3.4.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography, physiography, geology, soils, and, where applicable, geologic hazards and paleontology.

Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features.

Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types, in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential, affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Geologic hazards are defined as a natural geologic event that can endanger human lives and threaten property. Examples of geologic hazards include earthquakes, landslides, rock falls, ground subsidence, and avalanches.

3.4.2 Existing Conditions

Physiography and Topography. Fairchild AFB is in the Channeled Scablands area of the Columbia Basin physiographic province. The region is characterized by a varied topography of coulees, buttes, mesas, hanging valleys, and giant ripples caused by massive flooding in the Pleistocene (WDNR 2012). Thin layers of soil alternate with basalt outcroppings and areas of deeper soil throughout the region (FAFB 2010b). The topography of Fairchild AFB and its immediate surroundings is generally flat, with an average elevation of 2,430 feet above mean sea level (FAFB 2006c). The area is surrounded by mountains: the Selkirk Mountains and Okanogan Range are 130 miles north of the installation, the Bitterroot Range of the Rocky Mountains is 90 miles east of the installation, the Blue Mountains are 100 miles south of the installation, the Cascade Mountain Range is 180 miles west of the installation, and the Kettle River Range is 45 miles northwest of the installation (FAFB 2007a, FAFB 2010b).

Geology. The Columbia Basin was formed by Miocene-age flood basalts and altered by glacial floodwaters from Lake Missoula in the Pleistocene that widened the Spokane River Valley, deposited a thick stratum of gravel, and formed the Channeled Scablands topography. The Wanapum and Grande Ronde are the two mapped basalt units in the area, and are overlain with Quaternary-age unconsolidated gravel deposits and loess. Northwest of the installation is an area of dune sand (FAFB 2006c).

Soils. The NRCS has mapped nine soil types on Fairchild AFB in the 2006 update to the *1968 Soil Survey of Spokane County, Washington* (FAFB 2010b). **Table 3-7** presents the soils, their associated slopes, and their characteristics and **Figure 3-1** shows where these soils are located.

Of the soils mapped on the installation, the Caldwell silt loam, Cocolalla ashy silt loam, and portions of the Alecanyon-Cheney complex are rated as very limited for construction due to slope, flooding, depth to bedrock and to the saturated zone, and the presence of large stones (NRCS 2011).

Geologic Hazards. Fairchild AFB is at moderate risk from geologic hazards such as volcanism and earthquakes. The U.S. Geological Survey (USGS) produced seismic hazard maps based on current information about the frequency and intensity of earthquakes. The maps show the levels of horizontal shaking that have a 2 in 100 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of the force of gravity (percent g) and is proportional to the hazard faced by a particular type of building. In general, little or no damage is expected at values less than 10 percent g, moderate damage could occur at 10 to 20 percent g, and major damage could occur at values greater than 20 percent g. The 2008 National Seismic Hazard map produced by the USGS shows that Fairchild AFB has a seismic hazard rating of approximately 10 to 12 percent (USGS 2012).

Table 3-7. Soils Mapped on Fairchild AFB

Mapping Unit	Slope (%)	Characteristics
Alecanyon-Cheney complex	0 to 8	The Alecanyon series consists of very deep, somewhat excessively drained soils that are moderately to rapidly permeable.
Caldwell silt loam	0 to 3	The Caldwell series of soils are very deep, poorly drained soils that are moderately permeable.
Cheney-Alecanyon complex	0 to 8	The Cheney series consists of very deep, well-drained soils that are moderately permeable.
Cheney-Uhlig complex	0 to 8	
Cocolalla ashy silt loam	0 to 3	The Cocolalla ashy silt loam consists of very deep, poorly drained, moderately permeable soils.
Phoebe-Bong complex	0 to 8	The Bong series consists of very deep, somewhat excessively drained soils of moderate permeability.
Rockly-Deno complex	0 to 8	The Rockly series consists of very shallow, well-drained soils of moderate permeability. The Deno series of soils consists of deep, well-drained, moderately permeable soils.
Saltese Muck	0 to 3	The Saltese muck series consists of very deep, very poorly drained soils of moderate permeability, and is a hydric soil.
Uhlig ashy silt loam	0 to 8	The Uhlig series consists of very deep, well-drained, moderately permeable soils.

Sources: FAFB 2007c, FAFB 2010b

3.5 Water Resources

3.5.1 Definition of the Resource

Water resources are natural and man-made sources of water that are available for use by and for the benefit of humans and the environment. Water resources relevant to Fairchild AFB in Washington include groundwater, surface water, wetlands, and waters of the United States. Hydrology concerns the distribution of water through the processes of evapotranspiration, atmospheric transport, precipitation, surface runoff and flow, and subsurface flow. Hydrology is affected by climatic factors such as temperature, wind direction and speed, topography, soil, and geologic properties.

Groundwater. Groundwater is water that exists in the saturated zone beneath the earth's surface and includes underground streams and aquifers. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater features include depth from the surface, aquifer or well capacity, quality, recharge rate, and surrounding geologic formations.

Groundwater quality and quantity are regulated under several different programs. The Federal Underground Injection Control regulations, authorized under the Safe Drinking Water Act (SDWA), require a permit for the discharge or disposal of fluids into a well. The Federal Sole Source Aquifer regulations, also authorized under the SDWA, protect aquifers that are critical to water supply.

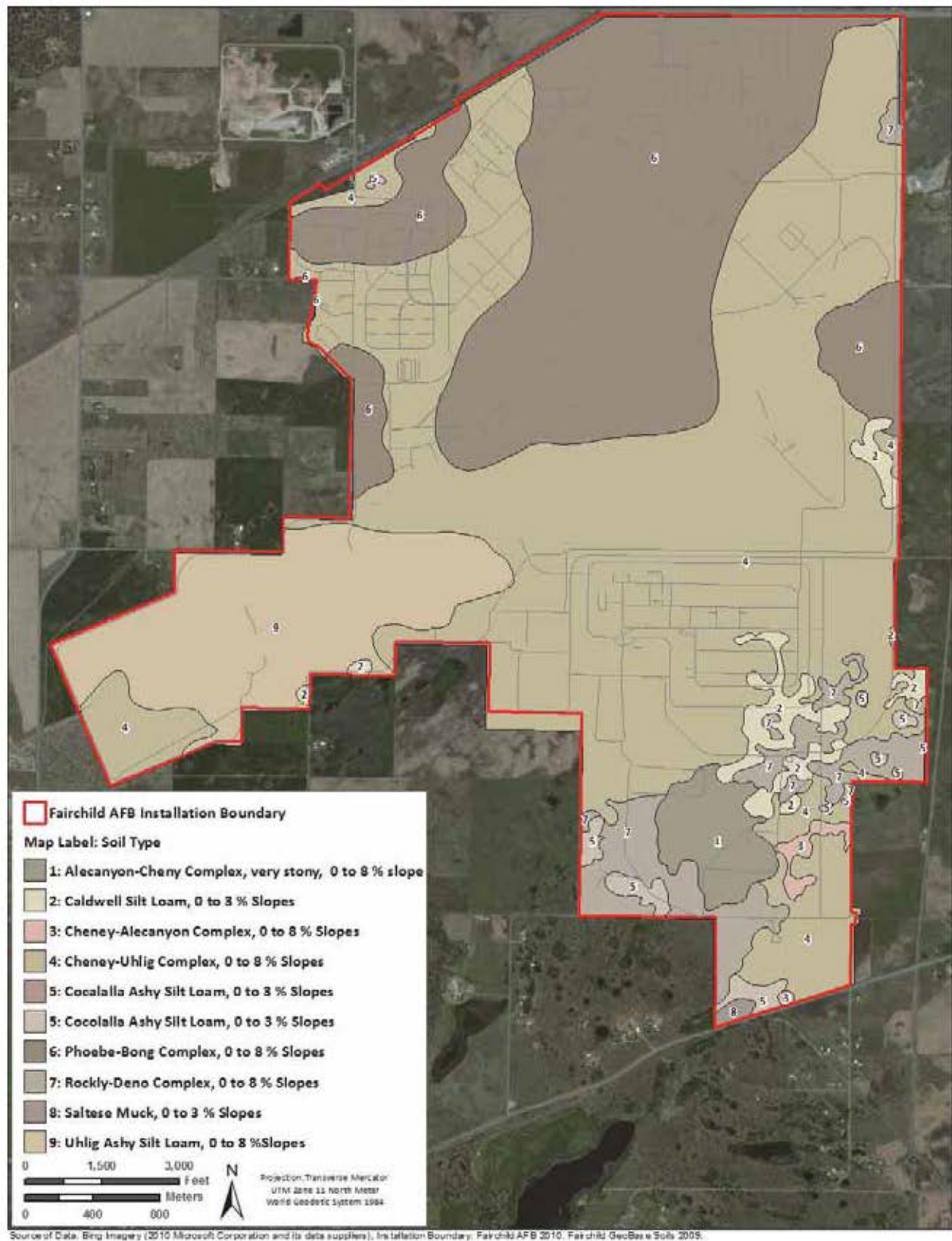


Figure 3-1. Soils Mapped on Fairchild AFB

Surface Water. Surface water resources generally consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Waters of the United States are defined within the Clean Water Act (CWA), as amended, and jurisdiction is addressed by the USEPA and the USACE. Encroachment into waters of the United States requires a permit from the state and the Federal government.

The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA establishes Federal limits, through the National Pollutant Discharge Elimination System (NPDES) program, for the allowable amounts of specific pollutants that can be discharged to surface waters to restore and maintain the chemical, physical, and biological integrity of the water. A water body can be deemed impaired if water quality analyses conclude that exceedances of CWA water quality standards occur.

The NPDES program is regulated by the USEPA. All new construction sites must adhere to the requirements of the applicable NPDES storm water permit, which generally includes the following:

- Control storm water volume and velocity to minimize erosion
- Minimize the amount of soil exposed during construction activities
- Minimize the disturbance of steep slopes
- Minimize sediment discharges from the site
- Provide and maintain natural buffers around surface waters
- Minimize soil compaction and preserve topsoil where feasible.

In addition, construction site owners and operators that disturb 1 or more acres of land are required to use best management practices (BMPs) to ensure that soil disturbed during construction activities does not pollute nearby water bodies. Construction activities disturbing 20 or more acres must comply with the numeric effluent limitation for turbidity in addition to the non-numeric effluent limitations. Additionally, on 2 February 2014, construction site owners and operators that disturb 10 or more acres of land are required to monitor discharges to ensure compliance with effluent limitations as specified by the permitting authority.

Under Section 438 of the EISA, Federal agencies have requirements to reduce storm water runoff from Federal development and redevelopment projects to protect water resources. Federal agencies can comply using a variety of storm water management practices often referred to as "green infrastructure" or "low-impact development" practices, including, for example, reducing impervious surfaces, using vegetative practices, porous pavements, cisterns, and green roofs to maintain or restore predevelopment site hydrology to the maximum extent technically feasible.

Wetlands. Wetlands are identified as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The USACE regulates the discharge of dredged or fill material into waters and wetlands of the United States pursuant to Section 404 of the CWA. Section 401 of the CWA requires that any applicant for a Federal license or permit to conduct an activity that could result in a discharge into waters of the United States provide the permitting agency a certification from the state in which the discharge originates certifying that the license or permit complies with CWA requirements, including applicable state water quality standards.

It is USAF policy to avoid construction of new facilities within areas containing wetlands (AFI 32-7064, *Integrated Natural Resources Management* and EO 11990), where practicable. However, some projects might have minimal, direct impacts on wetland areas, and there is potential for indirect impacts from development and excavation in areas adjacent to these areas. In accordance with EO 11990, a FONPA must be prepared and approved by HQ AMC for all projects involving construction activities in wetland areas.

3.5.2 Existing Conditions

Groundwater. Fairchild AFB is underlain by alluvial sediments and two layers of basalt associated with the regional Columbia River Basalt Group. The uppermost basalt is referred to as Basalt A, and the deeper basalt sequence is referred to as Basalt B. The top portion of Basalt A is fractured and highly weathered in places, while the center is more massive and fine-grained with infrequent fractures and low permeability. Basalt B is porous and vesicular¹ at the top and progressively denser with depth (AFCEE 2000).

The uppermost groundwater in the area is typically encountered from 3 to 12 feet below ground surface in alluvium or in the fractured and weathered uppermost portion of Basalt A. Groundwater flows generally from west to east across the installation. In some locations, a high degree of hydraulic conductivity exists between the alluvium and shallow basalt water-bearing zones. In other areas, the shallow alluvium and basalt bedrock water-bearing zones are separated by a low-permeability clay layer. Groundwater flow within Basalt A occurs predominantly where the number of interconnected fractures is highest in the upper and lower portions of the formation. Vertical groundwater movement through Basalt A is typically slow because of the tightness of fractures within the center of the basalt formation (AFCEE 2000).

Fairchild AFB receives almost all of its water from wells at the Fort George Wright Annex. However, a seasonal well at the extreme southeastern corner of the installation pumps water to the water distribution grid. This well is used only when water demands cannot be met from the Fort George Wright Annex wells (FAFB 2009a). All wells are monitored closely for possible contamination. According to the Spokane County Department of Building and Planning (SCDBP), Fairchild AFB is in an area of moderate to high susceptibility for aquifer contamination (SCDBP 2012).

Surface Water. The topography of the main installation of Fairchild AFB is nearly flat and positioned on a subtle topographic divide that defines the boundary of three watersheds. These watersheds are Lower Spokane, Hangman, and Palouse watersheds (WDOE 2012). Surface hydrology on Fairchild AFB can generally be described as isolated from free-flowing surface waters within these watersheds. **Figure 3-2** shows the surface water features on the installation. Surface water features are wetlands with seasonal or persistent ponding and storm water catchments or conveyances.

Fairchild AFB is divided into eight drainage basins correlating to the NPDES Storm Water Multi-Sector General Permit (No. WAR05B94F): Basin 1 is the largest basin, drains approximately one-third of Fairchild AFB and contains the most industrial activities; Basin 2 is for military housing and contains no industrial operations; Basin 3 contains Civil Engineering shops, petroleum, oil, and lubricants (POL) bulk storage, and miscellaneous light industrial operations; Basin 4 contains an inactive landfill and no industrial operations; Basins 5 contains portions of the WANG Complex and SERE facilities; Basin 6 contains the ammunition storage facilities; Basin 7 contains other SERE facilities; and Basin 8 contains an explosive ordnance range (FAFB 2008a).

¹ Refers to volcanic rock texture characterized by cavities (known as vesicles) formed during the extrusion of magma to the surface.

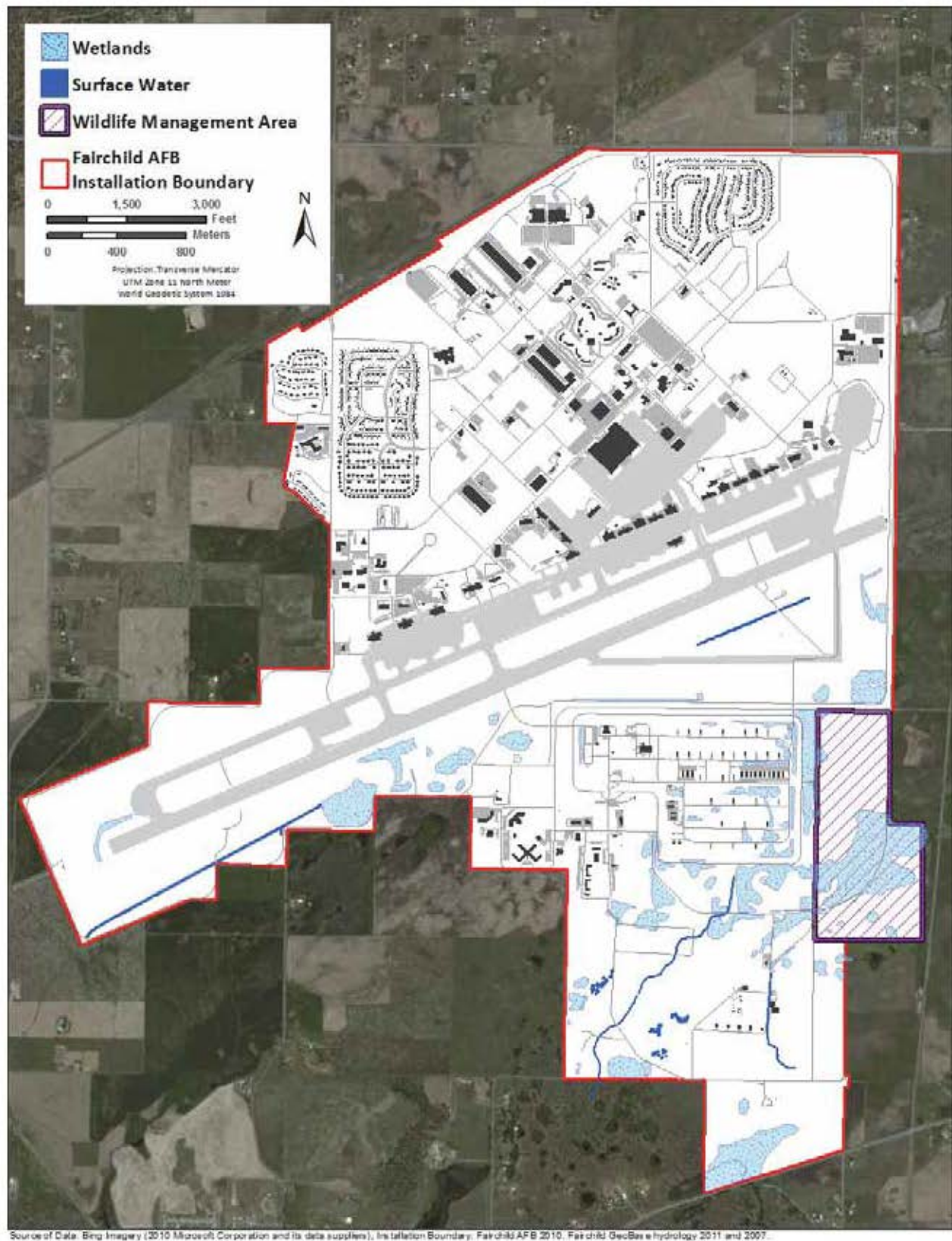


Figure 3-2. Location of Surface Waters on Fairchild AFB

The storm drainage system is composed of storm water collection catch basins, drywells, collection piping, lagoons, ditches, and other above- and below-grade storm water conveyances. The majority of runoff at Fairchild AFB infiltrates the ground or drains to a drainage pond. Since the majority of precipitation infiltrates or evaporates in localized topographic depressions, a significant portion of Fairchild AFB generates little storm water runoff. Shallow soils, perched water tables, and nearly flat topography create a challenge for surface storm water management during high precipitation months (FAFB 2009a). Storm water is managed both by surface and belowground conveyances. Belowground conveyances discharge to a containment/settling pond where suspended sediments settle out and waters are discharged into a ditch that runs off the installation to an agricultural field.

Wetlands. Wetlands occur in the southern portion of Fairchild AFB as a result of the shallow, perched water table (see **Figure 3-2**). These wetlands are not hydrologically connected to free-flowing waters. Some wetlands have resulted from storm water runoff and catchment by roads, while other wetlands are natural and in varying ecological conditions. Fairchild AFB contains approximately 119 acres of wetlands of various levels of quality. All wetlands on Fairchild AFB are under the Washington Department of Ecology (WDOE) jurisdiction and are defined per USACE as isolated. Most of the wetlands on Fairchild AFB have undergone some degree of hydrologic alteration due to road and utility construction, compaction, or tillage from past agricultural uses; and ditching, which altered the plant community within these wetlands. The highest-valued wetlands are the forested wetlands at Clear Lake, the riparian zone at Water Well Annex 1, and the large palustrine scrub-shrub wetland along the southern boundary of the installation. All of the wetlands within Fairchild AFB are isolated depressions (both natural and constructed), constructed drainage ditches, or vernal pools, with the possible exception of the wetland complex in the southwestern corner of the installation. This wetland complex is part of a well-defined drainage corridor and associated wetlands complex extending northward from Silver Lake. Although isolated, the depressional wetlands that are in good condition have local significance to groundwater regulation and wildlife habitat.

Although most wetlands are considered a category III² or IV, one wetland on Fairchild AFB is classified as category II (Dw-17) and two wetlands are classified as category I (Dw-18 and Dw-56). Category I and II wetlands are more valuable and therefore require higher levels of protection (FAFB 2009a). Wetlands in operational areas of the installation used for storm water drainage tended to rank higher in water quality and hydrologic functions and low in habitat functions. Wetlands in less disturbed areas tend to rank higher in habitat function and lower in water quality and hydrologic functions. Conservation and higher value depressional wetlands on Fairchild AFB generally include the vernal pool and adjacent areas (west/southwest), the extreme southwestern corner (Dw-56 Complex), and the current wildlife viewing area wetlands/upland complex (FAFB 2006a).

A wetland assessment was conducted in the Ammunition Storage Area in May 2011. Two wetlands were identified and classified as category III. Wetland classification ratings were determined using the State of Washington Wetland Rating Classification for Eastern Washington. Wetlands scores resulted in high values for water quality function and low functional value for wildlife habitat and hydrology. The two wetlands are connected by a road culvert. Hydrology appears to originate from groundwater and seasonal precipitation (INR 2011).

² The wetland rating system classifies wetlands into Categories I, II, III, and IV. Category I wetlands (1) represent a unique or rare wetland type, (2) are more sensitive to disturbance than most wetlands, (3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime, or (4) provide a high level of functions. Category II wetlands are difficult, but not impossible, to replace, and provide high levels of some functions. Category III wetlands are (1) wetlands with a moderate level of functions and (2) interdunal wetlands between 0.1 and 1 acre in size. Category IV wetlands have the lowest levels of functions and are often heavily disturbed (WDOE 2006).

3.6 Biological Resources

3.6.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., grasslands, forests, and wetlands) in which they exist. Protected and sensitive biological resources include ESA-listed species (threatened or endangered) and those proposed for ESA-listing as designated by the USFWS (terrestrial and freshwater organisms) and National Marine Fisheries Service (NMFS) (marine organisms), and migratory birds. Migratory birds are also protected species under the MBTA. Sensitive habitats include those areas designated by the USFWS (or NMFS) as critical habitat protected by the ESA and as sensitive ecological areas designated by state or other Federal rulings. Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act. Sensitive habitats also include wetlands, plant communities that are unusual or limited in distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

The ESA (16 U.S.C. §1531 et seq.) establishes a Federal program to protect and recover imperiled species and the ecosystems upon which they depend. The ESA requires Federal agencies, in consultation with the USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The Washington Department of Fish and Wildlife (WDFW) oversees the protection and management of state-protected animal species under the Washington Endangered, Threatened, and Sensitive Wildlife Species Classification Rule (WAC 232-12-297). The WDFW maintains the state list of animal species designated as endangered, threatened, and sensitive. The Washington Department of Natural Resources (WDNR) oversees the protection and management of state-protected plant species under the Washington Natural Heritage Program (WNHP). The WNHP was established in 1981 when the Washington Legislature amended the Natural Area Preserves Act (Chapter 79.70 RCW).

Pursuant to Section 303(a)(7) of the Magnuson-Stevens Fisheries Conservation and Management Act (16 U.S.C. 1801 et seq.), regional fishery management councils must identify essential fish habitat (EFH) used by all life history stages of each managed species in fishery management plans. EFH that is particularly important to the long-term productivity of populations of one or more managed species, or is particularly vulnerable to degradation, is identified as habitat areas of particular concern to provide additional focus for conservation efforts. Pursuant to Section 305(b)(2) of the Magnuson-Stevens Fisheries Conservation and Management Act, Federal agencies shall consult with the NMFS regarding any action federally authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that might adversely affect EFH.

3.6.2 Existing Conditions

Vegetation. Fairchild AFB is within the Walla Walla Plateau Section of the Columbia Plateau Physiographic Province where grassland or shrub-steppe vegetation grades into ponderosa pine forest (USGS 2010). The development of the installation has led to the replacement of the historic native vegetative cover with nonnative plants (FAFB 2009a). Plant communities consist of Idaho fescue (*Festuca idahoensis*)/bluebunch wheatgrass (*Agropyron spicatum*) on Cheney soils in upland positions; oatgrass/Sandberg bluegrass (*Poa secunda*) on unnamed shallow soils; and ponderosa pine (*Pinus ponderosa*)/snowberry (*Symphoricarpos spp.*) on upland positions near rock outcrops, wetlands, and wetland plant communities (FAFB 2010b). Dominant vegetation in most wetlands consists of reed canary grass (*Phalaris arundinacea*) and other nonnative weed species. About 60 percent of the wetlands are in fair to poor condition, and are emergent wetlands. Other better condition wetlands support bulrush (*Scirpus spp.*) and rush spp. (*Juncus spp.*), some cattail (*Typha latifolia*), open water, and wetland shrubs.

Developed areas on Fairchild AFB are mostly found in the northern portion of the installation. Approximately 700 acres in the northeastern corner and southern portion of the installation are primarily composed of undeveloped areas, open grass fields, wetlands, Russian olive thicket (*Eleagnus angustifolia*), and ponderosa pine stands, along with areas of mixed native and nonnative grasses, weeds, and shrubs. Undeveloped areas provide habitat suitable for wildlife such as hawks, owls, deer, songbirds, waterfowl, and upland birds. Scattered portions of the installation and outlying tracts support remnants, albeit altered occurrences, of natural vegetation. Native bunchgrass communities appear in mowed and unmowed condition.

An area in the southwestern portion of the installation supports a community of Spalding's catchfly (*Silene spaldingii*), a federally and state-listed threatened species (see **Figure 2-2**). The Wildlife Management Area, to the southeast of the installation, supports a large wetland vegetation community of Russian olive shrub (*Elaeagnus angustifolia*), which is an invasive species.

The current list of noxious weeds on Fairchild AFB includes common bugloss (*Anchusa officinalis*), kochia (*Kochia scoparia*), sulphur cinquefoil (*Potentilla recta*), Russian thistle (*Salsola kali*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), bull thistle (*Cirsium vulgare*), wavyleaf thistle (*Cirsium undulatum*), sow thistle (*Sonchus arvensis*), dalmation toadflax (*Linaria dalmatica*), rush skeletonweed (*Chondrilla juncea*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea stoebe*), meadow knapweed (*Centaurea pratensis*), and common St. John's wort (*Hypericum perforatum*) (FAFB 2010b, FAFB 2011). The presence of these weeds constitutes a threat to native plant associations and their relative value as habitat and specifically to the population of Spalding's catchfly, a federally listed threatened and state-listed endangered species.

Wildlife. Much of the undeveloped natural habitat on Fairchild AFB occurs in the southern portion of the installation. These natural habitats contain a mixture of disturbed and semi-native wetlands, open grass and shrub land, and two small patches of ponderosa pine woodland. Wetland complexes and vernal pools in the southern portion of the installation contain habitat suitable for waterfowl, upland game birds, and a variety of songbirds and small mammals. The northern portion of the installation is developed and contains habitats and species typical of urban areas (FAFB 2009a).

Mule deer, white-tailed deer, coyote, badger, white-tailed jackrabbit, gopher, garter snakes, red-tailed hawk, northern harrier, burrowing owl, great horned owl, ring-necked pheasant, and several species of waterfowl are likely to occur in the southern portion of the installation. In addition, small mammals that were captured in the southeastern portion of Fairchild AFB as part of the Biological Resource Inventory conducted in 2005 include montane vole (*Microtus montanus*), meadow vole (*Microtus pennsylvanicus*), vole (*Microtus sp.*), ermine (*Mustela ermine*), deer mouse (*Peromyscus maniculatus*), Great Basin pocket mouse (*Perognathus parvus*), western harvest mouse (*Reithrodontomys megalotis*), and vagrant shrew (*Sorex vagrans*).

During the fall, several types of migratory birds use the Russian olive shrub community located in the southeastern portion of Fairchild AFB. Some of these birds are neotropical migrant birds (i.e., birds that travel south during winter) such as Wilson's warbler (*Wilsonia pusilla*), solitary vireo (*Vireo spp.*), orange-crowned warbler (*Vermivora celata*), and golden-crowned kinglet (*Regulus satrapa*) (FAFB 2010b).

Wildlife species and habitat present in the installation housing area are typical of urban areas, with no large mammals, few small mammals (mostly deer mice, voles, and moles), and bird communities dominated by fruit-eating or omnivorous species, such as American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*), cedar waxwing (*Bombycilla cedrorum*), and purple finch (*Carpodacus purpureus*). Similar wildlife habitat and species are likely to be present within the installation facilities (FAFB 2010b).

The airfield contains grassland areas that can provide potentially suitable habitat for birds such as the grasshopper sparrow (*Ammodramus savannarum*) and savannah sparrow (*Passerculus sandwichensis*). Other bird species with potential to cross the airfield include the song sparrow (*Melospiza melodia*), brown-headed cowbird (*Molothrus ater*), American goldfinch (*Carduelis tristis*), killdeer (*Charadrius vociferous*), rock dove (*Calumba livia*), mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), turkey vulture (*Cathartes aura*), several species of gulls (*Larus spp.*), and several species of raptors (e.g., red-tailed hawk [*Buteo jamaicensis*], Swainson's hawk [*Buteo swainsoni*], rough-legged hawk [*Buteo lagopus*], northern harrier [*Circus cyaneus*], American kestrel [*Falco sparverius*], prairie falcon [*Falco mexicanus*], burrowing owl [*Athene cunicularia*], short-eared owl [*Asio flammeus*], and great-horned owl [*Bubo virginianus*]) (FAFB 2009b).

Bird species that might breed locally within the marshy and stream areas on the airfield include the northern rough-winged swallow (*Stelgidopteryx serripennis*), willow flycatcher (*Empidonax traillii*), western kingbird (*Tyrannus verticalis*), cedar waxwing (*Bombycilla cedrorum*), common yellowthroat (*Geothlypis trichas*), and red-winged blackbird (*Agelaius phoeniceus*). This region is an important breeding and resting ground for migrating waterfowl. Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), northern pintail (*Anas acuta*), green-winged teal (*Anas crecca*), and ruddy ducks (*Oxyura jamaicensis*) are known to enter Fairchild AFB's runway area (FAFB 2009b).

Mammals observed in the airfield include the coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), American badger (*Taxidea taxus*), Nuttall's cottontail (*Sylvilagus nuttallii*), and yellow-bellied marmot (*Marmota flaviventris*). Other species include the raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), white-tailed jackrabbit (*Lepus townsendii*), Washington ground squirrel (*Urocitellus washingtoni*), golden-mantled ground squirrel (*Spermophilus lateralis*), Columbian ground squirrel (*Spermophilus columbianus*), northern pocket gopher (*Thomomys talpoides*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), long-tailed vole (*Microtus longicaudus*), montane vole (*Microtus montanus*), and meadow vole (*Microtus pennsylvanicus*). The vagrant shrew (*Sorex vagrans*) has been observed on Fairchild AFB and might occur within the marshy areas of the installation (FAFB 2009b).

Airfield grassland areas provide suitable habitat for herptiles such as the long-toed salamander (*Ambystoma macrodactylum columbianum*), blotched tiger salamander (*Ambystoma tigrinum melanostictum*), Great Basin spadefoot toad (*Scaphiopus intermontanus*), the state candidate and Federal species of concern western toad (*Anaxyrus boreas*), pacific treefrog (*Hyla regilla*), the state endangered and Federal species of concern northern leopard frog (*Rana pipiens*), short-horned lizard (*Phrynosoma douglasii*), Skilton skink (*Eumeces skiltonianus skiltonianus*), northwestern alligator lizard (*Gerrhonotus coeruleus principis*), northern rubber boa (*Charina bottae*), western yellow-bellied racer (*Coluber constrictor mormon*), Great Basin gopher snake (*Pituophis melanoleucus deserticola*), valley garter snake (*Thamnophis sirtalis fitchi*), wandering garter snake (*Thamnophis elegans vagrans*), and northern Pacific rattlesnake (*Crotalus oreganus*). In marshy and stream areas and deepwater marshes and ponds, herptiles such as the western painted turtle (*Chrysemys picta belli*), bullfrog (*Rana catesbeiana*), and the state candidate and Federal species of concern Columbia spotted frog (*Rana luteiventris*) can be found (FAFB 2010b).

The Open Space/Sportsmen's Club is an open field in the northeast corner of the installation that is likely used by some wildlife associated with pasture and other open agricultural uses including brown-headed cowbird, European starling, Brewer's blackbird, voles (*Microtus spp.*), mice, red-tailed hawks (*Buteo jamaicensis*), kestrels (*Falco spp.*), and northern harriers (*Circus cyaneus*). During winter, rough-legged hawks hunt in this area as well. The storage area, south of the airfield, is completely developed and devoid of wildlife habitat (FAFB 2010b).

Fairchild AFB maintains an installationwide pest management plan to monitor and control pests on-installation such as flies, fleas, ticks, termites, carpenter bees, ants, spiders, bees, wasps, mice, ground squirrels, moles, and voles (FAFB 2011).

Protected and Sensitive Species. Developed portions of the installation are not expected to provide suitable habitat for Federal- or state-listed threatened or endangered species. The Nature Conservancy conducted a survey for threatened and endangered species at Fairchild AFB in 1993 and 1994. The WNHP reconfirmed the survey in 1999.

Table 3-8 lists Federal- and state-listed and sensitive species occurring on Fairchild AFB. There are three amphibian species identified to occur potentially on the installation: northern leopard frog, Columbia spotted frog, and western toad. Additionally, three bird species and one mammal species have been observed at Fairchild AFB or on one of its landholdings. The bald eagle (*Haliaeetus leucocephalus*), although no longer federally listed, remains protected under the Bald and Golden Eagle Protection Act. This species is known to nest throughout Washington, and has been observed at Clear Lake Recreation Area, southwest of the installation. The golden eagle (*Aquila chrysaetos*), a state candidate species, has been observed on the installation. Habitat generally consists of open wooded country and barren areas, especially in hilly or mountainous regions. Nests are found on the rock ledge of cliffs or in large trees. Burrowing owl, a Federal species of concern and state candidate species, has been historically observed foraging and nesting on the airfield (FAFB 2010b). Habitat of the burrowing owl usually consists of open grassland, prairies, and airfields.

The white-tailed jackrabbit, a state candidate species, has been observed on the installation. This species is associated with sagebrush-grassland areas. Washington ground squirrel, a Federal and state ESA candidate species, has not been observed on Fairchild AFB. However, surveys conducted in 2005 determined that suitable habitat on installation exists for the Washington ground squirrel (FAFB 2010b). Washington ground squirrels live in sagebrush-bunchgrass habitats.

Spalding's catchfly and water howellia are federally and state-listed as threatened species; Spalding's catchfly is known to occur on Fairchild AFB and water howellia is known to occur in Spokane County. Spalding's catchfly and its associated habitat are protected on Fairchild AFB. Inch-high rush and mousetail (*Myosurus clavicaulis*) are listed as sensitive, whereas American pillwort (*Pilularia Americana*) and northwestern yellowflax (*Sclerolinon digynum*) are listed as threatened by WDFW. These four species are associated with vernal pools on Fairchild AFB (FAFB 2010b). Vernal pools are located in the southwestern portion of Fairchild AFB, adjacent to the AETC Survival School Area.

3.7 Cultural Resources

3.7.1 Definition of the Resource

Cultural resources is an umbrella term for many heritage-related resources, including prehistoric and historic sites, buildings, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on the condition and historic use, such resources might provide insight into the cultural practices of previous civilizations or they might retain cultural and religious significance to modern groups.

Table 3-8. Sensitive Species Occurring on or in the Vicinity of Fairchild AFB

Common Name	Scientific Name	Federal Status	State Status
Birds			
American white pelican	<i>Pelicanus erythrorhynchus</i>	None	E
Bald eagle*	<i>Haliaeetus leucocephalus</i>	None	S
Black-backed woodpecker	<i>Picoides arcticus</i>	None	C
Burrowing owl*	<i>Athene cunicularia</i>	SOC	C
Common loon	<i>Gavia immer</i>	None	S
Ferruginous hawk	<i>Buteo regalis</i>	SOC	T
Flammulated owl	<i>Otus flammeolus</i>	None	C
Golden eagle*	<i>Aquila chrysaetos</i>	None	C
Lewis' woodpecker	<i>Melanerpes lewis</i>	None	C
Loggerhead shrike	<i>Lanius ludovicianus</i>	SOC	C
Northern goshawk	<i>Accipiter gentilis</i>	SOC	C
Peregrine falcon	<i>Falco peregrinus</i>	SOC	S
Pileated woodpecker	<i>Drycopus pileatus</i>	None	C
Sage sparrow	<i>Amphispiza belli</i>	None	C
Sage thrasher	<i>Oreoscoptes monamus</i>	None	C
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	SOC	T
Upland sandpiper	<i>Bartramia longicauda</i>	None	E
Vaux's swift	<i>Chaetura vauxi</i>	None	C
Western grebe	<i>Aechmophorus occidentalis</i>	None	C
Mammals			
Black-tailed jackrabbit	<i>Lepus californicus</i>	None	C
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SOC	C
Washington ground squirrel	<i>Uroditellus washingtoni</i>	C	C
White-tailed jackrabbit	<i>Lepus townsendii</i>	None	C
Amphibians			
Columbia spotted frog	<i>Rana luteiventris</i>	SOC	C
Northern leopard frog	<i>Rana pipiens</i>	SOC	E
Western toad	<i>Anaxyrus boreas</i>	SOC	C
Invertebrates			
California floater	<i>Anodonta californiensis</i>	SOC	C
Juniper hairstreak	<i>Mitoura grynea barryi</i>	None	C
Mann's mollusk-eating ground beetle	<i>Scaphinotus mannii</i>	None	C
Shepard's parnassian	<i>Parnassius clodius shepardii</i>	None	C
Silver-bordered fritillary	<i>Boloria selene atrocatalis</i>	None	C

Common Name	Scientific Name	Federal Status	State Status
Plants			
American pillwort*	<i>Pilularia americana</i>	None	T
Austin's knotweed	<i>Polygonum austiniiae</i>	None	T
Black snake-root	<i>Sanicula marilandica</i>	None	S
Bristly sedge	<i>Carex comosa</i>	None	S
Canadian St. John's-wort	<i>Hypericum majus</i>	None	S
Dwarf rush	<i>Juncus hemiendytus var. hemiandytus</i>	None	T
Grand redstem	<i>Ammannia robusta</i>	None	T
Gray stickseed	<i>Hackelia cinerea</i>	None	S
Green keeled cotton-grass	<i>Eriophorum viridicarinatum</i>	None	S
Idaho gooseberry	<i>Ribes oxycanthoides ssp. irriguum</i>	None	S
Inch-high rush*	<i>Juncus uncialis</i>	None	S
Kidney-leaved violet	<i>Viola renifolia</i>	None	S
Lowland toothcup	<i>Rotala ramosior</i>	None	T
Marsh muhly	<i>Muhlenbergia glomerata</i>	None	S
Mousetail*	<i>Myosurus clavicaulis</i>	None	S
Northwestern yellowflax*	<i>Sclerolinon digynum</i>	None	T
Nuttall's pussy-toes	<i>Antennaria parvifolia</i>	None	S
Palouse goldenweed	<i>Pyrrocoma liatriformis</i>	SOC	T
Prairie cordgrass	<i>Spartina pectinata</i>	None	S
Rocky Mountain bulrush	<i>Schoenoplectus saximontanus</i>	None	T
Spalding's catchfly*	<i>Silene spaldingii</i>	T	T
Water howellia	<i>Howellia aquatilis</i>	T	T
Wilcox's penstemon	<i>Penstemon wilcoxii</i>	None	S
Yellow lady's-slipper	<i>Cypripedium parviflorum</i>	None	T

Sources: FAFB 2010b, USFWS 2010, WDFW 2012

Note: * Species observed on Fairchild AFB.

Key: E = Endangered; T = Threatened; C = Candidate; S = Sensitive; SOC = Species of Concern.

Typically, cultural resources are subdivided into archaeological resources (prehistoric or historic sites, where human activity has left physical evidence of that activity but no structures remain standing); architectural resources (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); or resources of traditional, religious, or cultural significance to Native American tribes. Archaeological resources comprise areas where human activity has measurably altered the earth, or deposits of physical remains are found (e.g., projectile points and bottles). Architectural resources include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to be considered eligible for the NRHP. More recent structures, such as Cold War-era resources, might warrant protection if they are of exceptional significance or if they have the potential to gain significance in the future. Resources of traditional, religious, or cultural significance to Native American tribes can include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants,

animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture.

Several Federal laws and regulations govern protection of cultural resources, including the NHPA of 1966, the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (NAGPRA) (1990). The EA process and the consultation process prescribed in Section 106 of the NHPA require an assessment of the potential effects of an undertaking on historic properties that are within the proposed project's Area of Potential Effect (APE), which is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Under Section 110 of the NHPA, Federal agencies are required to inventory resources under their purview and nominate those eligible to the NRHP. In accordance with the NHPA, consultation with the SHPO is required regarding determination of potential effects of an undertaking on historic properties.

Federally recognized Native American tribes that are affiliated with Fairchild AFB are consulted with in accordance with EO 13175 to develop ongoing positive relationships on a government-to-government basis. Fairchild AFB also conducts project specific consultation with federally recognized tribes as required by the NHPA, NEPA, and other authorities.

3.7.2 Existing Conditions

Archaeological resources at Fairchild AFB and the surrounding areas include sites associated with the area's prehistoric and historic Native American populations, including the Interior Salish speakers who are now known as the Spokane and Coeur D'Alene Indian Tribes. The southern portions of the installation have been surveyed for archaeological resources; the remainder of the installation is considered too disturbed by 20th century development to preserve intact archaeological sites (FAFB 2005a). The main portion of Fairchild AFB has been surveyed for historic buildings (FAFB 2005a, FAFB 2008b), although there are a large number of buildings that will reach 50 years of age by the year 2018 or that are less than 50 years old but could qualify for NRHP eligibility under criterion G. These buildings are included in the analysis presented in this IDEA.

Archaeological Resources. Fairchild AFB has been completely surveyed for archaeological materials. These surveys have recorded six archaeological sites, five of which have been determined to be not eligible for listing in the NRHP. The remaining site (45 SP 255) is a prehistoric site consisting of lithic artifacts, fire-cracked rock, and bedrock mortars at the Water System Annex 1, which is several miles from the installation. The area that is now the installation was considerably altered during the first half of the 20th century by irrigation, farming, and military activity, suggesting there is a very low probability of intact archaeological materials.

Architectural Resources. The main portion of Fairchild AFB has been completely surveyed for architectural resources, a process that has evaluated 197 structures at the installation (FAFB 2005a, FAFB 2008b). As of September 2009, Fairchild AFB evaluated Buildings 2025, 2050, and 2150 to be NRHP-eligible as individual structures. The Washington SHPO concurred with these evaluations and Historic American Building Survey/Historic American Engineering Record documentation was completed for Buildings 2060 and 2150. Building 2150 has since been demolished (FAFB 2010d).

An architectural survey at Fairchild AFB conducted in summer 2006 identified two potential historic districts on the main installation: (1) the former Deep Creek Air Force Station site south of the runway (including both the weapons and conventional storage areas and the AETC Survival School facilities) and (2) the hangars and support structures on the flightline (FAFB 2008b). On 23 September 2009, the Washington SHPO concurred with Fairchild AFB's evaluation that the buildings of the former Deep

Creek AFB are not a historic district eligible to the NRHP or NRHP-eligible on individual basis (FAFB 2010d). The hangars and support structures on the flightline (Buildings 1, 3, and 1001 through 1037) were determined to be eligible for the NRHP as contributing properties to an NRHP-eligible historic district (Flight Line Historic District).

Traditional Cultural Properties and Resources of Interest to American Indian Tribes. Tribes that could be affiliated with the geographical area of Fairchild AFB include the Coeur D’Alene, Kalispel, Methow, Nez Perce, Okanagan, Palus, Palouse, Salishan, Sanpoil-Nespelem, Sanpoil, Sinkayuse, Spokane, and Yakima. There are no known traditional cultural properties (TCPs) or sites sacred to Native Americans or federally recognized Indian tribes at Fairchild AFB (FAFB 2005a). Fairchild AFB consults with tribes on a regular basis and in the event any significant activity might occur. Tribes that have been contacted and sent a letter initiating project-specific consultation include the Confederated Tribes of the Colville Reservation, the Kalispel Indian Community of the Kalispel Reservation, the Spokane Tribe of Indians, and the Coeur D’Alene Tribe (see **Appendix B**).

3.8 Socioeconomics and Environmental Justice

3.8.1 Definition of the Resource

Socioeconomic Resources. Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly characteristics of population and economic activity. Regional birth and death rates and immigration and emigration affect population levels. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these fundamental socioeconomic indicators typically result in changes to additional socioeconomic indicators, such as housing availability and the provision of public services. Socioeconomic data at county, state, and national levels permit characterization of baseline conditions in the context of regional, state, and national trends.

Demographics, employment characteristics, and housing occupancy status data provide key insights into socioeconomic conditions that might be affected by a proposed action. Demographics identify the population levels and the changes in population levels of a region over time. Demographic data might also be obtained to identify a region’s characteristics in terms of race, ethnicity, poverty status, educational attainment level, and other broad indicators. Data on employment characteristics identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on personal income in a region can be used to compare the “before” and “after” effects of any jobs created or lost as a result of a proposed action. Data on industrial or commercial growth or growth in other sectors of the economy provide baseline and trend line information about the economic health of a region. Housing statistics provide baseline information about the local housing stock, the percentage of houses that are occupied, and the ratio of renters to homeowners. Housing statistics allow for baseline information to evaluate the impacts a proposed action might have upon housing in the region.

In appropriate cases, data on an installation’s expenditures in the regional economy help to identify the relative importance of an installation in terms of its purchasing power and influence in the job market.

Socioeconomic data shown in this section are presented at census tract, county, state, and national levels to characterize baseline socioeconomic conditions in the context of regional and state trends.

Environmental Justice. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that Federal agencies’ actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The EO was created to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income

with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, tribal, and local programs and policies.

Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action. Such information aids in evaluating whether a proposed action would render vulnerable any of the groups targeted for protection in the EO.

3.8.2 Existing Conditions

For the purpose of this socioeconomic analysis, three different spatial levels are used: (1) Region of Influence (ROI), defined as the census tracts including and surrounding Fairchild AFB, which are tracts 104.01, 104.02, 138, 139, and 141; (2) Spokane County, the county within which Fairchild AFB is located; and (3) the State of Washington. **Figure 3-3** illustrates the boundaries of the 2010 Census Tracts (ROI) at Fairchild AFB. Data from the installation will also be used where applicable.

The ROI best illustrates socioeconomic characteristics for the area nearest to Fairchild AFB. Spokane County represents the geographic area where most impacts from the selected projects would be expected to occur; therefore, it is included in the analysis. The Spokane, Washington, Metropolitan Statistical Area is made up entirely of Spokane County, and therefore, is not detailed separately in this analysis. Data from the State of Washington provide baseline comparisons for the spatial levels considered in this analysis. Data for the United States are included to provide additional data for comparison.

Demographics. Fairchild AFB is approximately 12 miles west of Spokane, Washington, in Spokane County. The installation's population exceeds 8,600 with approximately 17,000 retirees in the area. In 2010, the population of Spokane County was 471,221. Between 2000 and 2010, Washington's population increased by 14 percent. In the same time period, Spokane County grew by 13 percent (U.S. Census Bureau 1990, U.S. Census Bureau 2000, U.S. Census Bureau 2010b, USEPA 2002).

In 2010, the population of the ROI was 27,218 (USEPA 2002). The U.S. Census Bureau changed the census tract boundaries in Spokane County between 1990 and 2000 and between 2000 and 2010. Therefore, 2000 population data were compiled using the 2000 census tracts that are equivalent with the 2010 census tracts in the ROI. Population data from 1990 were not available for the ROI because the 1990 census tracts were not equivalent to the 2010 census tracts. Complete population data are presented in **Table 3-9**.

Employment Characteristics. The percentage of persons employed in the armed forces is 17.2 percent in the ROI, 1.6 percent in Spokane County, 1.5 percent in Washington, and 0.7 percent in the United States. The largest percentage of employees by industry across all spatial levels except the ROI is the educational, health, and social services industry. The armed forces is the largest employer in the area surrounding Fairchild AFB (U.S. Census Bureau 2010c). Complete information regarding employment by industry is provided in **Table 3-10**.

Fairchild AFB is the largest employer in Eastern Washington State and encompasses more than 5,100 active-duty, WANG, tenant unit members, and civilian employees. Another major tenant organization is the Armed Forces Reserve Center, which comprises approximately 850 Army Guard and Reserve personnel assigned to 18 units with various missions. The annual payroll of Fairchild AFB is approximately \$221 million, and Fairchild's annual economic impact on the community is approximately \$427 million, constituting 13 percent of the local economy (FAFB undated).

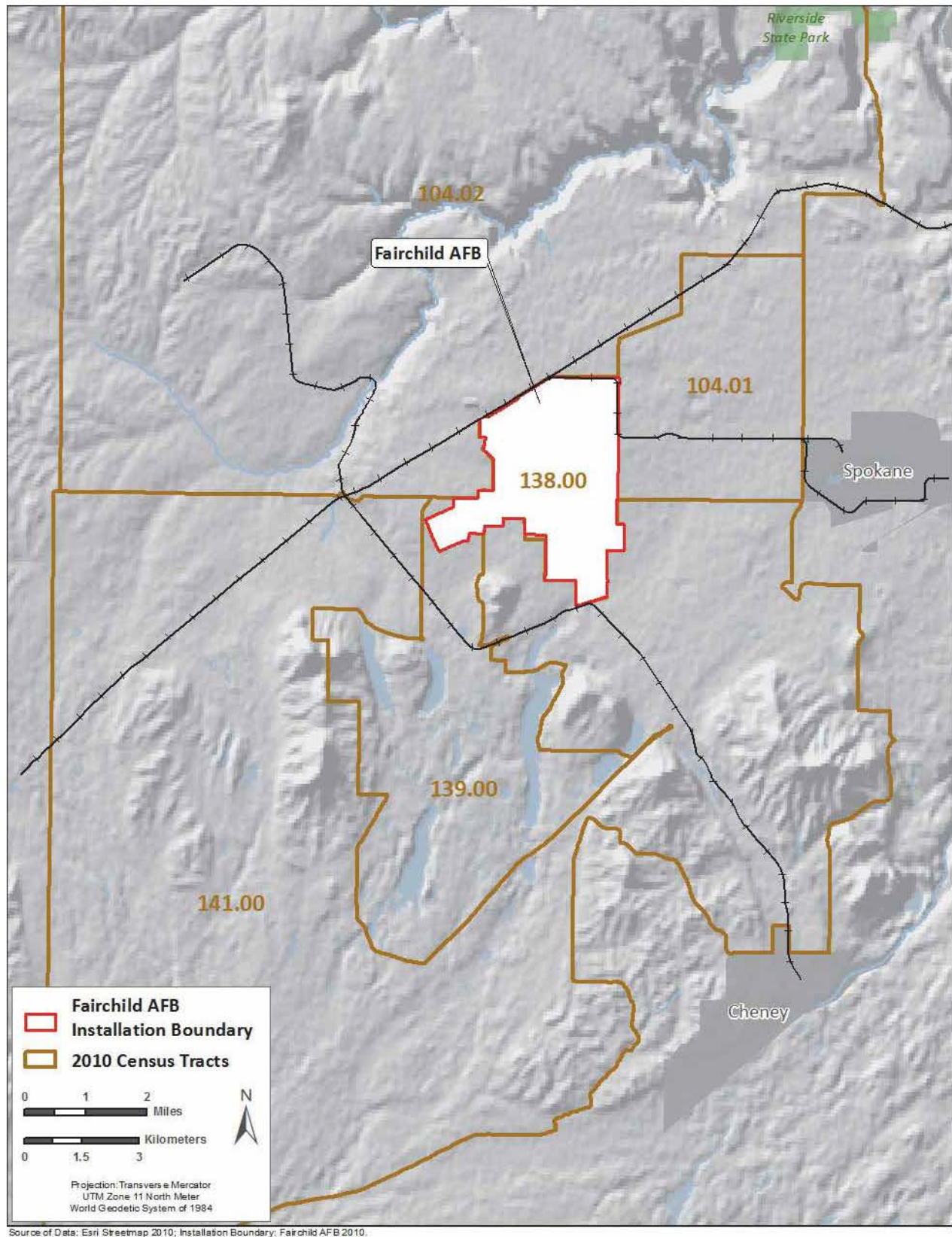


Figure 3-3. Locations and Boundaries of the 2010 Census Tracts at Fairchild AFB

Table 3-9. Population Data for 1990, 2000, and 2010

Region	Population			Percent Change in Population	
	1990	2000	2010	1990 to 2000	2000 to 2010
ROI	N/A ^a	23,072 ^b	27,218	N/A ^a	18.0 ^b
Spokane County	361,364	417,939	471,221	15.7	12.7
Washington	4,866,692	5,894,121	6,724,540	21.1	14.1
United States	248,709,873	281,421,906	308,745,538	13.2	9.7

Sources: U.S. Census Bureau 1990, U.S. Census Bureau 2000, U.S. Census Bureau 2010b, USEPA 2002

Notes:

- a. The population of the ROI in 1990 is not suitable for comparison with 2000 and 2010 because the census tract boundaries changed between 1990 and 2000.
- b. The definitions of the census tracts used in the ROI changed between 2000 and 2010. Therefore, the population of the ROI in 2000 was compiled using the 2000 census tracts that are equivalent with the 2010 census tracts that make up the ROI. These include census tracts 104.01, 104.02, 138, 139, 141.

Key: N/A = Not Available

Table 3-10. Overview of Employment by Industry, 2010

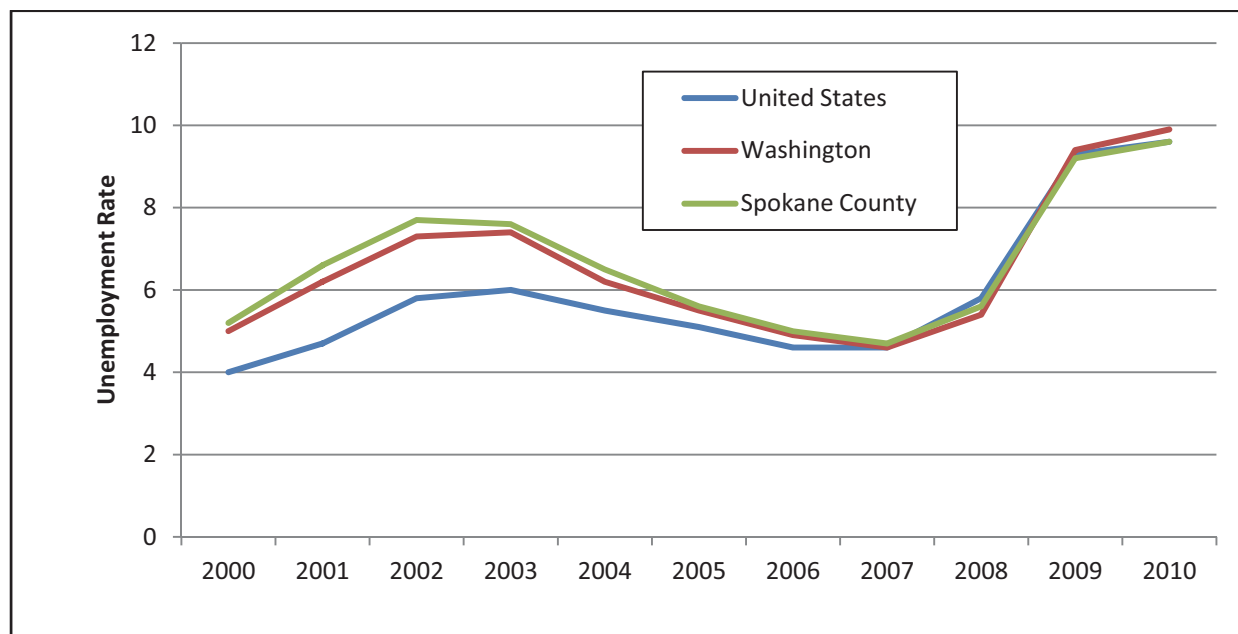
Employment Types	ROI ^a	Spokane County	Washington	United States
Population 16 Years and Over in the Labor Force ^b	71,001	137,166	6,683,498	156,966,769
Percent of population 16 years and over in labor force employed within the armed forces	17.2	1.6	1.5	0.7
Percent Employed Persons 16 years old and over in Civilian Labor Force (by industry)				
Agriculture, forestry, fishing and hunting, and mining	0.9	0.7	2.3	1.7
Construction	4.2	5.6	6.6	6.5
Manufacturing	3.8	7.3	9.6	10.0
Wholesale trade	2.4	3.3	2.9	2.8
Retail trade	6.2	10.9	10.2	10.4
Transportation and warehousing, and utilities	4.2	4.5	4.6	4.6
Information	0.6	1.9	2.3	2.2
Finance, insurance, real estate, and rental and leasing	4.3	7.0	5.6	6.4
Professional, scientific, management, administrative, and waste management services	4.1	8.6	10.4	9.5
Educational, health, and social services	15.7	22.9	18.5	20.0
Arts, entertainment, recreation, accommodation, and food services	4.9	8.1	7.7	8.0
Other services (except public administration)	1.5	4.2	4.2	4.4
Public administration	7.9	4.1	4.7	4.4

Source: U.S. Census Bureau 2010c

Notes:

- a. The most recent industry employment data available for the ROI are from the 2005–2009 American Community Survey, which uses the census tract definitions used in the 2000 Census. The industry employment data for the ROI were obtained by using the 2000 census tracts that are equivalent with the 2010 census tracts that make up the ROI. These include census tracts 104.01, 104.02, 138, 139, and 141.
- b. Labor force includes persons that are employed or unemployed civilians and members of the armed forces.

Unemployment in the area of Fairchild AFB is generally close to the national average. In 2010, the monthly unemployment rates (not seasonally adjusted) were 9.6 percent (the same as the national average) for Spokane County and 9.9 percent for the State of Washington (USEPA 2008). The overall unemployment trends in Spokane County, Washington, and the United States are similar (see **Figure 3-4**).



Source: USEPA 2008

Figure 3-4. Unemployment Percentages, 2001 to 2011

Housing Characteristics. In 2010, the U.S. Census Bureau reported that there were 201,434 housing units in Spokane County; 14,267 of which were vacant, resulting in a 7.1 percent vacancy rate. Owner-occupied units in Spokane County totaled 120,763 units, or 64.5 percent of all occupied units, while the remaining 35.5 percent were renter-occupied units. In 2010, there were 9,726 housing units in the ROI; 9.0 percent of which were vacant. Of the 8,852 occupied housing units in the ROI, 70.5 percent were owner-occupied and 29.5 percent were renter-occupied (USEPA 2002).

The Fairchild AFB community consists of more than 10,000 military and civilian personnel and their families living on- and off-installation. Approximately 47 percent of Fairchild AFB active-duty military personnel and their family members either reside in unaccompanied housing or in military family housing (FAFB 2010f).

Environmental Justice. Minority population levels within the ROI are similar to those in Spokane County and less than those in Washington and the United States. Within the ROI, population reporting to be a race other than white was 12.3 percent, which is similar but slightly higher to Spokane County (10.7 percent) and less than Washington (22.8 percent) and the United States (27.6 percent). The Hispanic or Latino population in the ROI was similar to that in Spokane County, and less than that in Washington and the United States. The percentage of individuals below the poverty level in the ROI is less than in Spokane County, Washington, and the United States. The number of families below the poverty level in the ROI is 8.5 percent, which is similar to Washington and Spokane County, but lower than the United States (U.S. Census Bureau 2010c). **Table 3-11** provides the regional race and ethnicity demographic data.

Table 3-11. Minority, Low-Income, and Poverty Status, 2010

Demographic	ROI	Spokane County	Washington	United States
Total Population	27,218	471,221	6,724,540	308,745,538
Percent Male	55.0	49.4	49.8	49.2
Percent Female	45.0	50.6	50.2	50.8
Percent Under 5 Years	6.9	6.4	6.5	6.5
Percent Over 65 Years	9.5	12.9	12.3	13.0
Percent White	87.7	89.2	77.3	72.4
Percent Black or African American	2.9	1.9	3.6	12.6
Percent American Indian, Alaska Native	1.9	1.5	1.5	0.9
Percent Asian	2.0	2.1	7.2	4.8
Percent Native Hawaiian and Other Pacific Islander	0.4	0.4	0.6	0.2
Percent Some Other Race	1.2	1.2	5.2	6.2
Percent Reporting 2 or more races	3.9	3.8	4.7	2.9
Percent Hispanic or Latino ^a	5.5	4.5	11.2	16.3
Percent of Individuals Below Poverty ^b	11.8	14.1	12.1	15.3
Percent of Families Below Poverty ^b	8.5	9.1	8.2	11.3
Per Capita Income ^b	\$22,587.40 ^c	\$25,127	\$29,733	\$26,059
Median Household Income ^b	\$59,921.80 ^c	\$59,999	\$62,328	\$50,046

Sources: USEPA 2002, U.S. Census Bureau 2010c

Notes:

- a. Persons of Hispanic or Latino origin can be of any race, and thus are also included in applicable race categories.
- b. The most recent income and poverty data available for the ROI are from the 2005–2009 American Community Survey, which uses the census tract definitions used in the 2000 Census. The income and poverty data for the ROI were obtained by using the 2000 census tracts that are equivalent to the 2010 census tracts that make up the ROI. These include census tracts 104.01, 104.02, 138, 139, and 141.
- c. Per Capita Income and Median Household Income for the ROI consist of the average of all census tracts included in the ROI.

3.9 Infrastructure

3.9.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to economic growth

of an area. The infrastructure and utilities components discussed in this section include airfield pavements, transportation, the electrical supply, central heating and cooling systems, the liquid fuel supply, the natural gas supply, the water supply, sanitary sewer and wastewater treatment, storm water systems, communications systems, and solid waste.

Airfield pavements include all runways, overruns, aprons, ramps, and arm/disarm pads that are associated with aircraft maintenance and aircraft operations. Transportation includes major and minor roadways that feed into the installation and the security gates, roadways, parking areas, and pedestrian networks on the installation. Solid waste management primarily relates to the availability of systems and landfills to support a population's residential, commercial, and industrial needs.

3.9.2 Existing Conditions

Airfield. Fairchild AFB has one runway (Runway 05/23) measuring 13,900 feet long and 150 feet wide with a 1,000-foot-long overrun on each end. An Airfield Pavement Condition Survey was conducted in 2007 for the airfield (FAFB 2010a). The primary airfield pavement is high-strength concrete with high Allowable Gross Loads for KC-135 and B-52 aircraft and is able to handle any aircraft in the Air Force inventory. The survey found that the surface condition of airfield pavement ranges from "Adequate" to "Critical"; however, nearly all of the primary pavements are in "Adequate" condition. One third of the non-load-bearing asphalt shoulders were found to be in "Critical" condition and have since been repaired. Other areas of the airfield in need of repair include aircraft parking stubs and concrete slabs at the Heavy Duty Maintenance Area.

Transportation. Fairchild AFB is approximately 12 miles west of the City of Spokane, Washington, on U.S. Route 2. Route 2 provides the primary access to the installation and runs east-west, north of the installation. Interstate Highway 90 (I-90) also runs east-west out of Spokane, south of the installation. The road network on Fairchild AFB adequately meets the installation's needs. Mitchell Drive connecting to Bong Street and Fairchild Highway are the primary roads on Fairchild AFB. They act as arterial roads to move traffic on and off the installation. All other roads feed into these two primary roads.

Under normal security levels, the roads serving Fairchild AFB adequately handle traffic loads. Two areas that require attention are the entry gates and the intersection of Poplar Street and Mitchell Drive. The intersection of Poplar Street and Mitchell Drive does not flow well during peak travel time in the afternoon with traffic departing the installation. There is no control device at the intersection and traffic on Fairchild Highway, which services a major part of the installation, must wait for breaks in traffic along Mitchell Drive. The current design establishes a four-way intersection coming off Fairchild Highway at Poplar Road. Currently, the Federal, state, and county governments have no plans to make significant changes to this road network.

Electrical Supply. Fairchild AFB receives electrical power from Avista Utility via two on-installation substations at 115 kilovolts (kV). The North and South substations have three feeder circuits each, distributing power at 13.2 kV. The electrical system consists of the two 13.2-kV substations (North and South), power lines (underground and overhead), high-voltage switches, junction boxes, and transformers. The Bonneville Power Administration conducts annual scheduled maintenance on the North and South substations. In May 2007, the HQ AMC Infrastructure Assessment Team rated the system as "Adequate." In addition, the installation has adequate backup power systems to support priority facilities as outlined in the installation's contingency response plan, and authorized in AFI 32-1063. The electrical supply and distribution system does not represent a constraint to future development on Fairchild AFB; however, as with any infrastructure, repairs and upgrades are necessary to support current and future activities.

Central Heating and Cooling. Fairchild AFB has a heating, ventilating, and air conditioning (HVAC) shop that maintains 4,832,000 ft² of facilities with 68 boilers, 72 furnaces, 321 infrared heaters, and 118 water heaters or converters. One small heating plant, the Deep Creek Steam Plant, remains in use serving three facilities of the AETC Survival School. As replacements for these facilities are constructed, they would have their own boilers. Fairchild AFB has no central cooling system. Cooling is supplied to individual facilities by chillers, air handling units, and air conditioning units. Recent Energy Management Control System upgrades have substantially improved the reliability of controls over HVAC equipment. In May 2007, the HQ AMC Infrastructure Assessment Team rated the system as “Adequate.” The heating and cooling systems do not represent a constraint to the future development on Fairchild AFB.

Liquid Fuel Supply. The installation liquid fuel system consists of a filtration house, a bulk storage tank farm with three tanks, a transfer system, two Type III hydrant-refueling systems with two operating tanks, a Type II hydrant-refueling system used by the 141 WANG, a ground products storage system, and two Government-owned vehicle service stations. Fairchild AFB receives fuel by commercial pipeline and commercial tank truck. In May 2007, the HQ AMC Infrastructure Assessment Team rated the overall system as “Adequate.” The HQ AMC Infrastructure Assessment Team rated the specific components of the liquid fuel system as follows:

- *Receipt:* “Degraded”
- *Bulk Storage:* “Adequate”
- *Transfer System:* “Degraded”
- *Fillstands:* “Adequate”
- *Hydrant Systems:* “Adequate”
- *Ground Products:* “Adequate.”

The bulk petroleum, oil, and lubricant storage tanks and truck offload facilities require upgrading. The existing truck offload area does not comply with environmental standards. Aviation storage tanks need maintenance to prevent corrosion and leakage. The truck offloading area is too small to handle a large volume of tanker traffic. Limited offload capacity, coupled with the small storage capacity would create a bottleneck if the fuel supply pipeline becomes unavailable for a lengthy period. The fuel supply pipeline is more than 50 years old and is not compliant with current environmental and USAF fuel standards.

Natural Gas Supply. The natural gas system consists of natural gas lines, valves, vents, and meters. It was recently expanded to accommodate the decentralization of the installation’s heat plant system. The system is owned in part by both the USAF and Avista Utilities. The Government-owned natural gas lines are a mixture of polyethylene and steel piping. Avista Utilities performs all polyethylene pipe repairs including repairs to the Government-owned lines. Steel piping is generally vintage 1960, while polyethylene pipe is generally less than 10 years old. The steel gas lines are protected from corrosion by a cathodic protection system. The natural gas system was rated as “Adequate” prior to privatization in March 2008 by the 92d CES/Civil Engineer Operations Electrical Squadron. The natural gas system does not represent a constraint to the future development on Fairchild AFB.

Water Supply. The water supply and distribution system consists of the installation-owned potable transmission piping, booster pump stations, and water distribution system piping. At certain locations on the installation, the existing distribution system cannot meet irrigation peak demand plus fire flow. Additional storage is needed in the SERE Survival School area to meet fire flow requirements demand. In the SERE Survival School area, a single 12-inch polyvinyl chloride (PVC) pipe serves the entire complex. Also, sufficient quantities of fire flow water are not available to protect SERE Survival School facilities adequately. In May 2007, the HQ AMC Infrastructure Assessment Team rated the system as

“Degraded” due to the absence of a cross-connection survey. The cross-connection survey was completed in November 2007 and the rating was changed to “Adequate.”

Sanitary Sewer and Wastewater Treatment. The sanitary sewer system is composed of the lateral lines from buildings, houses, lift stations, 489 sewer manholes, and 168,738 linear feet of sewer collection mains. The City of Spokane treats the majority of the sanitary sewer from Fairchild AFB. A large onsite sewage system processes sanitary sewage at the SERE Resistance Training Camp. Most of the installation sanitary sewer system is approximately 50 years old. In May 2007, the HQ AMC Infrastructure Assessment Team rated the system as “Adequate.” The completion of several sewer relining projects significantly improved many of the sanitary sewer system collection lines.

Storm Water. The storm drainage system is composed of the storm water collection catch basins, drywells, collection piping, lagoons, ditches, and other storm water conveyances. The base system is divided into eight storm water basins. The most significant storm water basin is Basin 1, which flows in a general northwest-to-southeast direction via storm sewer, open storm conveyances, and sheet flow into a series of ponds before discharging off-installation. Industrial activities within Basin 1 include aircraft maintenance, washing, and refueling; vehicle maintenance, washing, and refueling; outdoor equipment and vehicle storage; bulk fuel storage; personal vehicle maintenance and washing; and aircraft deicing and anti-icing activities.

In May 2007, the HQ AMC Infrastructure Assessment Team rated the system as “Adequate.” Flooding occurs during rain-on-snow events exacerbated by sudden increases in temperatures. Runoff from the various drainage basins contributes to local flooding. The existing storm water conveyance system covers the central part of the installation and flightline areas. The southern portion of the installation has a storm water conveyance system serving the SERE School. The remainder of the developed area allows sheet flow to run into open drainage ditches.

Perched groundwater is present in many areas of the installation and localized flooding/ponding can occur, especially in the spring. Upgrading the storm water conveyance system is necessary to alleviate some of these issues.

Communications. The communications infrastructure at Fairchild AFB provides support to the 92 ARW and its associate units. Services and infrastructure are available to support a wide range of communications requirements. Fairchild AFB infrastructure and equipment are capable of supporting voice, data, video, wireless, land mobile radio, aircraft communications, and security systems. The existing manhole/duct system is used to distribute the copper and fiber cable plant throughout the installation. The normal duct system consists of four 4-inch Schedule 40 PVC pipes between manholes and two 4-inch conduits from the manhole to the building. In remote areas of the installation, the fiber/copper cables are direct buried and do not use this system.

The installation’s telephone system uses multiple switches to handle the variety of installation telephone requirements. The three main switches are in Buildings 2248, 9000, and 1304. These switches are interconnected via a Synchronous Optical Network backbone. There are 22 buildings on the wireless network at Fairchild AFB. The wireless network is on a separate Virtual Local Area Network and is encrypted using virtual private networks. The long-haul system is owned, operated, and controlled by the Defense Information Systems Agency. It provides reliable high-speed digital communications between computer systems at all AMC installations, other major commands, DOD components, and a limited commercial population.

The Air Traffic Control and Landing Systems equipment provides information to control flying missions. This equipment consists of Navigational Aids (NAVAIDs), meteorological equipment, Ultra High

Frequency (UHF)/Very High Frequency (VHF) radios, and radar systems. Air Traffic Control relies on dependable NAVAIDs and radio communications. The Instrument Landing System is used to land aircraft during inclement weather. The Tactical Air Navigation is used by aircraft for bearing, azimuth, and identification of the airfield. The meteorological equipment is real-time weather that assists in determining runway use and Instrumental Flight Rules/Visual Flight Rules conditions. The control tower uses UHF/VHF radios to provide air-to-ground/ground-to-ground communications. The control tower also uses a radar system called the Digital Bright Radar Indicator Tower Equipment, which is used to determine aircraft range and azimuth.

Solid Waste. Municipal solid waste (MSW) at Fairchild AFB is managed in accordance with the guidelines specified in AFI 32-7042, *Solid and Hazardous Waste Compliance*. This AFI incorporates by reference the requirements of Subtitle D, 40 CFR §§ 240 through 244, 257, and 258; and other applicable Federal regulations, AFIs, and DOD Directives. In general, AFI 32-7042 establishes the requirement for installations to maintain a solid waste management program that incorporates the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; recordkeeping and reporting; and pollution prevention.

Fairchild AFB has a contract with Sunshine Disposal and Recycling for solid waste pick-up and disposal of all refuse on the installation, with Waste Management of Spokane Washington. Waste Management removes refuse from Fairchild AFB properties and transports the solid waste to either the Spokane Regional Waste to Energy Facility or Graham Road Landfill. Yard waste is also taken to the Waste-to-Energy Facility, where it is then transported to a regional composting facility. Waste is collected in dumpsters placed throughout the installation and then removed. Currently, there are no operating landfills at Fairchild AFB. When materials do not meet criteria for thermal processing disposal at the Waste-to-Energy Facility, the solid waste goes to the landfill.

Construction and demolition waste generated from construction, renovation, and maintenance projects performed by off-installation contractors, is the responsibility of the contractor. Contractors are required to comply with Federal, state, local, and USAF regulations for the collection and disposal of MSW from the installation. Much of this material can be recycled or reused, or otherwise diverted from landfills. Construction and demolition contractors are required to recycle construction and demolition debris to the maximum extent practicable to ensure that Fairchild AFB meets the DOD goal of a 60 percent construction and demolition diversion rate by 2015. All non-recyclable construction and demolition waste is collected in a dumpster until removal. Construction and demolition waste contaminated with hazardous waste, ACM, LBP, or other undesirable components is managed in accordance with AFI 32-7042 and AFI 32-7086.

The availability of landfills to support a population's residential, commercial, and industrial needs is integral in evaluating MSW. Alternative means of waste disposal might involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and are limited to, receipt of construction and demolition debris. Recycling programs for various waste categories (e.g., glass, metal, and paper) reduce reliance on landfills for disposal.

3.10 Hazardous Materials and Waste

3.10.1 Definition of the Resource

Hazardous materials are defined by 49 CFR 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions" in

49 CFR § 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR §§ 105–180.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) at 42 U.S.C. 6903(5), as amended by the Hazardous and Solid Waste Amendments, as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.” Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR § 273. Four types of waste are currently covered under the universal waste regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include ACM, PCBs, and LBP. The USEPA is given authority to regulate these special hazard substances by the Toxic Substances Control Act (TSCA) Title 15 U.S.C. Chapter 53. TSCA Subchapter I identifies PCBs, Subchapter II handles ACMs, and Subchapter IV discusses LBP. USEPA has established regulations regarding asbestos abatement and worker safety under 40 CFR § 763 with additional regulation concerning emissions (40 CFR § 61). Whether from lead abatement or other activities, depending on the quantity or concentration, the disposal of the LBP waste is potentially regulated by the RCRA at 40 CFR § 260. The disposal of PCBs is addressed in 40 CFR §§ 750 and 761. The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

The DOD has developed the ERP, which facilitates environmentally responsible land management thorough investigation and cleanup of contaminated sites on military installations. Through the ERP, the DOD evaluates and cleans up sites where hazardous wastes have been spilled or released to the environment. Description of ERP activities provides a useful gauge of the condition of soils, water resources, and other resources that might be affected by contaminants. It also aids in identification of properties and their usefulness for given purposes (e.g., activities dependent on groundwater usage might be restricted until remediation of a groundwater contaminant plume has been completed).

For the USAF, AFD 32-70, *Environmental Quality*, and the AFI 32-7000 series incorporate the requirements of all Federal regulations, and other AFIs and DOD Directives for the management of hazardous materials, hazardous wastes, and special hazards. Evaluation extends to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of the Proposed Action.

3.10.2 Existing Conditions

Hazardous Materials and Petroleum Products. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. Under AFI 32-7086, the USAF has established roles, responsibilities, and requirements for a hazardous materials management program (HMMP). Fairchild AFB is currently developing an HMMP and once it is finalized, it will be the primary management tool for hazardous materials and wastes, including construction and debris

contracts. The purpose of the HMMP is to control the procurement and use of hazardous materials to support USAF missions, ensure the safety and health of personnel and surrounding communities, and minimize USAF dependence on hazardous materials. The HMMP includes the activities and infrastructure required for ongoing identification, management, tracking, and minimization of hazardous materials (FAFB 2010h). The installation's Pollution Prevention Plan supplements the installation's hazardous materials management process by establishing goals for reducing the use of hazardous materials. Fairchild's Environmental, Safety, and Occupational Health Council (ESOHC) directs the Pollution Prevention Program. It is the responsibility of the Environmental Management Subcommittee to support the ESOHC in developing, implementing, and managing the pollution prevention systems and programs at the installation. In addition, the Environmental Management Subcommittee facilitates hazardous materials training for Fairchild AFB (FAFB 2008c).

The reduction of the use of hazardous materials is further supplemented by the *Fairchild Air Force Base Green Procurement Program Plan* (FAFB 2006d). The Green Procurement Plan supports products made from recycled or bio-based materials, alternative fuels, and energy-efficient products, in addition to non-ozone-depleting substances and elimination of USEPA priority chemicals. The purpose of this plan is to use the purchasing power of the installation to reduce the consumption of hazardous materials and to stimulate the use of non-hazardous substitutes. The Environmental Management Subcommittee acts as the Green Procurement Program Team for the installation and oversees the implementation of the plan.

Hazardous materials at Fairchild AFB are managed by the Environmental Office. The Enterprise Environmental Safety and Occupational Health-Management Information System tracks acquisition and inventory control of hazardous materials. Hazardous materials and petroleum products such as fuels, flammable solvents, paints, corrosives, pesticides, deicing fluid, refrigerants, and cleaners are used throughout Fairchild AFB for various functions including aircraft maintenance; aircraft ground equipment maintenance; and ground vehicles, communications infrastructure, and facilities maintenance (FAFB 2008c).

Hazardous and Petroleum Wastes. Fairchild AFB maintains a Hazardous Waste Management Plan, which complies with 40 CFR §§ 260 to 272 and is required under AFI 32-7042. The plan prescribes the roles and responsibilities of all members of Fairchild AFB with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. In addition, the plan establishes procedures to comply with applicable Federal, state, and local standards for solid waste and hazardous waste management (FAFB 2007a).

As required by RCRA, the installation manages hazardous waste with the "cradle-to-grave" approach. The Hazardous Waste Stream Inventory is maintained as part of the Fairchild's AFB Hazardous Waste Management Plan and tracked via ESOHC's Management Information System program (FAFB 2010h). Hazardous wastes generated at Fairchild AFB include waste flammable solvents, contaminated fuels and lubricants, paint/coating, stripping chemicals, waste oils, waste paint-related materials, and other miscellaneous wastes (FAFB 2007a). Fairchild AFB is considered a large-quantity generator of hazardous materials because more than 1,000 kilograms of hazardous waste are produced at the installation in one calendar month. The installation operates one 90-day accumulation site and 18 satellite accumulation points (SAPs). An SAP is an area where small quantities, up to 55 gallons of "total regulated hazardous waste" or up to 1 quart of "acutely hazardous waste," are accumulated. When the volume exceeds these limits, the user temporarily stores the excess in another container and then transfers the full container to a 90-day accumulation site within 3 days. Hazardous waste from the 90-day accumulation site is then transported off-installation for ultimate disposal (FAFB 2010a).

Several facilities associated with the selected projects contain hazardous and petroleum wastes. Buildings 1012, 1019, and 2025 each contain an 800-gallon oil/water separator (OWS), and Building 2451 contains

a 700-gallon OWS. Buildings 2451 and 1012 each contain an SAP and Building 2025 contains a used oil, spent antifreeze, and waste fuels pick-up point (FAFB 2008d, FAFB 2010h).

Storage Tanks. AFI 32-7044, *Storage Tank Compliance*, implements AFD 32-70 and identifies compliance requirements for underground storage tanks (USTs), aboveground storage tanks (ASTs), and piping associated with USTs and ASTs that store petroleum products and hazardous substances. USTs are subject to regulation under RCRA, 42 U.S.C. 6901, and 40 CFR 280.

There are 12 ASTs with capacities greater than 10,000 gallons at Fairchild AFB. The majority of these ASTs are located in the bulk fuel storage area between Vet Road and POL Road. The ASTs at the bulk fuel storage area primarily store jet propellant-8 (JP-8) and aircraft deicing chemicals. The installation manages 23 regulated USTs and 32 unregulated (“exempt”) USTs. The installation’s regulated USTs store petroleum products (i.e., diesel, gasoline, and JP-8). The “exempt” storage tanks include heating oil storage tanks, emergency spill tanks, and OWS storage tanks. The design and construction of the regulated USTs meet Federal code technical standards as per AFI 32-7044 by having secondary containment structures and appropriate leak detection systems. There are three ASTs at the Maintenance Shop (Building 2025), which is associated with Project C6: one stores deicing fluid (magnesium chloride) for the installation and is 10,000 gallons, and two store deicing fluid (potassium acetate) for the flight line and are 15,000 gallons and 29,660 gallons (Shelton 2012). All of the storage tanks are in compliance with Federal, state, and local standards (FAFB 2009a, FAFB 2008d, FAFB 2010a).

Asbestos-Containing Material. Asbestos is regulated by the USEPA under the CAA, TSCA, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The USEPA has established that any material containing more than 1 percent asbestos by weight is considered an ACM. Friable ACM is any material containing more than 1 percent asbestos, and that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Building materials in older buildings (pre-1980) are assumed to contain asbestos; however, asbestos is still used in some construction materials today. Asbestos exists in a variety of forms and can include siding, ceiling tiles, floor tiles, floor tile mastic, roofing materials, joint compound, wallboard, thermal system insulation, boiler gaskets, paint, and other materials. Common sense measures, such as avoiding damage to walls and pipe insulation, help keep the fibers from becoming airborne.

AFI 32-1052, *Facilities Asbestos Management*, provides the direction for asbestos management at USAF installations. It requires installations to develop an Asbestos Management Plan for the purpose of maintaining a permanent record of the status and condition of ACM in installation facilities, and to document asbestos management efforts. In addition, AFI 32-1052 requires installations to develop an Asbestos Operating Plan detailing how the installation accomplishes asbestos-related projects.

Asbestos at Fairchild AFB is managed in accordance with the installation’s Asbestos Management Plan, which is updated annually. This plan specifies procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM-abatement projects. In addition, it is designed to protect personnel who live and work on Fairchild AFB from exposure to airborne asbestos fibers, and to ensure the installation remains in compliance with Federal, state, and local regulations pertaining to asbestos (FAFB 2010i, FAFB 2009b). Under the installation’s Asbestos Management Plan, air quality engineers are required to maintain a database of the location of asbestos in installation facilities, to the extent known, and a file of reports from asbestos surveys and asbestos projects (FAFB 2010i). Buildings must be checked for the presence of asbestos prior to demolition or renovation (FAFB 2009a).

The following buildings associated with the Proposed Action were constructed prior to 1980 and, therefore, are assumed to contain ACM: Buildings 1, 644, 1011, 1012, 1013, 1015, 1017, 1018, 1019, 1200, 1201, 1270, 1448, 1457, 1460, 1461, 1462, 1467, 1471, 2001, 2025, and 2451.

Lead-Based Paint. Lead is a heavy, ductile metal commonly found simply as metallic lead or in association with organic compounds, oxides, and salts. It was commonly used in house paint before 1978 until the Federal government banned the use of most LBP in 1978. Therefore, it is assumed that all structures constructed prior to 1978 contain LBP. Paint chips that fall from the exterior of buildings can contaminate the soil if the paint contains lead.

USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by reference the requirements of 29 CFR 1910.120, 29 CFR § 1926, 40 CFR 50.12, 40 CFR §§ 240 through 280, the CAA, and other applicable Federal regulations. In addition, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards (FAFB 2009b).

LBP at Fairchild AFB is managed in accordance with the installation's Lead Exposure and Lead-Based Paint Management Plan, which is updated annually. The plan is designed to establish management responsibilities and procedures for identifying and controlling hazards related to the presence of LBP. The plan addresses organizational roles and responsibilities, program development, management actions, data management, and training (FAFB 2009b). In 2003, a limited LBP inspection was conducted at Fairchild AFB (FAFB 2009a).

The following buildings associated with the Proposed Action were constructed prior to 1978, and therefore, are assumed to contain LBP: Buildings 1, 644, 1011, 1012, 1013, 1015, 1017, 1018, 1019, 1200, 1201, 1207, 1448, 1457, 1460, 1461, 1462, 1467, 1471, 2001, 2025, and 2451.

Polychlorinated Biphenyls. PCBs are a group of organic compounds used as dielectric and coolant fluids in equipment such as transformers, capacitors, fluorescent light ballasts, electric motors, and hydraulic systems. PCBs are managed and regulated in accordance with the USEPA's TSCA of 1976 (40 CFR 761). Chemicals classified as PCBs were widely manufactured and used in the United States throughout the 1950s and 1960s. The production of PCBs was banned in the United States in 1979. Therefore, it is assumed that all structures constructed prior to 1979 contain PCBs.

Based on their age, it is assumed that several of the buildings associated with the Proposed Action might have PCB-containing equipment, particularly fluorescent light ballasts.

The following buildings associated with the Proposed Action were constructed prior to 1979, and therefore, are assumed to contain PCBs (particularly fluorescent light ballasts): Buildings 1, 644, 1011, 1012, 1013, 1015, 1017, 1018, 1019, 1200, 1201, 1207, 1448, 1457, 1460, 1461, 1462, 1467, 1471, 2001, 2025, and 2451.

Pesticides. Fairchild AFB maintains a Pest Management Plan, as required by DOD Directive 4150.7. The plan describes the pest management practices at the installation, outlines the pest management efforts of the Pest Management Shop, and follows the recommended guidance of DOD Directive 4150.7. Chemical controls are a last resort method implemented at the installation only after all other procedures have failed. Fairchild AFB uses an integrated pest management approach to minimize the types and quantities of pesticides used at the installation while ensuring contamination of the environment and risks to human health are minimized. The installation's goal is to use 1,040 pounds of pesticides or less

annually (FAFB 2011). The installation's Green Procurement Plan adds further incentive to minimize the use of chemical pesticides.

Both chemical and non-chemical methods of weed pest control are used on the installation. Mechanical methods include mowing, weed eating, and hand-pulling. Temporary measures are usually chemical in nature. Currently, when weeds have been detected, a new spray unit will spray the area with herbicides. Herbicides approved for use on the installation are reviewed and updated as needed. Herbicides currently used include Arsenal, Bromacil, Diuron, Glyphosate, Oust, Prometon, Surflan, Banvel, Confront, Deuce, Dicamba, Escort, Gallery 75 DF, Garlon 3A & 4, Glean, Glyphosate, Rodeo, Snapshot 80 DF, Surflan A.S., Transline, Venengence, 2,4-D, and Weed and Feed. For noxious weeds, 2,4-D, Dicamba, and Transline are generally used (FAFB 2011).

No pesticides, insecticides, or herbicides are known to have been stored, mixed, or disposed of within any of the project areas associated with the Proposed Action.

Radon. Radon is a naturally occurring radioactive gas found in soils and rocks. It comes from the natural breakdown or decay of uranium. Radon has the tendency to accumulate in enclosed spaces that are usually below ground and poorly ventilated (e.g., basements). Radon is an odorless, colorless gas that has been determined to increase the risk of developing lung cancer. In general, the risk of lung cancer increases as the level of radon and length of exposure increase. The USEPA has established a guidance radon level of 4 picocuries per liter (pCi/L) in indoor air for residences; however, there have been no standards established for commercial structures. Radon gas accumulation greater than 4 pCi/L is considered to represent a health risk to occupants.

Fairchild AFB is in Spokane County, Washington, which is in Radon Zone 1. Radon Zone 1 has the highest potential for elevated indoor radon levels. Radon Zone 1 has a predicted average indoor radon level higher than 4 pCi/L (USEPA 2011a). The installation has been determined to be a Medium-risk installation, based on the results of the USAF Radon Assessment and Mitigation Program of 1987.

AFI 48-148 specifies the following requirements for protection of USAF personnel and the public from avertable doses of radon exposure:

- Newly constructed facilities should not be tested for one year after completion of construction to allow for foundation settling.
- Monitoring should be performed using a long-term monitor deployed in the lowest occupied location of the facility.
- Structures that exceed 4 pCi/L should be remediated by Civil Engineering to levels As Low as Reasonably Achievable.
- Remediated structures should be reassessed by the Installation Radiation Safety Officer for ambient radon concentrations no earlier than 2 weeks and no later than 6 months post remediation to validate the efficacy of the remedial action.
- For new, permanent operating locations, a sampling of the facilities should be assessed for radon.
- Civil Engineering should design and construct new facilities on medium- and high-risk installations with radon-resistant features.

Environmental Restoration Program. The Defense Environmental Restoration Program (DERP) was formally established by Congress in 1986 to provide for the cleanup of DOD property at active installations, BRAC installations, and formerly used defense sites throughout the United States and its

territories. The two restoration programs under the DERP are the ERP and MMRP. The ERP requires each installation to identify, investigate, and clean up contaminated sites. The MMRP addresses nonoperational military ranges and other sites that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituents. Eligible DERP sites include those contaminated by past defense activities that require cleanup under CERCLA, as amended by Superfund Amendment and Reauthorization Act, and certain corrective actions required by RCRA. Non-DERP sites are remediated under the Compliance-Related Cleanup Program.

There are a total of 80 ERP sites (37 IRP, 7 MMRP, and 36 Compliance Restoration Program sites) and 2 AOCs at Fairchild AFB. All AOCs have achieved statuses of Remedies in Place, Response Complete, or Site Closed (FAFB 2009c, FAFB 2010g). **Table 3-12** lists the ERP sites at the project areas associated with the Proposed Action and their current statuses. Some of the project areas for Project D3 are within several ERP sites. In addition, a former indoor firing range is located in the vicinity of Building 2001E (Project D2), and there could be soil contaminated with lead in the immediate area.

3.11 Safety

3.11.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses both workers' health and public safety during demolition activities and facilities construction, and during subsequent operations of those facilities.

Construction site safety is largely a matter of adherence to regulatory requirements for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and USAF regulations designed to comply with standards issued by the Occupational Safety and Health Administration (OSHA) and USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors.

Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of extremely noisy environments. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

AFI 91-202, *USAF Mishap Prevention Program*, implements AFD 91-2, *Safety Programs*, and AFD 91-3, *Occupational Safety and Health*, by outlining the Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program. It establishes mishap prevention program requirements (including the BASH Program), assigns responsibilities for program elements, and contains program management information. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements.

Table 3-12. Summary of ERP Sites at the Project Areas Associated with the Proposed Action

Site Number	Site Name	Site Description	Status	Selected Projects	Date of Remedy In Place
SD-37*	Installationwide OWS	Contaminants in the soil and groundwater from petroleum hydrocarbons, metals, and VOCs released from OWSs at several airfield buildings and a UST formerly located at Building 2447 are of concern at this site. Residual contaminated soil was left in place at most of the buildings when the OWSs were either removed or upgraded. The detected constituents included BTEX compounds, metals, and TPH (the primary contaminant of concern). Groundwater underlying this site is currently not used as a drinking water source. The dominant groundwater flow direction is to the northeast.	RI/FS	D4, C6	N/A
SS-26*	Spill Site - Flightline	This site is located along Taxiway 1, adjacent to Buildings 1015, 1017, and 1019. During runway soil compaction testing in 1982, petroleum odors were identified near Building 1019. The petroleum vapors were assumed to be from leaking underlying jet fuel distribution lines. The contaminant of concern is benzene in the groundwater and long-term monitoring is the selected remedy.	RA-O	D4	07/14/93
SS-39*	TCE Orphan Plumes	Unlined ditches showed visual signs of TCE contamination during previous investigation. Contaminants in groundwater are also a concern at this site.	RD	D2, D4, C4, C6, I2	12/10/10
RW-11*	Radioactive Waste Disposal Area	This site is located at the former site of Deep Creek Air Force Station. The site includes two USTs, a burial trench, and three interior work areas. The work areas were formerly used for conducting routine maintenance on nuclear device components. The USTs were designed as contingency for the containment of washwater in the event of a spill involving the release of radioactive materials during component maintenance activities. Recent investigations provide no evidence to suggest any releases ever occurred at the facility. Component maintenance involved the mechanical disassembly and cleaning surfaces of nuclear materials. The paper wastes and small amounts of solvent generated were disposed of in the burial trench. The USTs were removed and the buried trench was excavated. A removal action was conducted in December 2011 to remove any remaining soil contamination.	DD/ROD	D1	N/A

Site Number	Site Name	Site Description	Status	Selected Projects	Date of Remedy In Place
OT-15*	EOD Range	This site contains earthen berms used for shielding during waste detonation, burning troughs used to contain wastes during open burning, a bunker, a 500-gallon fuel oil storage tank, a burial trench area where residuals were buried, and a dirt access road. Items buried or detonated at this site included small explosive ordinance items (i.e., unserviceable munitions and unexploded ordinance). Lead and thallium were present at the site but no nitroaromatic explosive compounds were detected in any samples collected.	No Action	NI1	08/31/06
TU500	West Defuel	This site is the location of a former UST that supplied fuel for aircraft operations. One 25,000-gallon JP-4 UST was removed in 1995. The date of the release is unknown; however, the release could have occurred before 1992. Contaminants of concern in the groundwater include BTEX, 1, 3-dichlorobenzene, 1, 4-dichlorobenzene, 1, 2-dichlorobenzene, pentachlorophenol, and naphthalene. Contaminants of concern in the soil include BTEX, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and chrysene. Interim remedial actions have been conducted at the site including the implementation of a bioventing system and excavation to remove some existing soil contamination; however, these actions have been unable to remediate the entire extent of contamination at the site.	RI/FS	D4	N/A
TU502	Site 2160	This site is the location of 14 former USTs that were used to store heating oil. The USTs were removed in 1997; however, it was not possible to remove all of the soil and groundwater contamination at the time of the removal. DROs have been detected in groundwater and soil at concentrations up to 55 and 16 million ppb, respectively.	RI/FS	C2, S1	N/A
OW046	Building 1011 West OWS	This site is the location of a former 305-gallon OWS and is located off the southwestern corner of Building 1011 (aircraft hangar). The OWS previously received wastes from a trench drain located inside Building 1011. These wastes could have included used fuel and oil, lubricants, and solvents. The OWS was removed on 23 May 1995. Petroleum contamination was detected in excavated soils. A composite soil sample was collected during the excavation of the OWS, and contaminants of concern identified included TPH-GRO and TPH-DRO. Groundwater was not collected, but appeared to have a visible petroleum sheen. No additional sampling or remediation activities have occurred at this site since removal of the OWS.	RI/FS	D4	N/A

Site Number	Site Name	Site Description	Status	Selected Projects	Date of Remedy In Place
OW048	Building 1029 East OWS	This site is the location of a former concrete 298-gallon OWS located off the southeastern corner of Building 1029 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water was discharged from the OWS to the storm sewer. The OWS was removed in June 1995, and petroleum contamination was detected in the excavation and observed in excavated soils. Approximately 160 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from four discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-DRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-GRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A
OW049	Building 1029 West OWS	This site is the location of a former concrete 352-gallon OWS off the southwestern corner of Building 1029 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water was discharged from the OWS to the storm sewer. The OWS was removed in June 1995, and petroleum contamination was detected in the excavation and in excavated soils. Approximately 50 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from four discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-GRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-DRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A

Site Number	Site Name	Site Description	Status	Selected Projects	Date of Remedy In Place
OW050	Building 1033 East OWS	This site is the location of a former concrete 357-gallon OWS located off the southeastern corner of Building 1033 (aircraft hangar). The OWS was installed in the 1950s, and received wastes (i.e., used fuel/oil, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water was discharged from the OWS to the storm sewer. The OWS was removed in July 1995, and petroleum contamination was observed in the excavation and excavated soils. Approximately 70 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-GRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-DRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, this site was deemed unclear. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A
OW051	Building 1033 West OWS	This site is the location of a former concrete 337-gallon OWS located off the southwestern corner of Building 1033 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water was discharged from the OWS to the storm sewer. The OWS was removed in May 1995, and petroleum contamination was detected in the excavation and in excavated soils. Approximately 70 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-DRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-GRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclear. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A

Site Number	Site Name	Site Description	Status	Selected Projects	Date of Remedy In Place
OW052	Building 1037 East OWS	This site is the location of a former concrete 890-gallon OWS located off the southeastern corner of Building 1037 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected in a built-in holding chamber, and the water was discharged from the OWS to the storm sewer. The OWS was removed in November 1995, and petroleum contamination was observed in the excavation and excavated soils. Approximately 5 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-GRO and TPH-DRO were detected in the sample, and exceeded their action levels. All other compounds were detected below action levels or non-detect. Groundwater was encountered in the excavation and appeared to have visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A
OW053	Building 1037 West OWS	This site is the location of a former concrete 890-gallon OWS located off the southwestern corner of Building 1037 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected in a built-in holding chamber, and the water was discharged from the OWS to the storm sewer. The OWS was removed in November 1995, and no petroleum contamination was observed in the excavation or excavated soils. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. None of the compounds detected in the soil were above action levels. Groundwater was encountered in the excavation; however, it did not appear to have a visible sheen and a sample was not collected. Based on soil sample results, the site was deemed clean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A

Site Number	Site Name	Site Description	Status	Selected Projects	Date of Remedy In Place
OW058	Hotspot No. 5 TPH Contamination	This site includes TPH contamination encountered during the installation of treatment wells at Hotspot No. 5 within ERP Site SS-39. During the installation of treatment wells, potential petroleum-contaminated soil was observed in four wells at depths ranging from 12 to 15 feet below ground surface. A soil sample was collected from one of the well borings and analyzed for VOCs and TPH. TPH-DRO and heavy oils were detected and exceeded action levels. The source of contamination has been identified to be associated with former facility 2094, which housed a 3,000-gallon gasoline UST and a 4,000-gallon diesel UST. The USTs and fuel dispensers were removed in 1995. The USTs were reported to be in good condition with no evidence of fuel leakage. However, gasoline- and diesel-contaminated soil was found beneath the fuel dispensers with concentrations of gasoline, diesel, and BTEX above clean-up levels.	RI/FS	I2	N/A

Sources: FAFB 2009c, FAFB 2008e, FAFB 2010g

Note: * Currently have LUCs in place (refer to **Section 3.2.2** for further details regarding LUCs).

Key:

N/A = Not Available

RI/FS = Remedial Investigation/Feasibility Study

RD = Remedial Design

RA-C = Remedial Action Construction

RA-O = Remedial Action Operation

NFRAP = No Further Response Action Planned

TCE = Trichloroethylene

EOD = Explosive Ordnance Disposal

BTEX = Benzene, Toluene, Ethylbenzene, and Xylene

TPH = total petroleum hydrocarbon

DRO = Diesel Range Organics

VOC = Volatile Organic Compound

ppb = parts per billion

JP-4 = jet propellant-4

GRO = Gasoline Range Organics

DD = Decision Document

ROD = Record of Decision

SVOC = Semi-Volatile Organic Compounds

3.11.2 Existing Conditions

Construction Safety. All applicable safety standards, such as those required by OSHA are strictly followed at Fairchild AFB. Installation personnel are regularly briefed on hazards and safety concerns existing in their particular workplace. All contractors performing construction and demolition activities at Fairchild AFB are responsible for following ground safety regulations and workers compensation programs and are required to conduct construction and demolition activities in a manner that does not pose any risk to workers or personnel. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operations; to monitor exposure to workplace chemicals (e.g., asbestos, lead, hazardous materials), physical hazards (e.g., noise propagation, falls), and biological agents (e.g., infectious waste, wildlife, poisonous plants); to recommend and evaluate controls (e.g., prevention, administrative, engineering); to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

There is the potential for construction workers to encounter contamination from ERP sites during construction and demolition activities. Therefore, it is recommended that a health and safety plan be prepared in accordance with OSHA requirements prior to commencement of construction activities. Workers performing soil-removal activities within ERP Sites are required to have OSHA 40-hour Hazardous Waste, Operations, and Emergency Response (HAZWOPER) training. In addition to this training, supervisors are required to have an OSHA Site Supervisor certification. Should contamination be encountered, the handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and Fairchild AFB programs and procedures. HAZWOPER regulations that protect workers and the public at or near a hazardous waste clean-up site are discussed in 29 CFR 1910.120 and 29 CFR § 1926.

Explosives and Munitions Safety. Explosive safety clearance zones must be established around facilities used for the storage, handling, and maintenance of munitions. Air Force Manual 91-201 establishes the size of the clearance zone based upon QD criteria or the category and weight of the explosives contained within the facility. Areas that require QD safety zones include munitions facilities, firing ranges, and FAA restricted areas. There are several areas that are constrained by QD arcs or CZs at Fairchild AFB. These zones are associated with the Alert Area, Explosive Combat Aircraft parking, the Munitions Storage Area, and at either end of the main runway (see **Figures 2-1** and **2-2**). Fairchild AFB is aggressively managing its development program to ensure that it meets explosive safety requirements. There are currently no electromagnetic radiation safety zones, antenna look-angles, or security CZs that affect development on Fairchild AFB (FAFB 2006b).

Range sites on Fairchild AFB contain various munitions, unexploded ordnance (UXO), and Chemical Agent Identification Sets (CAIS). Most of the munitions, UXO, and CAIS on the surface have been removed. However, munitions, UXO, and CAIS can still be found below the ground surface.

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4. Environmental Consequences

This section contains four subsections. **Section 4.1** provides a general introduction to the environmental consequences analysis, including significance criteria for each resource area. **Section 4.2** presents the No Action Alternative, which is prescribed by CEQ regulations. **Section 4.3** provides a general analysis of the environmental consequences by resource area. **Section 4.4** provides the detailed analysis of the Proposed Action, as presented in **Section 2.1**. Potential cumulative effects that could occur as a result of implementing the Proposed Action and other past, present, and reasonably foreseeable projects are discussed in **Section 5**.

4.1 Introduction

The intention of **Section 4** of this IDEA is to present both a general analysis of the environmental effects of installation development activities (see **Section 4.3**), and to provide potential environmental effects of selected installation development projects (see **Section 4.4**). The general analysis identifies the general environmental effects on each resource area associated with construction, demolition, infrastructure improvement, natural infrastructure upgrade, and strategic sustainability performance activities, with a focus on avoiding those areas that are constraints to development. However, a general analysis of potential activities alone does not provide the framework to assess adequately the potential environmental consequences of a single proposed project. Therefore, **Section 4.4** presents a detailed analysis of the selected demolition, construction, infrastructure improvement, natural infrastructure improvement, and strategic sustainability performance projects under the Proposed Action as described in **Section 2.1**.

The specific criteria for evaluating the potential environmental effects of the No Action Alternative or the Proposed Action are discussed in the following text, identified by resource area. The significance of an action is also measured in terms of its context and intensity. The context and intensity of potential environmental effects are described in terms of duration, whether they are direct or indirect, the magnitude of the impact, and whether they are adverse or beneficial, summarized as follows:

- **Short-term or long-term.** In general, short-term effects are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term effects are those that are more likely to be persistent and chronic.
- **Direct or indirect.** A direct effect is caused by an action and occurs around the same time at or near the location of the action. An indirect effect is caused by an action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action.
- **Negligible, minor, moderate, or significant.** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. Significant effects are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the policies set forth in NEPA. Significance criteria by resource area are presented in the following text.
- **Adverse or beneficial.** An adverse effect is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment.

Mitigation measures, BMPs, and environmental protection measures are discussed to describe how the level of impact of a project on a resource area could be minimized. Mitigation measures only refer to those actions that could reduce impacts below significance. BMPs are actions required by statutes or regulations, or to fulfill permitting requirements that reduce potential impacts. Environmental protection measures are those actions that are used to minimize impacts that are not required as a part of statutes, regulations, or to fulfill permitting requirements, but are typically measures taken during design and construction phases of a project to reduce impacts on the environment. None of the BMPs or environmental protection measures described are needed to bring any impacts below the threshold of significance.

The following text presents the criteria that would constitute a significant environmental effect resulting from implementation of the No Action Alternative (see **Section 4.2**), or the Proposed Action. The same significance criteria are also applied to potential cumulative effects (see **Section 5**) of implementing the Proposed Action in conjunction with past, present, or reasonably foreseeable future actions.

Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors that are potentially exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels). Projected noise effects are evaluated quantitatively and qualitatively.

Noise Evaluation Criteria

Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors that are potentially exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels). Projected noise effects are evaluated quantitatively and qualitatively. A proposed action could have a significant effect if noise-sensitive areas experience an increase in noise exposures at or above a DNL of 65 dBA.

Land Use Evaluation Criteria

The significance of potential land use effects is based on the level of land use sensitivity in areas affected by a proposed action and the compatibility of a proposed action with existing conditions. A proposed action could have a significant effect with respect to land use if any the following were to occur:

- Be inconsistent or in noncompliance with existing land use plans or policies
- Preclude the viability of existing land use
- Preclude continued use or occupation of an area
- Be incompatible with adjacent land use to the extent that public health or safety is threatened
- Conflict with planning criteria established to ensure the safety and protection of human life and property.

Air Quality Evaluation Criteria

The environmental consequences on local and regional air quality conditions near a proposed Federal action are determined based on the increases or decreases in regulated air pollutant emissions and existing conditions and ambient air quality. The evaluation criteria are dependent on whether the Proposed Action is located in an attainment, nonattainment, or maintenance area for criteria pollutants. Other evaluation

criteria include whether major New Source Review (NSR) air quality construction permitting is triggered or Title V operating permitting is triggered. Major NSR air quality permitting is divided into major NSR for nonattainment pollutants and PSD permitting for attainment pollutants. All of these evaluation criteria are discussed in the following paragraphs.

Attainment Area Pollutants. As discussed in **Section 3.3.2**, Fairchild AFB is in attainment for all criteria pollutants (SRCAA 2004). The potential impacts on NAAQS “attainment” areas would be considered significant if the net increases in these pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Exceed any evaluation criteria established by a SIP
- Emissions that represent an increase of 250 tpy for any attainment criteria pollutant or their precursors (i.e., NO_x, VOCs, CO, PM₁₀, PM_{2.5}, and SO₂)³ unless the proposed activity qualifies for an exemption under the Federal General Conformity Rule.

Although the 250 tpy stationary plus mobile source threshold is not a regulatory driven threshold, it is being applied as a conservative measure of significance in attainment areas. The rationale for this conservative threshold is that it is consistent with the threshold for a PSD major source in attainment areas.

Nonattainment or Maintenance Area Pollutants. Fairchild AFB is located in an area that is in attainment for all criteria pollutants; therefore, there are no nonattainment or maintenance area air quality evaluation criteria applicable to the Proposed Action.

PSD and Title V Permits. The following factors were considered in determining the significance of air quality impacts with respect to PSD permitting requirements prior to construction:

- If the net increase in stationary source emissions qualifies as a PSD major source. This includes 250 tpy emissions per attainment pollutant (40 CFR 52.21(b)(1) and 40 CFR 52.21(a)(2), or 75,000 tpy emissions of GHGs.
- If the net increase in stationary source emissions qualifies as a significant modification to an existing PSD major stationary source, (i.e., change that adds 10 to 40 tpy of criteria pollutants to the PSD major source’s potential to emit depending on the pollutant, or adding 75,000 tpy of GHGs).
- If the Proposed Action occurs within 10 kilometers of a Class I area and would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 µg/m³ or more (40 CFR 52.21[b][23][iii] and 40 CFR 52.21[a][2]).

The following factor was considered in determining the significance of air quality impacts with respect to Title V operating permit requirements (40 CFR 71.2 and 40 CFR 71.3):

- If the increase in stationary source emissions under the Proposed Action qualifies as a Title V major source by itself, or the resulting stationary source emissions after the change exceed the Title V thresholds. This includes the potential to emit 100 tpy for criteria pollutants (lower

³ The Pb threshold would be 250 tpy; however, since emissions sources at an AFB have low Pb emissions, a comparison to this threshold was not included in this IDEA.

thresholds apply in nonattainment areas and depend on the pollutant and severity of nonattainment), 10 tpy of any individual HAP, 25 tpy of all HAPs combined, or 100,000 tpy of GHGs.

Only operational emissions increases were evaluated for PSD and Title V permitting impacts, as construction activity emissions are typically not subject to the significance criteria discussed in the preceding paragraphs for these permit programs.

Geological Resources Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential effects of a proposed action on geological resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development. A proposed action could have a significant effect with respect to geological resources if any the following were to occur:

- Alteration of the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability
- Changes to the soil composition, structure, or function within the environment.

Water Resources Evaluation Criteria

Evaluation criteria for effects on water resources are based on water availability, quality, and use; and associated regulations. A proposed action could have a significant effect with respect to water resources if any the following were to occur:

- Substantially reduce water availability or supply to existing users
- Overdraft groundwater basins
- Exceed safe annual yield of water supply sources
- Substantially affect water quality adversely
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

Biological Resources Evaluation Criteria

The significance of effects on biological resources is based on the following:

- The importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource
- The proportion of the resource that would be affected relative to its occurrence in the region
- The sensitivity of the resource to proposed activities
- The duration of ecological ramifications
- The “taking” of threatened or endangered species
- Jeopardizing threatened or endangered species habitat.

Effects on biological resources would be considered significant if species or habitats of high concern are adversely affected over relatively large areas. Effects would also be considered significant if disturbances caused reductions in population size or distribution of a species of high concern.

Ground disturbance and noise associated with construction can directly or indirectly cause adverse effects on biological resources. Direct effects from ground disturbance are evaluated by identifying the types and locations of potential ground-disturbing activities in correlation to important biological resources. Habitat removal and damage or degradation of habitats could be adverse effects associated with ground-disturbing activities.

Cultural Resources Evaluation Criteria

Under Section 106 of the NHPA, “An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.” Specifically, adverse effects on historic properties can include any of the following:

- Physically altering, damaging, or destroying all or part of a resource
- Altering characteristics of the surrounding environment that contribute to the resource’s significance
- Introducing visual or audible elements that are out of character with the property or that alter its setting
- Neglecting the resource to the extent that it deteriorates or is destroyed
- The sale, transfer, or lease of the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property’s historic significance.

For the analysis of the potential effects of a proposed action on archaeological resources, the APE includes both direct impacts from ground-disturbing activity, and indirect impacts resulting from undertakings outside the boundaries of the location. Impacts on cultural resources include potential impacts on buildings, sites, structures, districts, and objects eligible for, or included in the NRHP; cultural items as defined in the NAGPRA; archaeological resources as defined by the Archaeological Resources Protection Act of 1979; and archaeological artifact collections and associated records as defined by 36 CFR part 79.

Under NEPA, impacts on cultural resources are assessed as short-term or long-term; direct or indirect; and minor, moderate, or significant. Under Section 106 of the NHPA, a proposed action could have no effect, no adverse effect, or an adverse effect on historic properties.

Socioeconomics and Environmental Justice Evaluation Criteria

Construction expenditures are assessed in terms of direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary greatly, depending on the location of a proposed action. For example, implementation of an action that creates ten employment positions might go unnoticed in an urban area, but could have considerable impacts in a rural region. If potential socioeconomic changes were to result in substantial shifts in population trends or a decrease in regional spending or earning patterns, those effects would be considered adverse. A proposed action could have a significant effect with respect to the socioeconomic conditions in the surrounding ROI if the following were to occur:

- Change the local business volume, employment, personal income, or population that exceeds the ROI’s historical annual change

- Adversely affect social services or social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates
- Disproportionately impact minority populations or low-income populations.

Infrastructure Evaluation Criteria

Effects on infrastructure are evaluated based on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, sanitary sewer and wastewater systems, and transportation patterns and circulation. Impacts might arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to installation activities. An effect might be considered adverse if a proposed action exceeded capacity of a utility. A proposed action could have a significant effect with respect to infrastructure if the following were to occur:

- Exceeded capacity of a utility
- A long-term interruption of the utility
- A violation of a permit condition
- A violation of an approved plan for that utility.

Hazardous Materials and Wastes Evaluation Criteria

A proposed action could have a significant effect with respect to hazardous materials and wastes if the following were to occur:

- Noncompliance with applicable Federal and state regulations as a result of a proposed action
- Disturbance or creation of contaminated sites resulting in adverse effects on human health or the environment
- Established management policies, procedures, and handling capacities could not accommodate the proposed activities, impacting fuel management.

Safety Evaluation Criteria

Any increase in safety risks would be considered an adverse impact on safety. A proposed action could have a significant effect with respect to health and safety if the following were to occur:

- Substantially increase risks associated with the safety of construction personnel, contractors, or the local community
- Substantially hinder the ability to respond to an emergency
- Introduce a new health or safety risk for which the installation is not prepared or does not have adequate management and response plans in place.

4.2 Environmental Consequences of the No Action Alternative

Under the No Action Alternative, Fairchild AFB would not implement the selected projects under the Proposed Action as proposed in the Fairchild AFB General Plan, LRDP, SERE School Master Plan, and resource management plans (i.e., INRMP and ICRMP), which would result in the continuation of existing conditions as described in **Section 3**. No direct changes in environmental effects would be expected on the noise environment, land use, air quality, geological resources, water resources, biological resources,

cultural resources, socioeconomics and environmental justice, infrastructure, hazardous materials and wastes, or safety. Although under the No Action Alternative the selected projects would not be implemented, it is anticipated that future development would still continue to occur, but those development projects would be analyzed through the preparation of project-specific environmental documentation, as appropriate.

4.3 General Environmental Consequences of the Proposed Action by Resource Area

4.3.1 Noise

Construction Noise. No significant impacts on the noise environment would be expected from construction or demolition activities associated with the Proposed Action. Implementation of the selected projects would be expected to result in short-term, minor, adverse impacts on the noise environment from equipment that would be used. Selected projects would require grading, paving, demolition, and construction. All of the selected projects would occur on Fairchild AFB property, in the north-central and southern regions of the installation. The north-central region of the installation consists primarily of industrial, community, and aircraft operations and maintenance facilities. The southern region of the installation consists primarily of industrial facilities and open space. The selected projects would be implemented at different times and locations over the next 5 FYs. It is possible that several projects would occur simultaneously but would not be expected to result in significant, adverse impacts.

Individual equipment used during construction and demolition activities would be expected to result in noise levels comparable to those shown in **Table 3-2**. In general, noise from construction and demolition activities varies depending on the type of equipment being used, the area that the action would occur in, and the distance from the noise source. To predict how these activities would impact adjacent populations, noise from the probable equipment was estimated. For example, as shown in **Table 3-2**, construction and demolition (i.e., clearing and grading) usually involves several pieces of equipment (e.g., bulldozers and trucks) that can be used simultaneously. Under the Proposed Action, the cumulative noise from equipment, during the busiest day, was estimated to determine the total impact of noise from construction and demolition activities at a given distance. Examples of expected construction and demolition noise during daytime hours at specified distances are shown in **Table 4-1**. These sound levels were estimated by adding the noise from several pieces of equipment and then calculating the decrease in noise levels at various distances from the source of the noise.

Table 4-1. Estimated Noise Levels from Construction and Demolition Activities

Distance from Noise Source (feet)	Estimated Noise Level
50	90 to 94 dBA
100	84 to 88 dBA
150	81 to 85 dBA
200	78 to 82 dBA
400	72 to 76 dBA
800	66 to 70 dBA
1,500	< 64 dBA

Noise generation would last only for the duration of construction and demolition activities and could be minimized through measures such as restricting these activities to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.), and using equipment with exhaust mufflers. The closest off-installation populations are more than 1,000 feet from project areas associated with the Proposed Action. The short-term increase in noise levels resulting from the selected projects would not cause significant, adverse impacts on the surrounding populations.

Operational Impacts. No long-term, adverse impacts on the noise environment would be expected from implementation of the Proposed Action. The majority of the selected projects would not be encompassed by the noise contours. The only activities associated with the selected projects that would be within the noise contours would be demolition and infrastructure activities. Since these selected projects would not result in populations exposed to long-term impacts from aircraft noise, no adverse impacts would be expected.

4.3.2 Land Use

The Proposed Action would occur entirely on Fairchild AFB property. In general, the selected projects would comply with, and be consistent with, existing and future installation land use plans and policies, as identified in the Fairchild AFB General Plan. Therefore, no adverse impacts on land use would be expected from implementation of the Proposed Action. If a selected project required a change in land use designation, short-term, minor, adverse impacts could be expected. Some of the selected projects would be constructed within ERP sites or QD arcs, and, therefore, would be required to adhere to the appropriate land use restrictions when necessary. In addition, all projects taking place within an area with established LUCs would be subject to the Work Clearance Request process. Beneficial impacts on land use would be expected from efficient use of installation land, particularly through demolition of aging, inadequate, and underused facilities. Demolition of facilities would also be consistent with the goal of reducing installation physical plant footprint as found in the “20/20 by 2020” initiative (see **Section 1.2.1**).

4.3.3 Air Quality

Emissions Estimates. Short-term, minor, adverse impacts on air quality would be expected from implementation of the Proposed Action. The construction and demolition activities associated with the Proposed Action would generate air pollutant emissions from site-disturbing activities such as grading, filling, compacting, and trenching; and the operation of construction and demolition equipment and haul trucks transporting construction supplies, excavation material, and demolition debris. Construction and demolition activities would also generate particulate emissions as fugitive dust from ground-disturbing activities and from the combustion of fuels in construction and demolition equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the work phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction and demolition site is proportional to the area of land being worked and the level of activity. Construction and demolition activities would incorporate environmental protection measures (e.g., frequent use of water for dust-generating activities) to minimize fugitive particulate matter emissions. Additionally, the work vehicles are assumed to be well-maintained and could use diesel particle filters to reduce emissions. Construction and demolition workers commuting daily to and from the job site in their personal vehicles would also result in criteria pollutant air emissions.

No impacts on air quality would be expected from the use of new boilers and furnaces installed in the newly constructed buildings. The new boilers and furnaces would result in an increase in air emissions at Fairchild AFB; however, this increase would be offset by the removal of older, less energy-efficient, and

more emissions-intensive boilers and furnaces from the installation. Any overall increase in long-term emissions would not be expected to be significant.

The SRCAA could require a Notice of Construction for the selected projects if certain construction equipment (e.g., concrete batch plant) determined to be temporary stationary sources have not previously operated in Spokane County. Thereafter, an approved Notice of Intent to Install and Operate a Temporary Stationary Source would be required. Additional permitting could be required if the sources remain on site for more than 12 consecutive months (SRCAA 2007). A source requiring a Notice of Construction requires a toxic air pollutant review, as described in WAC 173-460, *Controls for New Sources of Toxic Air Pollutants*. The SRCAA might require a toxic air pollutant review in accordance with WAC 173-460 and dispersion modeling could be required to demonstrate compliance for pollutants exceeding small-quantity emissions rate thresholds. The small-quantity emissions rate is defined in WAC 173-460-020 as a level of emissions below which dispersion modeling is not required to demonstrate compliance with acceptable source impact levels. The SRCAA might require a toxic air pollutant review in accordance with WAC 173-460 for any new source emitting toxic air pollutants. It is anticipated that none of the selected installation development projects would require the temporary placement of construction equipment considered to be a temporary stationary source. Air emissions from the Proposed Action are summarized in **Table 4-2** by the FY in which they would be produced. **Appendix D** contains a summary of the air emissions calculations and the assumptions used to estimate the air emissions.

General Conformity. The portion of Spokane County where Fairchild AFB is located has been designated as unclassified/attainment for all criteria pollutants. Therefore, the General Conformity Rule does not apply to the Proposed Action and a General Conformity determination is not required.

Nonattainment NSR, PSD and Title V Air Permitting. Fairchild AFB is not located within a nonattainment area for any pollutant; therefore, nonattainment NSR permitting would not apply. Emissions increases associated with the Proposed Action due to constructing new stationary sources would be expected to be somewhat offset by the removal of similar sources. It is anticipated that there would be a decrease in the overall occupied building square feet and a decrease in stationary source emissions from boilers/heaters and emergency generators. Therefore, the emissions levels from stationary sources would not be expected to be significant enough for Fairchild AFB to reach the PSD major source threshold of 250 tpy for each criteria pollutant. Fairchild AFB currently maintains Voluntary Emissions Limits Order to limit facilitywide emissions of NO_x to 90 tpy. Actual emissions for NO_x and other criteria pollutants would be significantly below this level. PSD permitting is not expected to be triggered for the Proposed Action. In addition, Title V permitting is not expected to be triggered, as the potential to emit is not expected to reach 100 tpy for any criteria pollutant.

Greenhouse Gas Emissions. The Proposed Action would contribute directly to emissions of GHGs from the combustion of fossil fuels. Because CO₂ emissions account for approximately 92 percent of all GHG emissions in the United States, they are used for analyses of GHG emissions in this IDEA. The U.S. Department of Energy, Energy Information Administration estimates that in 2009 gross CO₂ emissions in the State of Washington were 77.5 million metric tons and in 2009 gross CO₂ emissions in the entire United States were 5,425.6 million metric tons (DOE/EIA 2011). **Table 4-3** summarizes the anticipated amount of CO₂ emissions by FY from the Proposed Action. For all 5 FYs, the Proposed Action would represent a negligible contribution (less than 0.010 percent) towards statewide GHG inventories and an even less (less than 0.0002 percent) toward national GHG inventories.

Table 4-2. Estimated Annual Air Emissions from the Proposed Action

Project*	NO_x tpy	VOC tpy	CO tpy	SO₂ tpy	PM₁₀ tpy	PM_{2.5} tpy	CO₂ tpy
Project D1	5.213	0.669	3.937	0.416	7.387	1.068	768.894
Project D3	0.362	0.112	0.904	0.024	0.370	0.058	133.825
Project I1	4.826	0.451	2.724	0.377	1.146	0.417	620.125
Project I2	17.299	1.735	10.102	1.407	67.908	7.831	2,263.309
Project NI1 (Phase I)	0.033	0.033	0.297	0.0004	0.003	0.002	39.445
Project S1	0.054	0.053	0.459	0.0009	0.010	0.004	60.275
Total 2013 Emissions	27.787	3.053	18.423	2.2253	76.824	9.38	3,885.87
Project C1	5.889	1.395	5.788	0.459	4.546	0.941	906.053
Project NI1 (Phase II)	0.033	0.033	0.297	0.0004	0.003	0.002	39.445
Total 2014 Emissions	5.922	1.428	6.085	0.459	4.549	0.943	945.498
Project C2	6.053	0.806	4.357	0.472	2.199	0.618	864.761
Project C3	5.834	0.876	4.402	0.454	2.506	0.645	846.390
Project C4	5.509	0.763	3.690	0.431	1.220	0.491	746.595
Total 2015 Emissions	17.396	2.445	12.449	1.357	5.925	1.754	2,457.75
Project D2	0.882	0.171	1.218	0.066	1.153	0.170	200.204
Total 2016 Emissions	0.882	0.171	1.218	0.066	1.153	0.170	200.204
Project D4	3.880	0.506	3.005	0.309	5.493	0.794	581.706
Project C5	5.604	0.667	3.648	0.438	1.500	0.512	763.666
Project C6	11.351	2.306	10.268	0.899	13.026	2.186	1,687.211
Total 2017 Emissions	20.835	3.479	16.921	1.646	20.019	3.492	3,032.58
Stationary Source plus Mobile Source Significance Criteria	250	250	250	250	250	250	NA

Note: * Unless otherwise noted, emissions from each project are for construction and demolition.

Table 4-3. Estimated CO₂ Emissions from the Proposed Action

Year	CO₂ (tpy)
2013 Emissions	3,885.87
2014 Emissions	945.498
2015 Emissions	2,457.75
2016 Emissions	200.204
2017 Emissions	3,032.58

The calculated increases in GHG emissions from construction activities would be a maximum of 3,886 tons in FY 2013. The overall increases in potential GHG emissions from stationary sources has not been calculated but is expected to be well below the PSD and Title V permitting thresholds for GHGs. The resulting installationwide stationary GHG emissions including existing sources and the Proposed Action is expected to be below the 100,000 tpy Title V major source threshold for GHGs; however, Fairchild AFB would calculate installationwide potential GHG stationary source emissions to confirm this is true.

4.3.4 Geological Resources

Topography. Long-term, negligible, adverse impacts would be expected on the natural topography as a result of demolition, site preparation (i.e., grading, excavating, and recontouring), and construction activities associated with the Proposed Action. Because Fairchild AFB is fairly level in elevation, impacts would not be considered significant.

Geology. No impacts on geology would be anticipated from implementation of the Proposed Action, as no geological resources would be disturbed.

Soils. Long-term, minor, adverse impacts on soils would be expected from implementation of the Proposed Action. The primary impacts would include soil compaction, disturbance, and erosion; however, implementation of environmental protection measures would further minimize adverse impacts. Compaction of soils would disturb and modify the soil structure. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be eliminated in those areas within the footprints of buildings, pavements, and roadways. Loss of soil structure due to compaction from foot and vehicle traffic could change drainage patterns; however, impacts would be minimized with implementation of soil decompaction methods such as aeration.

Site-specific soil testing would be conducted prior to, or during, commencement of the Proposed Action to determine if limitations exist and to determine appropriate environmental protection measures to be implemented to minimize adverse impacts. Therefore, no significant adverse impacts on soils would be expected. Environmental protection measures could include installing silt fencing and sediment traps, applying water to disturbed soil, and revegetating disturbed areas upon completion of construction and demolition activities. Implementation of environmental protection measures would minimize the potential for and extent of contamination associated with the spill.

Geological Hazards. No significant impacts would be expected. All new construction associated with the Proposed Action would be designed consistent with requirements established in UFC 3-310-03, *Seismic Design for Buildings*, and EO 12699, *Seismic Safety*, which would reduce the potential for adverse impacts associated with structural failure during or following a seismic event.

4.3.5 Water Resources

Groundwater. Short-term, negligible to minor, adverse, and long-term, beneficial impacts on groundwater would be expected from construction and demolition activities associated with the Proposed Action. Implementation of Base Design Standards and other applicable codes and ordinances would minimize the potential for runoff and spill-related impacts on groundwater. Base Design Standards emphasize compliance with the Construction General Permit as regulated by the USEPA. Upon completion of the selected projects, there would be an overall decrease in impervious surface area, which would result in beneficial impacts on groundwater.

Surface Water. Short-term, negligible to minor, adverse, and long-term, beneficial impacts on surface water would be expected from implementation of the Proposed Action. Negligible to minor increases in

the conveyance of nonpoint source pollutants in runoff to storm water drainage ditches could occur from construction and demolition activities. With adherence to proper engineering practices, potential short-term, adverse impacts would be minimized further. In addition, implementation of Base Design Standards and other applicable codes and ordinances would minimize the potential for runoff and spill-related impacts on surface water. Storm water management controls would be designed and implemented consistent with NPDES Phase II permit requirements and Base Design Standards to minimize potential adverse impacts on surface water. Upon completion of the selected projects, there would be an overall decrease in impervious surface area, which would result in beneficial impacts on surface water. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments.

Wetlands. Projects D1 and NI1 would involve construction activities in wetland areas; therefore, these projects would require a FONPA. Project D1 entails demolition of the ammunition storage facilities, which are within the 60-foot wetland buffer area of Wetland 11A-32. The 60-foot buffer is based on the Spokane County Critical Area Ordinance, Section 11.20.050(C)(1)(c). Project NI1 entails prairie restoration and long-term weed control in wetland areas.

Short-term, minor, adverse impacts could be expected from impacts on wetlands from implementation of Projects D1 and NI1. Potential adverse impacts would be minimized by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy. In addition, potential impacts on wetlands would be reduced through design, siting, and proper implementation of environmental protection measures. These would include the following:

- Flagging the boundary of the wetland to avoid unnecessary construction equipment and personnel from entering the wetland area
- Phasing construction activities so that smaller areas of land are disturbed at the same time to limit soil exposure
- Installing sedimentation basins and detention or retention ponds to contain sediment and runoff in the construction area
- Following the procedures in the Spill Prevention, Control, and Countermeasures (SPCC) Plan to contain and clean up spills of fuels and other potentially hazardous materials quickly
- Developing an Erosion-and-Sediment-Control Plan (ESCP)
- Developing a construction-grading plan in order to divert storm water runoff away from nearby wetlands
- Using docks or boardwalks across wetland areas, rather than filling in the wetland area to create a pathway
- Minimizing the use of heavy machinery in wetlands
- Restricting construction activities to drier periods of the year
- Disposing of construction debris in a non-wetland area.

Proper implementation of these measures would ensure that no impacts on surrounding wetlands or other waters of the United States would occur. Therefore, no significant impacts would be expected. Correspondence with regulatory and resource agencies prior to commencing any ground-breaking construction activities would be completed and permits would be obtained, as necessary.

4.3.6 Biological Resources

Vegetation. Short- and long-term, negligible to minor, adverse impacts on vegetation would be expected. Short-term impacts would be associated with temporary disturbances (e.g., trampling and limited vegetation removal) on adjoining lands and the use of heavy equipment during construction and demolition activities associated with the Proposed Action. Long-term impacts would be associated with the permanent removal of trees and vegetation. Following construction and demolition activities, disturbed areas would be revegetated and landscaped in accordance with Fairchild AFB standards.

Wildlife. Short-term, negligible to minor, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with construction and demolition activities and heavy equipment use during implementation of the Proposed Action. However, during construction and demolition activities it is anticipated that wildlife would avoid the project areas and would use other areas of the installation. In addition, long-term, negligible to minor, adverse impacts on wildlife would be expected from any permanent habitat loss.

No impacts on migratory birds would be expected from implementation of the Proposed Action. Noise generated during construction and demolition activities could result in temporary disturbance to migratory birds. However, during construction and demolition activities, it is anticipated that migratory birds would avoid the project areas and would use other areas of the installation.

The MBTA and EO 13186 require Federal agencies to minimize or avoid impacts on migratory birds listed in 50 CFR 10.13. If design and implementation of a Federal action cannot avoid measurable adverse impacts on migratory birds, EO 13186 requires the responsible agency to consult with the USFWS and obtain a Migratory Bird Depredation Permit. Selected projects associated with the Proposed Action would be conducted in a manner to avoid adverse effects on migratory birds to the extent practicable. While mitigation measures are not required, the following environmental protection measures are recommended for reduction or avoidance of impacts on migratory birds that could occur within the project areas:

- Any groundbreaking construction activities or tree-cutting activities would be performed before migratory birds return to Fairchild AFB or after all young have fledged to avoid incidental take.
- If construction is scheduled to start during the period when migratory birds are present, a site-specific survey for nesting migratory birds would be performed immediately prior to construction by a qualified biologist.
- If nesting birds are found during the survey, buffer areas would be established around nests. Construction would be deferred in buffer areas until birds have left the nest. Confirmation that all young have fledged would be made by a qualified biologist.

Protected and Sensitive Species. There are several Federal- and state-listed and sensitive species occurring on Fairchild AFB (see **Table 3-7**). However, most of the selected projects associated with the Proposed Action would be within developed portions of the installation and would not have any effect on Federal- or state-listed species or sensitive habitat. The only selected project that would occur in protected areas of the installation is Project N11, which entails prairie restoration and long-term weed control in the Flora Special Species Management Area. This area of the installation is known to contain Spalding's catchfly and its associated habitat. Spalding's catchfly and its associated habitat are protected on Fairchild AFB; however, habitat throughout the installation is not known to be critical for any of the Federal- and state-listed or sensitive species. In February 2007, Fairchild AFB submitted a BA to the USFWS to address weed control and habitat protection using herbicide treatment within a small conservation area for Spalding's catchfly on Fairchild AFB. The BA concluded that these activities "may affect, but not likely to adversely affect" the population and may positively affect the habitat increasing

the potential for further recovery. In May 2007, Fairchild AFB received concurrence from the USFWS that the proposed activities, as described in the BA, are “not likely to adversely affect” Spalding’s catchfly. In accordance with the BA, mitigation and monitoring measures associated with weed control and habitat protection further serve to minimize the potential to affect Spalding’s catchfly. The following are rangewide recovery actions proposed by the Draft Recovery Plan for Spalding’s catchfly, as detailed in the BA:

- Habitat management plans should manage for impacts on Spalding’s catchfly and its associated habitat
- Invasive nonnative plant control and management should be implemented at all Spalding’s catchfly sites, while avoiding impact on Spalding’s catchfly
- Invasive nonnative plant control should occur when Spalding’s catchfly is dormant (i.e., October through March), when possible
- Set distances should be developed for specific herbicides applied near Spalding’s catchfly sites
- Guidelines should be developed for applying herbicides when the target invasive nonnative species is susceptible but when the Spalding’s catchfly is not susceptible
- Pest management programs should be integrated into habitat management plans for the Spalding’s catchfly
- Invasive nonnative plant control and management should be conducted at all key conservation areas and other populations, as necessary
- Invasive nonnative plant control and management should be coordinated with the appropriate Federal and state agencies
- Outreach activities should be conducted for individuals or organizations that are involved in controlling and managing invasive nonnative plants
- Surveys for Spalding’s catchfly should be conducted before invasive nonnative plant control measures are implemented
- Guidelines should be developed and implemented for herbicide applications around Spalding’s catchfly.

4.3.7 Cultural Resources

A list of facilities on Fairchild AFB at or approaching 50 years old by 2018 is provided in **Appendix C**. Implementation of the Proposed Action would result in an adverse effect on NRHP-eligible properties at Fairchild AFB under Section 106 of the NHPA. Fairchild AFB, in coordination with the Washington SHPO, developed an MOA for demolition activities involving NRHP-eligible structures. In addition, Fairchild AFB consulted with the ACHP regarding the “adverse effect” determination for these demolition activities; however, the ACHP has chosen not to participate in the consultation process pursuant to 36 CFR § 800.6(a)(1)(iii).

The MOA is provided in **Appendix B**. In accordance with the MOA, the USAF would ensure the following stipulations are implemented for demolition of NRHP-eligible properties:

- *Building-Specific Mitigation.* The hangars along the NRHP-eligible Flight Line Historic District would be documented, via a Washington Department of Archaeology and Historic Preservation (DAHP) Level II Report, as a permanent record of these historic properties. Prior to

commencement of demolition activities, the USAF would consult with the Washington SHPO to identify the best representative examples of the variations of these pre-fabricated structures.

- *Flightline-Specific Mitigation.* A diorama (i.e., three-dimensional full-size or miniature model) of the core facilities in the Flight Line Historic District (approximately 20 buildings) would be developed. The exact buildings and features to be included would be determined in coordination with DAHP. The diorama would be featured in the new Wing Headquarters facility.
- *Public Education and Display.* A professional display (approximately 24 ft²) would be developed and displayed in the lobby of the Fairchild AFB Visitor's Center. The display would highlight the history of the installation with special emphasis on the installation's role and development during the Cold War to include the B-52 aircraft that were homebased at Fairchild AFB and the KC-135 aircraft's role in supporting the installation's long-range missions. An additional professional display (approximately 30 ft²) would be developed and displayed in the Customer Service Area of the Force Support Squadron. The display would highlight the history and role of Fairchild AFB and the B-52 and KC-135 aircraft throughout the Cold War Era. A video (approximately 10 minutes), detailing the history of Fairchild AFB, would be developed using both historical and present day pictures. The video could be used in conjunction with mission briefings provided to visiting dignitaries, community members, and other installation visitors and distributed to any interested member of the public. Finally, the installation's public Web site would be supplemented to feature documents developed under Stipulation I, along with historical photos and other facility surveys previously prepared.
- *Duration.* The MOA would be null and void if its stipulations are not carried out within 5 years from the date of its execution. At such time, and prior to commencement of demolition activities, the USAF would either (1) execute a MOA pursuant to 36 CFR § 800.6; or (2) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7.
- *Post-Review Discoveries.* During demolition activities, if human remains are encountered, all work in the area would immediately halt and SOPs for inadvertent find would be implemented. During demolition activities, if previously unknown archaeological sites are encountered, the procedures outlined in the MOA would be followed.
- *Monitoring and Reporting.* The installation CRM would submit a report to the Washington SHPO within 12 months of the effective date of the MOA and every 12 months thereafter, until all demolition activities are completed or the MOA is terminated.
- *Dispute Resolution.* Should any signatory or concurring party to the MOA object to any actions proposed or the manner in which the terms of the MOA are implemented, the USAF would consult with such party to resolve the objection. If the USAF determines that any such objection cannot be resolved, the USAF would follow procedures outlined in the MOA.
- *Amendments.* The MOA can be amended when such an amendment is agreed to in writing by all signatories.
- *Termination.* If any signatory to the MOA determines that its terms cannot be carried out, the party would immediately consult with other parties to attempt to develop an amendment.
- *Anti-Deficiency Act.* The Anti-Deficiency Act (31 U.S.C. § 1341) prohibits Federal agencies from incurring an obligation of funds in advance of, or in excess of, available appropriations. If compliance with the Anti-Deficiency Act alters or impairs the USAF's ability to implement the stipulations of the MOA, the USAF would consult with the signatories.

The ICRMP for Fairchild AFB states that in areas where the archaeological potential is low, construction personnel involved in excavation activities would be briefed by the CRM regarding the kind of remains to

be aware of, and would be required to report any cultural resources encountered (FAFB 2005a). If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP and stipulations listed in the MOA would be implemented. In addition, the CRM would immediately contact interested Native American tribes. If needed, documentation and an evaluation of the NRHP eligibility of the find would be prepared and forwarded to the Washington SHPO. If the find is considered NRHP-eligible, the CRM would prepare findings of impact. If the impact would be adverse, a plan for mitigating impacts of the activity on the site would be prepared in collaboration with Native American tribes, the Washington SHPO, and ACHP. Once this plan has been implemented, construction activities in the project area could resume.

4.3.8 Socioeconomics and Environmental Justice

Short-term, beneficial impacts on the local economy would be expected from implementation of the Proposed Action due to expenditures associated with construction and demolition activities. Spokane County, Washington, contains approximately 6,300 construction workers, which collectively, would be anticipated to meet the needs of the Proposed Action. Short-term increases in local business volume and employment within the ROI would be expected. The use of local construction workers would produce increases in local sales volumes, payroll taxes, and the purchases of goods and services resulting in beneficial increases in the local economy. There would be no anticipated change to the number of personnel employed or stationed at Fairchild AFB as a result of the Proposed Action; therefore, no significant impacts on demographics or social services and conditions would be expected.

Implementation of the Proposed Action would occur entirely on Fairchild AFB. Possible adverse impacts from construction and demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

4.3.9 Infrastructure

No significant impacts on infrastructure at Fairchild AFB would be expected from implementation of the Proposed Action. Long-term, beneficial impacts would be expected from infrastructure improvement projects and the consolidation of functions and operations at Fairchild AFB. In addition, all new facilities constructed would be designed to achieve LEED Silver certification, which would promote the minimization of energy and water consumption and optimization of solid waste management and storm water management techniques.

Airfield. Long-term, beneficial impacts would be expected on airfield pavements from implementation of the Proposed Action. Upon completion of construction and demolition activities, the condition of several areas of the airfield would be improved and facilities would be collocated with like services, which would allow for continued mission support.

Transportation. Short-term, minor, adverse impacts on the transportation network would be expected from implementation of the Proposed Action. Potential impacts would be associated with increased traffic and parking requirements from construction vehicles and equipment. Construction and demolition activities would require the delivery of materials to, and removal of debris from, project areas; however, construction traffic would compose a small percentage of the total existing traffic on the installation. Many of the heavy construction vehicles would be driven to the project areas and kept on site for the duration of construction and demolition activities, resulting in relatively few additional trips. The selected projects would occur at different times and locations at Fairchild AFB over a 5-year period, which would further reduce construction traffic. Any potential increases in traffic volume associated with construction and demolition activities would be temporary.

Long-term, minor, adverse impacts on traffic would be expected due to possible localized traffic increases from the consolidation of facilities; however, impacts on the overall parking availability and traffic volume on-installation would not be expected.

Electrical Supply. Short-term service interruptions could be experienced by adjacent buildings when the existing utilities are disconnected from or connected to the electrical distribution system on the installation. However, the discontinuation of electrical services would be temporary and coordinated with area users. Long-term, beneficial impacts on electrical systems would be expected from the demolition of aged facilities with outdated electrical systems and construction of new facilities with updated, energy-efficient electrical systems. Any long-term increases in electricity demand upon completion of new construction would be anticipated to be offset by the cessation of use in demolished facilities.

Central Heating System. No impacts on the central heating system would be expected from implementation of the Proposed Action. The only central heating system currently in use on-installation services three facilities in the SERE School, which are not included under the Proposed Action.

Liquid Fuel Supply. No impacts on the liquid fuel system would be expected from implementation of the Proposed Action.

Natural Gas Supply. Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the natural gas system would be expected from implementation of the Proposed Action. Short-term natural gas interruptions could be experienced when facilities are disconnected from or connected to the natural gas system on the installation. However, the discontinuation of natural gas services would be temporary and coordinated with area users. Long-term, beneficial impacts on the natural gas system would be expected from the demolition of aged facilities with outdated systems and the construction of new facilities with updated, energy-efficient systems. Any long-term increases in natural gas demand upon completion of new construction would be anticipated to be offset by the cessation of use in demolished facilities.

Water Supply. Short-term, negligible to minor, adverse, and long-term, beneficial impacts on water supply would be expected from implementation of the Proposed Action. Short-term water supply interruptions could be experienced when facilities are disconnected from or connected to the potable water supply system on the installation. However, the discontinuation of potable water would be temporary and coordinated with area users. Long-term, beneficial impacts on water supply would be expected from the demolition of aged facilities with outdated systems and the construction of new facilities with updated, energy-efficient systems. Any long-term increases in potable water demand upon completion of new construction would be anticipated to be offset by the cessation of use in demolished facilities.

Sanitary Sewer and Wastewater System. Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the sanitary sewer and wastewater system would be expected from implementation of the Proposed Action. Short-term interruptions in sanitary sewer and wastewater treatment could be experienced when facilities are disconnected from or connected to the sanitary sewer wastewater systems on the installation. However, the discontinuation of sanitary sewer and wastewater treatment would be temporary and coordinated with area users. Long-term, beneficial impacts on the sanitary sewer and wastewater system would be expected from the demolition of aged facilities with outdated systems and the construction of new facilities with updated, energy-efficient systems. Any long-term increases in demand for sanitary sewer and wastewater treatment upon completion of new construction would be anticipated to be offset by the cessation of sanitary sewer and wastewater treatment in demolished facilities.

Storm Water System. Short-term, negligible, adverse impacts would be expected from implementation of the Proposed Action due to vegetation removal and compaction of surrounding soils under the weight of construction equipment, which would result in increased soil erosion and transport in storm water runoff during construction activities. Long-term, beneficial impacts on the storm water system would be expected from an overall net decrease in impervious surface area upon completion of the Proposed Action. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. In addition, aged facilities with outdated systems would be demolished and new facilities with updated, energy-efficient systems would be constructed, which would result in an overall decrease in the demand on storm water management.

Communications. Short-term, negligible to minor, adverse, and long-term, beneficial impacts would be expected from implementation of the Proposed Action. Short-term interruptions of communications could be experienced when facilities are disconnected from or connected to the communications system on the installation. However, the discontinuation of communications would be temporary and coordinated with area users. Long-term, beneficial impacts on the communications system would be expected from the demolition of aged facilities with outdated systems and the construction of new facilities with updated, energy-efficient systems.

Solid Waste Management. Short-term, minor, adverse impacts would be expected from increased construction and demolition debris generated as a result of implementation of the Proposed Action. Solid waste generated from construction and demolition activities would include building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), and lumber. Contractors would be required to recycle construction and demolition debris to the maximum extent practicable in accordance with installation policy, thereby diverting it from landfills. The contractor would dispose of non-recyclable construction and demolition debris at an offsite permitted landfill facility in the vicinity of Fairchild AFB. It is not anticipated that the increase in solid waste disposal would exceed existing capacities. As indicated in **Table 4-4**, approximately 69,987 tons of construction and demolition debris would be generated as a result of implementing the Proposed Action (USEPA 2009). Uncontaminated construction and demolition debris (e.g., concrete, asphalt) would be ground, recycled, and used for fill and roadwork, which would further limit the amount of solid waste disposed of off site. Upon completion of the Proposed Action, it is anticipated that the amount of solid waste generated would be the same as existing conditions.

Table 4-4. Amount of Construction and Demolition Debris Generated

Proposed Action	Project Size (ft ²)	Multiplier (pounds/ft ²)	Total Waste Generated	
			Pounds	U.S. Tons
Demolition	874,605	158	138,187,590	69,094
Construction	230,699	4.34	1,001,234	501
Pavement Construction	783,144	1	783,144	392
			Total	69,987 tons

Source: USEPA 2009

4.3.10 Hazardous Materials and Waste

Hazardous Materials and Petroleum Products. Short-term, minor, adverse impacts associated with the use of hazardous materials and petroleum products would be expected. Several buildings that store

hazardous materials and petroleum products would be demolished under the Proposed Action. The hazardous materials and petroleum products from these facilities would be excessed or transferred to the new facilities prior to commencement of demolition activities. Construction and demolition activities would require the use of certain hazardous materials such as paints, welding gases, solvents, preservatives, sealants, and fuel. It is anticipated that the quantity of hazardous materials used during construction and demolition activities would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials and petroleum products, which would be handled in accordance with Federal, state, and USAF regulations. In accordance with AFI 32-7086, contractors would report the use of hazardous materials to the Environmental Office via the contracting officer including pertinent information (e.g., Material Safety Data Sheets) in an effort to mitigate any potential impacts associated with hazardous materials. Contractors would use environmental protection measures to prevent hazardous materials releases and ensure that any releases do not result in contamination.

Long-term, beneficial impacts associated with hazardous materials and petroleum products could occur as a result of demolition of aged facilities and construction of new facilities that would have modern hazardous material and petroleum product storage areas. Hazardous materials and petroleum products stored and used during operation and maintenance of the new facilities would be similar in type and quantity to existing conditions.

Hazardous and Petroleum Wastes. Short-term, minor, adverse impacts associated with the generation of hazardous and petroleum wastes would be expected. Several buildings that currently store hazardous and petroleum wastes would be demolished under the Proposed Action. The hazardous and petroleum wastes from these facilities would be disposed of off site or transferred to the new facilities prior to commencement of demolition activities. The quantity of hazardous and petroleum wastes generated from construction and demolition activities would be minimal and would not be expected to exceed the capacities of existing hazardous waste and petroleum waste facilities. Contractors would be responsible for the disposal of hazardous and petroleum wastes in accordance with Federal, state, and local regulations. Contractors would also be required to comply with the installation's Hazardous Waste Management Plan.

Long-term, beneficial impacts associated with hazardous and petroleum wastes could occur as a result of demolition of aged facilities and construction of new facilities that would have modern hazardous waste and petroleum waste storage areas. Hazardous and petroleum wastes generated and stored during operation and maintenance of the new facilities and infrastructure would be similar in type and quantity to existing conditions.

Storage Tanks. Long-term, beneficial impacts on ASTs and USTs within the project areas would be expected. For projects involving demolition, the storage tanks present within the project area would be replaced with modern, new storage tanks. For projects involving construction, the storage tanks would be emptied of their contents and either moved to the new facilities or replaced with new storage tanks.

Asbestos-Containing Material. Short-term, minor, adverse impacts associated with ACM could be expected. Several buildings that would be demolished under the Proposed Action are assumed to contain ACM, and therefore, would need to be surveyed for asbestos by a certified inspector prior to commencement of demolition activities. Project plans would be reviewed by Fairchild AFB civil engineering personnel to ensure appropriate measures were taken to reduce potential exposure to, and release of, asbestos. For activities involving the removal of more than 48 ft² or 10 feet of ACM, notification must be provided to the Washington State Department of Labor and Industries at least 10 working days prior to the commencement of the project (WAC 296-65-020). All ACM discovered would be removed prior to demolition and disposed of at a USEPA-approved landfill. Contractors would be

required to adhere to all Federal, state, and local regulations in addition to the Fairchild AFB management plans. USAF regulations restrict the use of ACM for new construction. Long-term, negligible, adverse impacts would be expected due to the additional disposal of ACMs in USEPA-approved landfills. However, long-term, beneficial impacts would be expected from less exposure to and maintenance of ACM due to demolition of aged buildings.

Lead-Based Paint. Short-term, minor, adverse impacts associated with LBP could be expected. Several buildings that would be demolished under the Proposed Action are assumed to contain LBP, and therefore, would need to be surveyed by a certified inspector prior to demolition activities. Facilities containing LBP can be demolished without removing the LBP; however, all LBP-contaminated construction debris would be disposed of at a USEPA-approved landfill. Contractors would be required to adhere to all Federal, state, and local regulations in addition to Fairchild AFB management plans. Long-term, negligible, adverse impacts would be expected due to the additional disposal of LBP in USEPA-approved landfills. However, long-term, beneficial impacts would be expected from less exposure to and maintenance of LBP due to demolition of aged buildings.

Polychlorinated Biphenyls. Short-term, minor, adverse impacts associated with PCBs could be expected. Several buildings that would be demolished under the Proposed Action are assumed to contain PCBs. Any potential PCB-containing equipment not labeled PCB-free or missing date-of-manufacture labels discovered within the facilities proposed for demolition would be removed and handled in accordance with Federal and state regulations and the installation's Hazardous Waste Management Plan. PCB-containing materials would be transported off-installation and disposed of at a hazardous waste disposal facility. Long-term, beneficial impacts would be expected from the removal of PCB-containing equipment due to demolition of aged buildings.

Pesticides. Short-term, minor, adverse impacts associated with pesticides would be expected due to comprehensive weed-control measures implemented at Fairchild AFB. No long-term impacts associated with pesticides would be expected. The Proposed Action would not require significant long-term change in the quantities of pesticides used or significantly alter pesticide application areas. Future pesticide applications at the selected project areas would be conducted according to Federal, state, and local regulations and the installation's Pesticide Management Plan. In addition, appropriate permits would be obtained prior to implementation of Project NI1.

Radon. Short-term, negligible, adverse impacts from radon could occur due to implementation of the Proposed Action. Construction workers could be exposed to radon during subsurface construction activities; however, they would generally be in open air, which would greatly reduce their exposure. Long-term, negligible, adverse impacts from radon would be expected due to implementation of the Proposed Action. Based on the high potential for elevated indoor radon levels in Spokane County, some of the new structures might require radon mitigation systems. Radon testing at the selected project areas could be used to determine the presence of radon and the need for a radon mitigation system.

Environmental Restoration Program. Short-term, minor to moderate, adverse impacts would be expected. Some of the selected project areas are on or adjacent to active ERP sites; therefore, there is a potential for the inadvertent discovery of soil and groundwater contamination during construction and demolition activities. If contaminated soil or groundwater from nearby ERP sites were to be encountered during construction or demolition activities, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

4.3.11 Safety

Construction Safety. Short-term, minor, adverse impacts could occur from the implementation of the Proposed Action. The short-term risk associated with construction and demolition contractors would slightly increase at Fairchild AFB during the normal workday as construction and demolition activity levels would increase. However, all construction and demolition contractors would be required to follow and implement OSHA safety standards to establish and maintain safety procedures. Selected projects associated with the Proposed Action would not pose new or unacceptable safety risks to installation personnel or activities at the installation. The selected projects would enable Fairchild AFB to meet future mission objectives at the installation and conduct or meet mission requirements in a safe operating environment. No long-term impacts on safety would be expected.

Construction workers could encounter soil or groundwater contamination as a result of an ERP site or previously unknown soil or groundwater contamination. **Section 3.11.2** describes recommendations regarding workers and healthy and safety procedures. All that would be demolished under the Proposed Action that were built before 1978 would be expected to contain ACM, LBP, and PCB-contaminated materials. These materials require appropriate characterization, removal, handling, and disposal during demolition activities by qualified personnel; however, adherence to all Federal, state, local regulations, and Fairchild AFB management plans would result in negligible impacts on safety during implementation of the Proposed Action. Long-term, beneficial impacts on safety would be expected from the removal of ACM, LBP, and PCB-contaminated materials, which would reduce exposure to personnel. All construction and demolition activities under the Proposed Action would be conducted in accordance with Federal, state, and local regulations to minimize safety hazards associated with hazardous materials, wastes, and substances.

Explosives and Munitions Safety. Short-term, minor, adverse impacts could occur during construction and demolition activities that would take place within existing QD arcs. Contractors working within a QD arc could be exposed to an increased risk of potential explosions. Through coordination with the installation Safety Office, no handling or transportation of materials would occur within QD arcs while construction workers are within these areas. This would minimize explosive safety risks to construction workers. Any construction activities within the existing munitions storage or explosive ordnance disposal areas should be surveyed for potential unexploded ordnance. All of the project areas that are within established QD arcs would be mission-necessary and consistent with current land uses. A waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of the Proposed Action.

4.4 Detailed Environmental Consequences of the Proposed Action

4.4.1 Selected Demolition Projects

4.4.1.1 Project D1. Demolish Ammunition Storage Facilities

Project D1 (Demolish Ammunition Storage Facilities) would not result in significant impacts. The following subsections discuss by resource areas the potential impacts that would be expected.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from demolition of the ammunition storage facilities. The noise emanating from demolition equipment would be localized, short-term, and intermittent during machinery operations. **Table 3-2** shows the predicted noise levels for various types of construction equipment 50 feet from the source, and **Table 4-1** shows estimated noise levels that would be expected at varying distances from a demolition area. Heavy construction equipment would not be operational during the entire demolition period, which would limit

the duration of increased noise levels. This area of Fairchild AFB is used for industrial functions. Populations potentially affected by the increased noise levels would include USAF personnel working in the adjacent industrial buildings approximately 100 feet from the demolition area. The closest personnel would experience noise levels between 84 and 88 dBA. Contractors and workers would be responsible for following noise regulations, in accordance with Federal, state, and USAF guidelines.

Land Use. Long-term, beneficial impacts would be expected from demolition of the ammunition storage facilities. Demolition activities would result in beneficial impacts on the installation's organizational functions by removing these obsolete and unnecessary facilities. The demolition would contribute to the goal of reducing the physical plant footprint on the installation according to the "20/20 by 2020" initiative. Present land use and future land use in the area, which is designated as industrial, would not change. Demolition of these structures would also reduce the number of facilities within a QD arc, thus resulting in long-term, beneficial impacts. Short-term, minor, adverse impacts would be expected due to LUCs in place at ERP Site RW-11. LUCs currently in place prevent the use of groundwater and soil potentially containing radiological contaminants. Access to the areas is controlled by fencing, warning signs, and a secured entry control point. Prior to implementation of Project D1, the appropriate Work Clearance Request process would be completed and all required signatures on all digging permits would be obtained from 92 CES.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from demolition of the ammunition storage facilities. Demolition activities would result in minor impacts on local and regional air quality during demolition activities, primarily from site-disturbing activities and operation of demolition equipment. Appropriate fugitive dust-control measures would be employed during demolition activities to suppress emissions. All emissions associated with demolition activities would be temporary in nature. It is not expected that emissions from the demolition of ammunition storage facilities would contribute to or affect local or regional attainment status with the NAAQS. Emissions from the demolition of the ammunition storage facilities are summarized in **Table 4-5**. Emissions calculation spreadsheets and a summary of the methodology used are included in **Appendix D**. No long-term impacts on air quality would be expected from the demolition of ammunition storage facilities.

Table 4-5. Estimated Air Emissions Resulting from Project D1

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	4.711	0.279	1.862	0.383	0.285	0.276	548.680
Construction Fugitive Dust	-	-	-	-	6.615	0.661	-
Haul Truck On-Road	0.402	0.291	1.182	0.032	0.479	0.124	101.880
Construction Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
Total D1 Emissions	5.212	0.669	3.936	0.416	7.388	1.067	768.894
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.014%	0.002%	0.002%	0.008%	0.010%	0.010%	0.010%

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. Short-term, minor, adverse, and long-term, beneficial impacts on soils would be expected from demolition of the ammunition storage facilities. Soils were previously disturbed in this area when the facilities were constructed. Long-term, beneficial impacts would be expected from the

removal of impervious surfaces and restoration of the project area to match surrounding areas. Short-term impacts would involve vegetation removal and compaction of surrounding soils under the weight of construction equipment, which would result in increased soil erosion and transport in storm water runoff during demolition activities. Adverse impacts would be minimized with implementation of environmental protection measures including wetting of soils, and implementation of erosion and storm water management practices to contain soil and runoff on site. Berming along nearby water bodies would decrease the amount of potential sedimentation in adjacent water bodies. Wetting of soils would occur on a daily basis, as needed, to prevent erosion and generation of dust. No impacts on topography or geology would be anticipated.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from demolition of the ammunition storage facilities. Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. A decrease in soil permeability and water infiltration associated with compaction would reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes. Long-term, beneficial impacts on water resources would be expected from this project due to the decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. Additionally, upon completion of demolition activities, the project area would be restored and revegetated to match surrounding areas. Demolition equipment could leak fuels or hazardous materials, or spills could occur during demolition activities. In the event of a spill or leak of fuel or other contaminants, there could be adverse impacts on the receiving water bodies. However, all fuels and other potentially hazardous materials would be contained, stored, and managed appropriately.

Project D1 would involve construction activities in wetlands (32 CFR § 989); therefore, this project would require a FONSI/FONPA to be prepared and approved by HQ AMC. Demolition activities associated with Project D1 would occur within the 60-foot wetland buffer area of Wetland 11A-32. The 60-foot buffer is based on the Spokane County Critical Area Ordinance, Section 11.20.050(C)(1)(c). Short-term, negligible to minor, direct, adverse impacts on wetlands would be expected from demolition of the ammunition storage facilities. Impacts on wetlands from this project would not be considered significant. In addition, a Section 404 permit would need to be obtained from the USACE to address potential impacts on wetland areas and to determine mitigation, if required. Implementation of environmental protection measures would reduce the potential for adverse impacts on wetlands. Potential adverse impacts would be minimized by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from demolition of the ammunition storage facilities. Potential impacts would be associated with temporary disturbances (e.g., trampling and limited vegetation removal) on adjoining lands and the use of heavy equipment during demolition activities. Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with demolition activities and heavy equipment use during implementation of the Project D1. Loud noise events could cause wildlife to avoid demolition areas. The project area for Project D1 is in an improved part of Fairchild AFB and noise would primarily affect urban wildlife communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species in the vicinity of demolition activities would be expected to recover quickly once the demolition noise and disturbances ceased. Therefore, no long-term, adverse impacts on wildlife would be expected. Potentially adverse impacts on biological resources would be reduced by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base

Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

No impacts on migratory birds would be expected. During demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During demolition activities, it is anticipated that protected and sensitive species would avoid the project areas and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground vibration disturbances. Fairchild AFB would implement institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policies.

Cultural Resources. The ammunition storage facilities are considered NRHP-eligible. Therefore, implementation of Project D1 would result in an adverse effect on NRHP-eligible properties at Fairchild AFB under Section 106 of the NHPA. As stated in **Section 4.3.7**, Fairchild AFB, in coordination with the Washington SHPO, developed an MOA for demolition activities involving NRHP-eligible structures. The MOA is provided in **Appendix B**. In accordance with the MOA, the USAF would ensure stipulations listed in the MOA (e.g. building-specific mitigation, flightline-specific mitigation, public education and display, duration, post-review discoveries, monitoring and reporting, dispute resolution, amendments, termination, and Anti-Deficiency Act) are implemented for demolition of NRHP-eligible properties. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP and stipulations listed in the MOA would be implemented. In addition, the CRM would immediately contact interested Native American tribes.

Socioeconomics and Environmental Justice. Short-term, beneficial impacts on the local economy would be expected from demolition of the ammunition storage facilities due to expenditures associated with demolition activities. It is anticipated that Spokane County, Washington, would be able to meet the needs of Project D1 for obtaining local equipment, supplies, and contractors. The demand for contractors during implementation of Project D1 would be minor and would not be expected to exceed the existing capacity of the local supply of contractors in Spokane County (approximately 6,300 construction workers). Short-term increases in local business volume and employment within the ROI would be expected. Implementation of Project D1 would occur entirely on Fairchild AFB. Possible adverse impacts from demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No significant impacts on infrastructure at Fairchild AFB would be expected from demolition of the ammunition storage facilities. No impacts on airfield pavements, central heating systems, or the liquid fuel system would be expected from implementation of Project D1. Short-term, minor, adverse impacts on the transportation network would be expected from implementation of Project D1. Potential impacts would be associated with increased traffic and parking requirements from construction vehicles and equipment. Any potential increases in traffic volume associated with demolition activities would be temporary. Short-term, negligible to minor, adverse, and long-term, beneficial impacts would be expected on the electrical supply, natural gas system, water supply, sanitary sewer and wastewater treatment system, and communications from implementation of Project D1. Short-term interruptions could be experienced when facilities are disconnected from or connected to the distribution system on the installation. Long-term, beneficial impacts on the electrical supply, natural gas system, water supply, sanitary sewer and wastewater treatment system, and communications would be expected from the demolition of aged facilities with outdated systems. Short-term, minor, adverse

impacts would be expected from increased demolition debris generated as a result of demolition of the ammunition storage facilities.

Hazardous Materials and Wastes. Short-term, minor, adverse impacts associated with hazardous materials and waste would be expected from implementation of Project D1. There would be a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes associated with demolition activities. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Fairchild AFB Hazardous Materials Management Process; Fairchild AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the Environmental Office via the contracting officer, including pertinent information (e.g., Material Safety Data Sheets). Because of their age, the ammunition storage facilities are assumed to contain ACM, LBP, and PCBs. Sampling for these materials should occur prior to commencement of any demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Lead-Based Paint Management Plan, Hazardous Waste Management Plan, and USAF policy. For demolition activities involving the removal of more than 48 ft² or 10 feet of ACM, notification must be provided to the Washington State Department of Labor and Industries at least 10 working days prior to the commencement of the project (WAC 296-65-020). Long-term, beneficial impacts would be expected due to the elimination of the aged facilities, resulting in less exposure to and management of ACM, LBP, and PCBs. No long-term, adverse impacts associated with hazardous materials management or hazardous waste generation would be expected as a result of Project D1. No impacts would be expected from pesticides or radon. The project area is located within ERP Site RW-11, which has a decision document/record of decision. The USTs associated with ERP Site RW-11 were excavated and any remaining soil contamination was removed in December 2011. Therefore, no impacts on or from ERP Site RW-11 would be expected from implementation of Project D1.

Safety. Short-term, minor, adverse impacts associated with safety could occur during demolition activities. Demolition activities pose an increased risk of demolition-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Demolition areas would be fenced and appropriately marked with signs. Demolition equipment and associated trucks transporting materials to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected. All of the buildings associated with this project are within the Alert Area QD on the southern portion of the installation. To avoid potential impacts on construction workers and the installation mission, Project D1 should be coordinated with the installation Safety Office. No impacts on safety would be expected on or from ERP Site RW-11.

4.4.1.2 Project D2. Demolish Building 2001E

Project D2 (Demolish Building 2001E) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from demolition of Building 2001E. Impacts on the noise environment from Project D2 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Noise**). The noise emanating from demolition equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during demolition; therefore, noise levels from the equipment would fluctuate throughout the day. This area of Fairchild AFB is used for industrial and administrative functions. Populations potentially affected by the increased noise levels would include USAF personnel working in the industrial buildings approximately 200 feet to the east of the demolition site. The closest personnel would experience noise levels of 78 to 82 dBA. No change in operations would be expected as a result of the demolition of Building 2001E; therefore, no long-term, adverse impacts on the existing

noise environment would be expected. Contractors and workers are responsible to follow noise regulations in accordance with Federal, state, and USAF guidelines.

Land Use. Long-term, beneficial impacts would be expected from demolition of Building 2001E. Impacts on land use from Project D2 would be similar to those discussed for Project D1, based on the square footage proposed to be demolished (see **Section 4.4.1.1, Land Use**). Demolition activities would result in beneficial impacts on the installation's organizational functions by removing these obsolete and unnecessary facilities. The demolition would contribute to the goal of reducing the physical plant footprint on the installation according to the "20/20 by 2020" initiative. Present land use at this site is industrial and administrative, future land use is industrial; therefore, there would be no significant change in land use. Short-term, minor, adverse impacts would be expected due to LUCs in place at ERP Site SS-39. LUCs currently in place prevent the use of groundwater potentially containing trichloroethylene (TCE) and Carbon Tet contaminants. Access to the site is restricted and controlled by fencing and warning signs. Prior to implementation of Project D2, the appropriate Work Clearance Request process would be completed and all required signatures on all digging permits would be obtained from 92 CES.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from demolition of Building 2001E. Impacts on air quality from Project D2 would be similar to those discussed for Project D1, based on the square footage proposed to be demolished (see **Section 4.4.1.1, Air Quality**). Demolition activities would result in minor impacts on local and regional air quality during demolition activities, primarily from site-disturbing activities and operation of demolition equipment. Emissions from the demolition of Building 2001E are summarized in **Table 4-6**. Emissions calculation spreadsheets and a summary of the methodology used are included in **Appendix D**. No long-term impacts on air quality would be expected from the demolition of Building 2001E.

Table 4-6. Estimated Air Emissions Resulting from Project D2

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	0.736	0.044	0.291	0.060	0.045	0.043	85.790
Construction Fugitive Dust	-	-	-	-	1.026	0.103	-
Haul Truck On-Road	0.062	0.045	0.183	0.005	0.074	0.019	15.803
Construction Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
Total D2 Emissions	0.881	0.171	1.218	0.066	1.153	0.170	200.204
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.002%	0.0004%	0.0005%	0.001%	0.002%	0.002%	0.003%

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. Short-term, minor, adverse, and long-term, beneficial impacts on soils would be expected from demolition of Building 2001E. Short-term impacts would involve vegetation removal and compaction of surrounding soils under the weight of construction equipment, which would result in increased soil erosion and transport in storm water runoff during demolition activities. Long-term, beneficial impacts would be expected from the removal of impervious surfaces and restoration of the project area to match surrounding areas. No impacts on topography or geology would be anticipated.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from demolition of Building 2001E. Impacts on water resources from Project D2 would be similar to, but less than those discussed for Project D1, based on the square footage proposed to be demolished (see **Section 4.4.1.1, Water Resources**). Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. Long-term, beneficial impacts on water resources would be expected from this project due to the decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. Implementation of environmental protection measures would reduce the potential for adverse impacts on surface waters. Potentially adverse impacts would be mitigated by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy. There are no wetlands at or within the vicinity of the area of Project D2; therefore, no impacts on wetlands would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from temporary disturbances (e.g., trampling and limited vegetation removal) on adjoining lands and the use of heavy equipment during demolition activities. Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid demolition areas. The area for Project D2 is in an improved part of Fairchild AFB and noise would primarily affect urban wildlife communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances.

No impacts on migratory birds would be expected. During demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During demolition activities, it is anticipated that protected and sensitive species would avoid the project area and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground-vibration disturbances. Potentially adverse impacts on biological resources would be reduced by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Cultural Resources. No impacts on historic properties would be expected from implementation of Project D2 because Building 2001E is not NRHP-eligible. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from Project D2 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Socioeconomics and Environmental Justice**). Short-term, minor, beneficial impacts on the local economy would be expected from demolition of Building 2001E due to expenditures associated with demolition activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term, intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No significant impacts on infrastructure at Fairchild AFB would be expected. Impacts on utilities and infrastructure from implementation of Project D2 would be similar to those discussed for

Project D1 (see **Section 4.4.1.1, Infrastructure**). No impacts on airfield pavements, central heating systems, or the liquid fuel system would be expected. Short-term, minor, adverse impacts on the transportation network would be expected. Potential impacts would be associated with increased traffic and parking requirements from construction vehicles and equipment. Short-term, negligible to minor, adverse, and long-term, beneficial impacts would be expected on the electrical supply, natural gas system, water supply, sanitary sewer and wastewater treatment system, and communications. Short-term service interruptions could be experienced by adjacent buildings when the existing utilities are disconnected from or connected to the distribution system on the installation. Long-term, beneficial impacts on the electrical supply, natural gas system, water supply, sanitary sewer and wastewater treatment system, and communications would be expected from the demolition of aged facilities with outdated systems. Short-term, minor, adverse impacts would be expected from increased demolition debris generated as a result of demolition activities.

Hazardous Materials and Waste. Impacts associated with hazardous materials and waste from implementing Project D2 would be similar to, but greater than, those discussed for Project D1 (see **Section 4.4.1.1, Hazardous Materials and Waste**). No long-term, adverse impacts associated with hazardous waste generation would be expected as a result of Project D2. The elimination of older buildings would result in less exposure to, and management of, ACM, LBP, and PCBs. For demolition activities involving the removal of more than 48 ft² or 10 feet of ACM, notification must be provided to the Washington State Department of Labor and Industries at least 10 working days prior to the commencement of the project (WAC 296-65-020). Chemicals and hazardous materials would be stored in a new facility that has modern hazardous material and petroleum product storage areas. The project area is located within ERP Site SS-39, where there is known groundwater contamination. In addition, Building 2001E is within the vicinity of Building 2001D, which could have soil contaminated with lead due to a former indoor firing range in Building 2001D. No impacts on or from the groundwater TCE plume associated with ERP Site SS-39 would be expected. Demolition activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present. However, prior to commencement of demolition activities, the project area should be surveyed for soil contamination. If contaminated soil is encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, minor, adverse impacts associated with safety could occur during demolition activities. Demolition areas would be fenced and appropriately marked with signs. Demolition equipment and associated trucks transporting materials to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected. The project area is located within ERP Site SS-39, where there is known groundwater contamination. In addition, Building 2001E is within the vicinity of Building 2001D, which could have soil contamination. Potential impacts on or from the ERP sites are discussed further in the preceding paragraph.

4.4.1.3 Project D3. Demolish Steam Heat Mains and Abandoned Steam Pits Installationwide

Project D3 (Demolish Steam Heat Mains and Abandoned Steam Pits Installationwide) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from demolition of steam heat mains and abandoned steam pits.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from demolition of steam heat mains and abandoned steam pits. Impacts on the noise environment from Project D3 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Noise**). The noise emanating from demolition equipment would be localized, short-term, and intermittent during machinery operations.

Heavy construction equipment would be operated periodically during demolition; therefore, noise levels from the equipment would fluctuate throughout the day. The project would take place at various locations throughout Fairchild AFB and could occur on land that is being used for administration, airfield, airfield operations and maintenance, community, housing, industrial, medical, open space, or outdoor recreation functions. Populations potentially affected by the increased noise levels could include USAF personnel working and living in any of the facilities on installation. Potential noise-sensitive resources on the installation could include medical clinics, community facilities, and housing. The closest personnel could experience noise levels of 90 to 94 dBA if they are 50 feet from a demolition site. No change in operations would be expected as a result of the demolition of steam heat mains and abandoned steam pits; therefore, no long-term, adverse, impacts on the existing noise environment would be expected.

Land Use. Long-term, beneficial impacts would be expected from demolition of steam heat mains and abandoned steam pits. Impacts on land use from Project D3 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Land Use**). Demolition activities would result in beneficial impacts on the installation's organizational functions by removing these obsolete and unnecessary facilities. The demolition would contribute to the goal of reducing the physical plant footprint on the installation according to the "20/20 by 2020" initiative. The central steam plant was demolished in 2002, making the related infrastructure obsolete. Land uses that these features are found on encompass most of the types found on Fairchild AFB. The demolition of these features would have no significant impact on present or future land use.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from demolition of steam heat mains and abandoned steam pits. Impacts on air quality from Project D3 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Air Quality**). Demolition activities would result in minor impacts on local and regional air quality during demolition activities, primarily from site-disturbing activities and operation of demolition equipment. Emissions from the demolition of the steam heat mains and abandoned steam pits are summarized in **Table 4-7**. Emissions calculation spreadsheets and a summary of the methodology used are included in **Appendix D**. No long-term impacts on air quality would be expected from demolition of the steam heat mains and abandoned steam pits.

Table 4-7. Estimated Air Emissions Resulting from Project D3

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	0.259	0.015	0.102	0.021	0.016	0.015	30.244
Construction Fugitive Dust	-	-	-	-	0.323	0.032	-
Haul Truck On-Road	0.020	0.014	0.058	0.002	0.023	0.006	4.970
Construction Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
Total D3 Emissions	0.362	0.111	0.904	0.024	0.370	0.058	133.825
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.001%	0.0003%	0.0003%	0.0005%	0.001%	0.001%	0.002%

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. Short-term, minor, adverse impacts on soils would be expected from demolition of steam heat mains and abandoned steam pits. Short-term impacts would involve vegetation removal and compaction of surrounding soils under the weight of construction equipment, which would result in increased soil erosion and transport in storm water runoff during demolition activities. No impacts on topography or geology would be anticipated.

Water Resources. Short-term, minor, adverse impacts on water resources would be expected from demolition of steam heat mains and abandoned steam pits. Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. There are no wetlands at or within the vicinity of the project area of Project D3; therefore, no impacts on wetlands would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from temporary disturbances (e.g., trampling and limited vegetation removal) on adjoining lands and the use of heavy equipment during demolition activities. Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid demolition areas. The area for Project D3 is in an improved part of Fairchild AFB and noise would primarily affect urban wildlife communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances.

No impacts on migratory birds would be expected. During demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During demolition activities, it is anticipated that protected and sensitive species would avoid the project area and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground-vibration disturbances. Potentially adverse impacts on biological resources would be reduced by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Cultural Resources. No impacts on historic properties would be expected from implementation of Project D3 because none of the steam heat mains or abandoned steam pits are NRHP-eligible. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from Project D3 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Socioeconomics and Environmental Justice**). Short-term, minor, beneficial impacts on the local economy would be expected from demolition of steam heat mains and abandoned steam pits due to expenditures associated with demolition activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. Impacts on infrastructure from Project D3 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Infrastructure**). All pavements disturbed during demolition activities (i.e., from the 29 pits situated in paved areas) would be repaired and replaced. No impacts would be expected on the

airfield, electrical supply, central heating system, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water system, or communications system.

Hazardous Materials and Wastes. Impacts associated with hazardous materials and waste from implementing Project D3 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Hazardous Materials and Waste**). Some of the project areas where the steam heat mains and abandoned steam pits are located are within several ERP sites. No impacts on or from contaminated or potentially contaminated groundwater would be expected, as demolition activities are not expected to come in contact with the shallow groundwater aquifer. Prior to implementation of Project D3, the project areas should be surveyed for soil contamination associated with any ERP sites within the project areas. If contaminated soil is encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, minor, adverse impacts associated with safety could occur during demolition activities. Demolition areas would be fenced and appropriately marked with signs. Demolition equipment and associated trucks transporting materials to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected. Some of the project areas where the steam heat mains and abandoned steam pits are located are within active ERP sites. Exposure to contaminants at any of the project sites could result in short-term, minor, adverse impacts on personnel working at the site. Upon inadvertent discovery of contaminated soil, recommendations regarding workers and health and safety procedures identified in **Section 3.11.2** would be implemented. Demolition activities associated with Project D3 are also within the QD arcs described in **Section 3.11.2**. Prior to implementation, Project D3 would be coordinated with Airfield Management and the installation Safety Office to avoid potential safety issues with construction workers. In addition, a waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of demolition activities.

4.4.1.4 Project D4. Demolish Aircraft Hangars: Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019

Project D4 (Demolish Aircraft Hangars: Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from demolition of the aircraft hangars.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from demolition of aircraft hangars. Impacts on the noise environment from Project D4 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Noise**). The noise emanating from demolition equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would not be operational during the entire demolition period, which would limit the duration of increased noise levels. This area of Fairchild AFB is used for airfield operations and management functions. Populations potentially affected by the increased noise levels would include USAF personnel working in airfield operations and management facilities approximately 400 feet to the north, west, and east of the demolition sites. The closest personnel would experience noise levels of 72 to 76 dBA.

Land Use. Long-term, beneficial impacts would be expected from demolition of aircraft hangars. Impacts on land use from Project D4 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Land Use**). Demolition activities would result in beneficial impacts on the installation's organizational functions by removing these obsolete and unnecessary facilities. The demolition would contribute to the goal of reducing the physical plant footprint on the installation according to the "20/20

by 2020” initiative. The present and future land use for this area is designated as Airfield Operations and Maintenance. No change to the land use designation would be expected. Short-term, minor, adverse impacts would be expected due to LUCs in place at ERP sites SS-26, SD-37, and SS-39. LUCs currently in place prevent the use of groundwater potentially containing contaminants of concern (e.g., TCE, Carbon Tet). Access to the areas is restricted and controlled by fencing and warning signs. Prior to implementation of Project D4, the appropriate Work Clearance Request process would be completed and all required signatures on all digging permits would be obtained from 92 CES.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from demolition of aircraft hangars. Impacts on air quality from Project D4 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Air Quality**). Demolition activities would result in minor impacts on local and regional air quality during demolition activities, primarily from site-disturbing activities and operation of demolition equipment. Emissions from the demolition of the aircraft hangars are summarized in **Table 4-8**. Emissions calculation spreadsheets and a summary of the methodology used are included in **Appendix D**.

Table 4-8. Estimated Air Emissions Resulting from Project D4

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	3.498	0.208	1.383	0.284	0.212	0.205	407.344
Construction Fugitive Dust	-	-	-	-	4.918	0.492	-
Haul Truck On-Road	0.299	0.216	0.879	0.024	0.356	0.093	75.750
Construction Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
Total D4 Emissions	3.880	0.506	3.006	0.309	5.494	0.795	581.705
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.011%	0.001%	0.001%	0.006%	0.008%	0.007%	0.008%

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. Short-term, minor, adverse impacts, and long-term, beneficial impacts on soils would be expected from demolition of the aircraft hangars. Short-term impacts would involve vegetation removal and compaction of surrounding soils under the weight of construction equipment, which would result in increased soil erosion and transport in storm water runoff during demolition activities. Long-term, beneficial impacts would be expected from the removal of impervious surfaces and restoration of the project area to match surrounding areas. No impacts on topography or geology would be anticipated.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from demolition of aircraft hangars. Impacts on water resources from Project D4 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Water Resources**). Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. Long-term, beneficial impacts on water resources would be expected from this project due to the decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion

and offsite transport of sediments. There are no wetlands at or within the vicinity of the project area for Project D4; therefore, no impacts on wetlands would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from temporary disturbances (e.g., trampling and limited vegetation removal) on adjoining lands and the use of heavy equipment during demolition activities. Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid demolition areas. The project area for Project D4 is in an improved part of Fairchild AFB and noise would primarily affect urban wildlife communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances.

No impacts on migratory birds would be expected. During demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During demolition activities, it is anticipated that protected and sensitive species would avoid the project area and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground vibration disturbances. Potentially adverse impacts on biological resources would be reduced by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policies.

Cultural Resources. Buildings 1011, 1012, 1013, 1015, 1017, and 1019 are identified as contributing properties to the installation's Flight Line Historic District and are considered NRHP-eligible. Demolition of these buildings would adversely affect the setting of other contributing properties in the historic district and would adversely affect the historic district as a whole. Therefore, implementation of Project D4 would result in an adverse effect on NRHP-eligible properties at Fairchild AFB under Section 106 of the NHPA. As stated in **Section 4.3.7**, Fairchild AFB, in coordination with the Washington SHPO, developed an MOA for demolition activities involving NRHP-eligible structures. The MOA is provided in **Appendix B**. In accordance with the MOA, the USAF would ensure stipulations listed in the MOA (e.g. building-specific mitigation, flightline-specific mitigation, public education and display, duration, post-review discoveries, monitoring and reporting, dispute resolution, amendments, termination, and Anti-Deficiency Act) are implemented for demolition of NRHP-eligible properties. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP and stipulations listed in the MOA would be implemented. In addition, the CRM would immediately contact interested Native American tribes.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from Project D4 would be similar to those discussed for Project D1 (see **Section 4.4.1.1, Socioeconomics and Environmental Justice**). Short-term, beneficial impacts on the local economy would be expected from demolition of aircraft hangars due to expenditures associated with demolition activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No significant impacts on infrastructure at Fairchild AFB would be expected. Impacts on utilities and infrastructure from implementation of Project D4 would be similar to, but slightly greater than, those discussed for Project D1 based on the total square footage area (see **Section 4.4.1.1**,

Infrastructure). No impacts on airfield pavements, central heating systems, or the liquid fuel system would be expected from implementation of Project D4. Short-term, minor, adverse impacts on the transportation network would be expected. Potential impacts would be associated with increased traffic and parking requirements from construction vehicles and equipment. Short-term, negligible to minor, adverse, and long-term, beneficial impacts would be expected on the electrical supply, natural gas system, water supply, sanitary sewer and wastewater treatment system, and communications. Short-term service interruptions could be experienced by adjacent buildings when the existing utilities are disconnected from or connected to the distribution system on the installation. Long-term, beneficial impacts on the electrical supply, natural gas system, water supply, sanitary sewer and wastewater treatment system, and communications would be expected from the demolition of aged facilities with outdated systems. Short-term, minor, adverse impacts would be expected from increased demolition debris generated as a result of demolition activities.

Hazardous Materials and Wastes. Impacts associated with hazardous materials and waste from implementing Project D4 would be similar to, but slightly greater than, those discussed for Project D1 (see **Section 4.4.1.1, Hazardous Materials and Waste**). Short-term, negligible, adverse impacts associated with hazardous waste management would be expected because Building 1012 contains an SAP, battery accumulation site, and an 800-gallon OWS; and Building 1019 contains an 800-gallon OWS. The SAP and battery accumulation site would require relocation and the OWSs at Buildings 1012 and 1019 would require cleaning and closure prior to implementation of Project D4. Because of their age, Buildings 1011, 1012, 1013, 1015, 1017, and 1019 are assumed to contain ACM, LBP, and PCBs. Sampling for these materials should occur prior to commencement of any demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Lead-Based Paint Management Plan, Hazardous Waste Management Plan, and USAF policy. For demolition activities involving the removal of more than 48 ft² or 10 feet of ACM, notification must be provided to the Washington State Department of Labor and Industries at least 10 working days prior to the commencement of the project (WAC 296-65-020). Long-term, beneficial impacts would be expected due to the elimination of the aged facilities, resulting in less exposure to, and management of, ACM, LBP, and PCBs.

The project areas are located within ERP sites SS-26, SS-39, SD-37, TU500, and OW046. There is known groundwater contamination at ERP sites SS-26, SS-39, SD-37, and TU500; potential groundwater contamination at ERP Site OW046; and known soil contamination at ERP sites SD-37 and TU500. No impacts on or from the contaminated or potentially contaminated groundwater associated with ERP sites SS-26, SS-39, SD-37, TU500, or OW046 would be expected. Demolition activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present. However, prior to commencement of demolition activities, the project areas should be surveyed for soil contamination associated with ERP sites SD-37 and TU500. If contaminated soil is encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, minor, adverse impacts associated with safety could occur during demolition activities. Demolition areas would be fenced and appropriately marked with signs. Demolition equipment and associated trucks transporting materials to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected. The project areas are located within ERP sites SS-26, SS-39, SD-37, TU500, and OW046. Potential impacts on or from the ERP sites are discussed further in the preceding paragraph. Demolition activities associated with Project D4 also have the potential to be within the QD arcs described in **Section 3.11.2**. Prior to implementation, Project D4 should be coordinated with Airfield Management and the installation Safety Office to avoid potential safety issues with construction workers.

In addition, a waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of demolition activities.

4.4.2 Selected Construction Projects

4.4.2.1 Project C1. Construct Pipeline Dormitory

Project C1 (Construct Pipeline Dormitory) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from construction of the Pipeline Dormitory.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from construction of the Pipeline Dormitory. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. **Table 3-2** shows the predicted noise levels for various pieces of construction equipment 50 feet from the source, and **Table 4-1** shows estimated noise levels that would be expected at varying distances from a construction site. Heavy construction equipment would not be operational during the entire construction period, which would limit the duration of increased noise levels. This area of Fairchild AFB is currently open space. Populations potentially affected by the increased noise levels would include USAF personnel working in the adjacent administrative building approximately 300 feet from the construction site and the USAF personnel temporarily living in the adjacent unaccompanied housing facility approximately 500 feet from the site. The closest personnel to the construction site would experience noise levels of 75 to 79 dBA. Contractors and workers would be responsible for following noise regulations, in accordance with Federal, state and USAF guidelines.

Land Use. Short-term, negligible, adverse, and long-term, beneficial impacts on land use would be expected from construction of the Pipeline Dormitory. This area of Fairchild AFB is currently designated as open space land use. Project C1 would require the land use category to be changed from open space to housing (unaccompanied). This project and associated land use change would be consistent with the Fairchild AFB LRDP, which identifies the future land use of the area as housing (unaccompanied). Construction of the Pipeline Dormitory would have beneficial impacts on the installation's organizational functions by consolidating SERE student lodging into one modern building in close proximity to the SERE School.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from the construction of the Pipeline Dormitory. Construction activities would result in minor impacts on local and regional air quality during construction activities, primarily from site-disturbing activities and operation of construction equipment. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction operations would be temporary in nature. Emissions from the construction of the Pipeline Dormitory are summarized in **Table 4-9**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Long-term, minor, adverse impacts on air quality would be expected from the use of natural gas boilers to provide comfort heating to the new Pipeline Dormitory. Emissions were not calculated for natural gas boilers at the new Pipeline Dormitory because they are subject to NSR requirements, which ensure that air quality is not significantly degraded from the addition of new and modified industrial boilers. It is not expected that emissions from Project C1 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Table 4-9. Estimated Air Emissions Resulting from Project C1

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	4.850	0.617	2.136	0.384	0.348	0.337	549.905
Construction Fugitive Dust	-	-	-	-	3.071	0.307	-
Haul Truck On-Road	0.939	0.679	2.760	0.074	1.117	0.290	237.815
Construction Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
Total C1 Emissions	5.888	1.395	5.788	0.459	4.545	0.940	906.054
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.016%	0.004%	0.002%	0.009%	0.006%	0.009%	0.012%

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. No impacts on topography or geology would be expected. Short- and long-term, minor, adverse impacts on soils would be expected from construction of the Pipeline Dormitory. Short-term impacts would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching during construction activities. Vegetative clearing would increase erosion and the potential for sedimentation. As a result of constructing the barricades, holding areas, and access roads, long-term, minor, adverse impacts would be expected, as soils would be compacted and soil structure would be disturbed and modified. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and would be eliminated in those areas within the footprints of roadways. Loss of soil structure due to compaction from foot and vehicle traffic could change local drainage patterns. Soil erosion- and sediment-control measures would be included in site plans to minimize long-term erosion and sediment production at each site. Use of storm water-control measures that favor infiltration would minimize erosion and sediment production from future storm events.

Water Resources. Short- and long-term, minor, adverse impacts would be expected from the removal of vegetation and grading and excavation of soil for construction of the Pipeline Dormitory. Construction activities would have the potential to increase runoff temporarily from the construction site into receiving water bodies. Long-term, minor, adverse impacts on water resources would occur from the increase in impervious surface area and compaction of soils due to foot and vehicle traffic. Increased impervious surface areas would lead to increased erosion, sedimentation, and storm water runoff volume and velocity, and would contribute to decreased water infiltration rates. Maintaining onsite storm water infiltration during construction activities would allow groundwater to recharge and minimize storm water runoff. Potentially adverse impacts on water resources would be mitigated by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy. There are no wetlands at or within the vicinity of the area for Project C1; therefore, no impacts on wetlands would be expected.

In the event of a spill or leak of fuel or other contaminants, there could be adverse impacts on the receiving water bodies. However, all fuels and other potentially hazardous materials would be contained,

stored, and managed appropriately. Environmental protection measures would minimize the potential for and extent of associated contamination.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected. Construction activities associated with Project C1 would require the permanent removal of vegetation (mostly maintained grasses). Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with construction activities and heavy equipment use during implementation of the Project C1. High noise events could cause wildlife to avoid construction areas. However, most wildlife species in the vicinity of construction activities would be expected to recover quickly once the construction noise and disturbances ceased. Therefore, no long-term, adverse impacts on wildlife would be expected. Potentially adverse impacts on biological resources would be reduced by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy. Long-term, direct, minor, adverse impacts on wildlife would also be expected due to the permanent loss of habitat; however, these impacts would not be considered significant.

No impacts on migratory birds would be expected. During construction activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During construction activities, it is anticipated that protected and sensitive species would avoid the project area and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground-vibration disturbances. Potentially adverse impacts on biological resources would be reduced by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Cultural Resources. No impacts on historic properties would be expected from implementation of Project C1. The new Pipeline Dormitory would not be constructed in any areas with architectural resources eligible for the NRHP. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Short-term, beneficial impacts on the local economy would be expected from construction of the Pipeline Dormitory due to expenditures associated with construction activities. It is anticipated that Spokane County, Washington, would be able to meet the needs of Project C1 for obtaining local equipment, supplies, and contractors. The demand for contractors during implementation of Project C1 would be minor and would not be expected to exceed the existing capacity of the local supply of contractors in Spokane County (approximately 6,300 construction workers). Short-term increases in local business volume and employment within the ROI would be expected. Implementation of Project C1 would occur entirely on Fairchild AFB. Possible adverse impacts from construction activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, central heating system, liquid fuel supply, or communications system would be expected from implementation of Project C1. Short-term, minor, adverse, and long-term, beneficial impacts on the transportation network would be expected. Potential adverse impacts would be associated with increased traffic and parking requirements from construction vehicles and equipment. Construction activities would require the delivery of materials to, and removal of debris from,

project areas; however, construction traffic would compose a small percentage of the total existing traffic on the installation. Many of the heavy construction vehicles would be driven to the project area and kept on site for the duration of construction activities, resulting in relatively few additional trips. Any potential increases in traffic volume associated with construction activities would be temporary. Currently students are housed off site and have to be transported to the SERE School. The new Pipeline Dormitory would allow for the consolidation of housing for the students attending the SERE School, and the students would no longer need to be transported to the SERE school, which would result in beneficial impacts on the transportation network.

Short-term, negligible, adverse, impacts on the electrical supply, natural gas supply, water supply, and sanitary sewer and wastewater system would be expected from implementation of Project C1. Short-term service interruptions could be experienced by adjacent buildings when the existing utilities are disconnected from the existing facility and connected to the new facility. However, the discontinuation of utilities would be temporary and coordinated with area users. Long-term increases in demand would not be expected to exceed existing capacities. In addition, impacts on utilities from increased demand would be reduced with the installation of updated, energy-efficient systems. Long-term, minor, adverse impacts on storm water management would be expected from an increase in impervious surface area. Short-term, minor, adverse impacts from increased generation of solid waste would be expected from construction debris generated as a result of the construction of the Pipeline Dormitory.

Hazardous Materials and Waste. Short-term, minor, adverse impacts associated with hazardous materials and waste would be expected from implementation of Project C1. There would be a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes associated with construction activities. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Fairchild AFB Hazardous Materials Management Process; Fairchild AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the Environmental Office via the contracting officer, including pertinent information (e.g., Material Safety Data Sheets). No impacts would be expected from ACM, LBP, PCBs, pesticides, radon, or ERP sites. Radon testing at the project area could be used to determine the presence of radon and the need for a radon mitigation system.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected.

4.4.2.2 Project C2. Construct Precision Measurement Equipment Laboratory Facility

Project C2 (Construct PMEL Facility) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from construction of the PMEL Facility.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility. Impacts on the noise environment resulting from Project C2 would be similar to, but slightly greater than, those discussed for Project C1, because Project C2 includes demolition of the existing PMEL Facility (see **Section 4.4.2.1, Noise**). The noise emanating from construction equipment would be localized,

short-term, and intermittent during machinery operations. Heavy construction equipment would not be operational during the entire construction and demolition period, which would limit the duration of increased noise levels. This area of Fairchild AFB is used for administrative functions. Populations potentially affected by the increased noise levels would include USAF personnel working in adjacent administration facilities approximately 100 feet from the construction and demolition areas, USAF personnel and USAF dependents working in and using the Deel Community Center approximately 200 feet from the project area, and USAF personnel working in the airfield operations and maintenance facilities approximately 200 feet from the project area. The closest personnel to the building construction and demolition areas would experience noise levels of 78 to 82 dBA. Contractors and workers would be responsible for following noise regulations, in accordance with Federal, state and USAF guidelines.

Land Use. Long-term, beneficial impacts on land use would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility. The present and future land use for this area is designated as industrial. No change to the land use designation would be expected from construction of the new PMEL Facility or demolition of the existing PMEL Facility. Project C2 and the associated land use would be consistent with the Fairchild AFB LRDP. The associated demolition of the existing facility would result in an overall decrease in impervious surface area and would contribute to the goal of reducing the physical plant footprint on the installation according to the “20/20 by 2020” initiative, resulting in beneficial impacts.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from the construction of the new PMEL Facility and demolition of the existing PMEL Facility. Impacts on air quality from Project C2 would be similar to, but slightly greater than, those discussed for Project C1, because Project C2 includes demolition of the existing PMEL Facility (see **Section 4.4.2.1, Air Quality**). Construction and demolition activities would result in minor impacts on local and regional air quality, primarily from site-disturbing activities and operation of construction equipment. Emissions from the construction of the new PMEL Facility and demolition of the existing PMEL Facility are summarized in **Table 4-10**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-10. Estimated Air Emissions Resulting from Project C2

Activity*	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	5.682	0.501	2.465	0.451	0.398	0.386	646.456
Construction Fugitive Dust	-	-	-	-	1.504	0.150	-
Haul Truck On-Road	0.239	0.173	0.703	0.019	0.284	0.074	60.527
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Total C2 Emissions	6.053	0.806	4.358	0.472	2.199	0.618	864.761
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.017%	0.002%	0.002%	0.010%	0.003%	0.006%	0.012%

Note: * The estimated air emissions resulting from Project C2 includes both construction and demolition activities.

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Long-term, minor, adverse impacts on air quality would be expected from the use of natural gas boilers to provide comfort heating to the new PMEL Facility. While these operating emissions would increase the overall air emissions from Fairchild AFB, it is anticipated that the added emissions would be offset by a reduction in air emissions from the demolition of the existing PMEL Facility. Emissions were not

calculated for natural gas boilers at the proposed PMEL Facility because they are subject to NSR requirements, which ensure that air quality is not significantly degraded from the addition of new and modified industrial boilers. It is not expected that emissions from Project C2 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. No impacts on topography or geology would be expected. Short-term, minor adverse, and long-term, beneficial impacts on soils would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility. Short-term impacts would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching during construction and demolition activities. Long-term, beneficial impacts would be expected from the net decrease of impervious surfaces and restoration of the project area to match surrounding areas.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility. Impacts on water resources from Project C2 would be similar to, but slightly less than, those discussed for Project C1, because Project C2 includes demolition of the existing PMEL Facility (see **Section 4.4.2.1, Water Resources**). Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. Long-term, beneficial impacts on water resources would be expected from this project due to the decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. Additionally, upon completion of demolition activities, the project area would be restored and revegetated to match surrounding areas. There are no wetlands at or within the vicinity of the project area for Project C2; therefore, no impacts on wetland areas would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility. Construction and demolition activities would require the permanent removal of vegetation (mostly maintained grasses). Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with construction and demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid construction areas. However, most wildlife species in the vicinity of construction activities would be expected to recover quickly once the construction and demolition noise and disturbances ceased.

No impacts on migratory birds would be expected. During construction and demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During construction and demolition activities, it is anticipated that protected and sensitive species would avoid the project area and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground-vibration disturbances. Potentially adverse impacts on biological resources would be reduced by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Cultural Resources. The existing PMEL Facility and its surrounding facilities (Buildings 2120, 2125, and 2185) are not considered NRHP-eligible. Therefore, no impacts on historic properties would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from Project C2 would be similar to those discussed for Project C1 (see **Section 4.4.2.1, *Socioeconomics and Environmental Justice***). Short-term, beneficial impacts on the local economy would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility due to expenditures associated with construction and demolition activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from construction and demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, central heating system, or liquid fuel supply would be expected from construction of the new PMEL Facility and demolition of the existing PMEL Facility. Impacts on the transportation network and from solid waste generation from Project C2 would be similar to, but slightly greater than, those discussed for Project C1, because Project C2 includes demolition of the existing PMEL Facility (see **Section 4.4.2.1, *Infrastructure***).

Short-term, negligible, adverse, and long-term, beneficial impacts on the electrical supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water management, and communications systems would be expected from implementation of Project C2. Short-term service interruptions could be experienced by adjacent buildings when the existing utilities are disconnected from the existing PMEL Facility and connected to the new distribution systems at the new PMEL Facility. However, the discontinuation of utilities would be temporary and coordinated with area users. Long-term, beneficial impacts on utilities would be expected from the demolition of the existing PMEL Facility with outdated systems and the construction of new PMEL Facility with updated, energy-efficient utilities and infrastructure. Any long-term increases in demand for utilities upon completion of new construction would be anticipated to be offset by the cessation of use in the demolished facility. Long-term, beneficial impacts on the storm water system would be expected from an overall net decrease in impervious surface area upon completion of Project C2. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments.

Hazardous Materials and Waste. Impacts associated with hazardous materials and waste from implementing Project C2 would be similar to, but slightly greater than, those discussed for Project C1, because Project C2 includes demolition of the existing PMEL Facility (see **Section 4.4.2.1, *Hazardous Materials and Waste***). Short-term, negligible to minor, adverse impacts could be expected from ACM, LBP, and PCBs. Due to its age, the existing PMEL Facility is assumed to contain ACM, LBP, and PCBs. Sampling for these materials should occur prior to commencement of demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Lead-Based Paint Management Plan, Hazardous Waste Management Plan, and USAF policy. For construction activities involving the removal of more than 48 ft² or 10 feet of ACM, notification must be provided to the Washington State Department of Labor and Industries at least 10 working days prior to the commencement of the project (WAC 296-65-020). Long-term, beneficial impacts would be expected due to the demolition of the existing PMEL Facility, resulting in less exposure to ACM, LBP, and PCBs. No impacts would be expected from pesticides or radon. Radon testing at the project area could be used to determine the presence of radon and the need for a radon mitigation system. The project area is located within ERP Site TU502, where there is known soil and groundwater contamination. No impacts on or from the contaminated groundwater associated with ERP Site TU502 would be expected. Demolition and construction activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present. However, prior to commencement of demolition and construction activities, the project area should be surveyed for soil contamination. If contaminated soil is encountered,

the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during construction of the new PMEL Facility and demolition of the existing PMEL Facility. The project area for Project C2 is located within ERP Site TU502, where there is known soil and groundwater contamination. Potential impacts on or from the ERP site are discussed further in the preceding paragraph. The project area would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from the project area would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected.

4.4.2.3 Project C3. Construct Peacetime Governmental Hostage/Detention Training Facility

Project C3 (Construct Peacetime Governmental Hostage/Detention Training Facility) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. Impacts on the noise environment from Project C3 would be similar to, but slightly greater than, those discussed for Project C1, because Project C3 includes demolition of the existing facility (see **Section 4.4.2.1, Noise**). The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would not be operational during the entire construction and demolition period, which would limit the duration of increased noise levels. This area of Fairchild AFB is currently used for industrial facilities and open space. Populations potentially affected by the increased noise levels would include USAF personnel working in the adjacent industrial facilities approximately 300 feet from the project area. The closest personnel to the project area would experience noise levels of 75 to 79 dBA. Contractors and workers would be responsible for following noise regulations, in accordance with Federal, state and USAF guidelines.

Land Use. Short-term, negligible, adverse, and long-term, beneficial impacts on land use would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. The new Peacetime Governmental Hostage/Detention Training Facility would be constructed within the open space and industrial land use categories, and would require a land use change to Industrial. Project C3 and associated land use change would be consistent with the Fairchild AFB LRDP, which designates the future land use at the project area as industrial and open space. The associated demolition of the existing facility would result in an overall decrease in impervious surface area and would contribute to the goal of reducing the physical plant footprint on the installation according to the “20/20 by 2020” initiative, resulting in beneficial impacts.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from the construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. Impacts on air quality from Project C3 would be similar to, but slightly greater than, those discussed for Project C1, because Project C3 includes demolition of the existing facility (see **Section 4.4.2.1, Air Quality**). Construction and demolition activities would result in minor impacts on local and regional air quality, primarily from site-disturbing activities and operation of construction equipment. Emissions from the construction of the Peacetime Governmental Hostage/Detention Training

Facility and demolition of the existing facility are summarized in **Table 4-11**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-11. Estimated Air Emissions Resulting from Project C3

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	5.411	0.535	2.358	0.429	0.382	0.370	614.980
Construction Fugitive Dust	-	-	-	-	1.766	0.177	-
Haul Truck On-Road	0.291	0.210	0.855	0.023	0.346	0.090	73.631
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Total C3 Emissions	5.834	0.877	4.403	0.454	2.507	0.645	846.389
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.016%	0.002%	0.002%	0.009%	0.004%	0.006%	0.012%

Note: * The estimated air emissions resulting from Project C3 includes both construction and demolition activities.

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Long-term, minor, adverse impacts on air quality would be expected from the use of natural gas boilers to provide comfort heating to the new Peacetime Governmental Hostage/Detention Training Facility. While these operating emissions would increase the overall air emissions from Fairchild AFB, it is anticipated that the added emissions would be offset by a reduction in air emissions from the demolition of the existing facility. Emissions were not calculated for natural gas boilers at the proposed Peacetime Governmental Hostage/Detention Training Facility because they are subject to NSR requirements, which ensure that air quality is not significantly degraded from the addition of new and modified industrial boilers. It is not expected that emissions from Project C3 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. No impacts on topography or geology would be expected. Short-term, minor adverse, and long-term, beneficial impacts on soils would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. Short-term impacts would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching during construction and demolition activities. Long-term, beneficial impacts would be expected from the net decrease of impervious surfaces and restoration of the project area to match surrounding areas.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. Impacts on water resources from Project C3 would be similar to, but slightly less than, those discussed for Project C1, because Project C3 includes demolition of the existing facility (see **Section 4.4.2.1, Water Resources**). Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. Long-term, beneficial impacts on water resources would be expected from this project due to the overall decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. Additionally, upon completion of demolition activities, the project area would be restored and revegetated to match surrounding areas. There are no wetlands at or within the vicinity of the area for Project C3; therefore, no impacts on wetlands would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. Construction and demolition activities would require the permanent removal of vegetation (mostly maintained grasses). Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with construction and demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid construction areas. However, most wildlife species in the vicinity of construction and demolition activities would be expected to recover quickly once the construction and demolition noise and disturbances ceased.

No impacts on migratory birds would be expected. During construction and demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During construction and demolition activities, it is anticipated that protected and sensitive species would avoid the project area and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground vibration disturbances. Fairchild AFB would implement institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Cultural Resources. The existing facility that would be demolished and the facilities that would surround the new Peacetime Governmental Hostage/Detention Training Facility (Buildings 1724 and 1733) are not considered NRHP-eligible. Therefore, no impacts on historic properties would be expected. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility would be similar to those discussed for Project C1 (see **Section 4.4.2.1, Socioeconomics and Environmental Justice**). Short-term, beneficial impacts on the local economy would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility due to expenditures associated with construction and demolition activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from construction and demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, central heating system, or liquid fuel supply would be expected from the construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. Impacts on the transportation network and from solid waste generation from Project C3 would be similar to, but slightly greater than, those discussed for Project C1, because Project C3 includes demolition of the existing facility (see **Section 4.4.2.1, Infrastructure**).

Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the electrical supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water management, and communications systems would be expected from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. Short-term service interruptions could be experienced by adjacent buildings when the existing utilities are disconnected from the existing facility and connected to the new distribution systems at the new Peacetime Governmental

Hostage/Detention Training Facility. However, the discontinuation of utilities would be temporary and coordinated with area users. Long-term, beneficial impacts on utilities would be expected from the demolition of the existing facility with outdated systems and the construction of the new Peacetime Governmental Hostage/Detention Training Facility with updated, energy-efficient utilities and infrastructure. Any long-term increases in demand for utilities upon completion of new construction would be anticipated to be offset by the cessation of use in the demolished facility. Long-term, beneficial impacts on the storm water system would be expected from an overall net decrease in impervious surface area upon completion of Project C3. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments.

Hazardous Materials and Waste. Impacts associated with hazardous materials and waste from construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility would be similar to, but slightly greater than, those discussed for Project C1, because Project C3 includes demolition of the existing facility (see **Section 4.4.2.1, Hazardous Materials and Waste**). Short-term, negligible to minor, adverse impacts could be expected from ACM, LBP, and PCBs. Due to its age, the existing facility to be demolished is assumed to contain ACM, LBP, and PCBs. Sampling for these materials should occur prior to commencement of demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Lead-Based Paint Management Plan, Hazardous Waste Management Plan, and USAF policy. Long-term, beneficial impacts would be expected due to the elimination of the existing facility, resulting in less exposure to ACM, LBP, and PCBs. No impacts would be expected from pesticides, radon, or ERP sites. Radon testing at the project area could be used to determine the presence of radon and the need for a radon mitigation system.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during construction of the Peacetime Governmental Hostage/Detention Training Facility and demolition of the existing facility. The project area would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from the project area would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected.

4.4.2.4 Project C4. Construct Base Operations Facility Building 1

Project C4 (Construct Base Operations Facility Building 1) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from construction of the Base Operations Facility.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from construction of the Base Operations Facility and demolition of the existing facility (Building 1). Impacts on the noise environment from Project C4 would be similar to, but slightly greater than, those discussed for Project C1, because Project C4 includes demolition of Building 1 (see **Section 4.4.2.1, Noise**). The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would not be operational during the entire construction and demolition period, which would limit the duration of increased noise levels. This area of Fairchild AFB is used for airfield operations and maintenance functions. Populations potentially affected by the increased noise levels would include USAF personnel working in the adjacent fire department approximately 200 feet from the project area and USAF personnel working in the adjacent airfield operations and maintenance facility approximately 350 feet from the project area. The closest personnel to the project area would experience noise levels of 78 to 82 dBA. Contractors and workers would be responsible for following noise regulations, in accordance with Federal, state, and USAF guidelines.

Land Use. Long-term, negligible, adverse, and long-term, beneficial impacts on land use would be expected from construction of the Base Operations Facility and demolition of the existing facility (Building 1). Building 1 would be demolished and the new Base Operations Facility would be constructed in the same location, within the airfield operations and maintenance land use category. No changes to land use designation would be required. Project C4 and the associated land use would be consistent with the Fairchild AFB LRDP, which designates the future land use at the project area as Airfield Operations, Maintenance, and Training. The demolition of the existing facility would result in an overall decrease in impervious surface area and would contribute to the goal of reducing the physical plant footprint on the installation according to the “20/20 by 2020” initiative, resulting in beneficial impacts. The area for Project C4 overlaps ERP Site SS-39, which has LUCs in place due to an orphan groundwater TCE plume. No impacts on or from the plume would be expected as a result of construction of the new Base Operations Facility or demolition of Building 1. LUCs currently in place prevent the use of groundwater potentially containing TCE and Carbon Tet. Access to the site is restricted and controlled by fencing and warning signs. Demolition and construction activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present. The project area for Project C4 is also located within a QD arc, which could result in long-term, minor, adverse impacts on land use; however, the location of the new Base Operations Facility is directly related to its mission; therefore, no significant impacts would be expected. A waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of construction and demolition activities.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from the construction of the Base Operations Facility and demolition of the existing facility (Building 1). Impacts on air quality from Project C4 would be similar to, but slightly greater than, those discussed for Project C1, because Project C4 includes demolition of the existing facility (see **Section 4.4.2.1, Air Quality**). Construction and demolition activities would result in minor impacts on local and regional air quality, primarily from site-disturbing activities and operation of construction equipment. Emissions from the construction of the Base Operations Facility and demolition of Building 1 are summarized in **Table 4-12**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-12. Estimated Air Emissions Resulting from Project C4

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	5.198	0.515	2.273	0.412	0.369	0.358	589.950
Construction Fugitive Dust	-	-	-	-	0.571	0.057	-
Haul Truck On-Road	0.229	0.166	0.674	0.018	0.273	0.071	58.034
Construction Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
Total C4 Emissions	5.510	0.763	3.691	0.431	1.221	0.491	746.595
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.015%	0.002%	0.001%	0.009%	0.002%	0.005%	0.010%

Note: * The estimated air emissions resulting from Project C4 includes both construction and demolition activities.

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Long-term, minor, adverse impacts on air quality would be expected from the use of natural gas boilers to provide comfort heating to the new Base Operations Facility. While these operating emissions would increase the overall air emissions from Fairchild AFB, it is anticipated that the added emissions would be

offset by a reduction in air emissions from the demolition of the existing building. Emissions were not calculated for natural gas boilers at the proposed Base Operations Facility because they are subject to NSR requirements, which ensure that air quality is not significantly degraded from the addition of new and modified industrial boilers. It is not expected that emissions from Project C4 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. No impacts on topography or geology would be expected. Short-term, minor, adverse, and long-term, beneficial impacts on soils would be expected from construction of the Base Operations Facility and demolition of the existing facility (Building 1). Short-term impacts would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching during construction and demolition activities. Long-term, beneficial impacts would be expected from the net decrease of impervious surfaces and restoration of the project area to match surrounding areas.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from construction of the Base Operations Facility and demolition of the existing facility (Building 1). Impacts on water resources from Project C4 would be similar to, but slightly less than, those discussed for Project C1, because Project C4 includes demolition of the existing facility (see **Section 4.4.2.1, Water Resources**). Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. Long-term, beneficial impacts on water resources would be expected from this project due to the decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. Additionally, upon completion of demolition activities, the project area would be restored and revegetated to match surrounding areas. There are no wetlands at or within the vicinity of the project area for Project C4; therefore, no impacts on wetland areas would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from construction of the Base Operations Facility and demolition of the existing facility (Building 1). Construction and demolition activities would require the permanent removal of vegetation (mostly maintained grasses). Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with construction and demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid construction areas. However, most wildlife species in the vicinity of construction and demolition activities would be expected to recover quickly once the construction and demolition noise and disturbances ceased.

No impacts on migratory birds would be expected. During construction and demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During construction and demolition activities, it is anticipated that protected and sensitive species would avoid the project areas and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground vibration disturbances. Fairchild AFB would implement institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policies.

Cultural Resources. The existing facility (Building 1) was constructed in 1943. Building 1 is identified as a contributing property to the installation's Flight Line Historic District and is considered NRHP-eligible. Demolition of Building 1 would adversely affect the setting of other contributing properties in the historic district and would adversely affect the historic district as a whole. Therefore, implementation of Project C4 would result in an adverse effect on NRHP-eligible properties at Fairchild AFB under Section 106 of the NHPA. As stated in **Section 4.3.7**, Fairchild AFB, in coordination with the

Washington SHPO, developed an MOA for demolition activities involving NRHP-eligible structures. The MOA is provided in **Appendix B**. In accordance with the MOA, the USAF would ensure stipulations listed in the MOA (e.g. building-specific mitigation, flightline-specific mitigation, public education and display, duration, post-review discoveries, monitoring and reporting, dispute resolution, amendments, termination, and Anti-Deficiency Act) are implemented for demolition of NRHP-eligible properties. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP and stipulations listed in the MOA would be implemented. In addition, the CRM would immediately contact interested Native American tribes.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from construction of the Base Operations Facility and demolition of the existing facility (Building 1) would be similar to those discussed for Project C1 (see **Section 4.4.2.1, *Socioeconomics and Environmental Justice***). Short-term, beneficial impacts on the local economy would be expected from construction of the Base Operations Facility and demolition of Building 1 due to expenditures associated with construction activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from construction and demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term, intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, central heating system, or liquid fuel supply would be expected from construction of the Base Operations Facility and demolition of the existing facility (Building 1). Impacts on the transportation network and from solid waste generation from Project C4 would be similar to, but slightly greater than, those discussed for Project C1, because Project C4 includes demolition of Building 1 (see **Section 4.4.2.1, *Infrastructure***).

Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the electrical supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water management, and communications systems would be expected from implementation of Project C4. Short-term service interruptions could be experienced when the existing utilities are disconnected from Building 1 and connected to the new distribution systems at the new Base Operations Facility. However, the discontinuation of utilities would be temporary and coordinated with area users. Long-term, beneficial impacts on utilities would be expected from the demolition of Building 1 with outdated systems and the construction of the new Base Operations Facility with updated, energy-efficient utilities and infrastructure. Any long-term increases in demand for utilities upon completion of new construction would be anticipated to be offset by the cessation of use in the demolished facility. Long-term, beneficial impacts on the storm water system would be expected from an overall net decrease in impervious surface area upon completion of Project C4. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments.

Hazardous Materials and Waste. Impacts associated with hazardous materials and waste from implementing Project C4 would be similar to, but slightly greater than, those discussed for Project C1, because Project C4 includes demolition of the existing facility (Building 1) (see **Section 4.4.2.1, *Hazardous Materials and Waste***). Short-term, negligible to minor, adverse impacts could be expected from ACM, LBP, and PCBs. Due to its age, Building 1 is assumed to contain ACM, LBP, and PCBs. Sampling for these materials should occur prior to commencement of demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Lead-Based Paint Management Plan, Hazardous Waste Management Plan, and USAF policy. Long-term, beneficial impacts would be expected due to the demolition of Building 1, resulting in less exposure to, and management of, ACM, LBP, and PCBs. No impacts would be expected from pesticides or radon. Radon testing at the project area could be used to determine the presence of radon and the need for a

radon mitigation system. The project area is located within ERP Site SS-39, where there is known groundwater contamination. No impacts on or from the contaminated groundwater associated with ERP Site SS-39 would be expected. Demolition and construction activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during construction of the new Base Operations Facility and demolition of the existing facility (Building 1). The project area would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from the project area would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected. The project area is located within ERP Site SS-39, where there is known groundwater contamination. Potential impacts on or from the ERP site are discussed further in the preceding paragraph. The project area for Project C4 is also located within a QD arc described in **Section 3.11.2**. Prior to implementation, Project C4 should be coordinated with Airfield Management and the installation Safety Office to avoid potential safety issues with construction workers. In addition, a waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of construction and demolition activities.

4.4.2.5 Project C5. Construct Airfield Communications Facility

Project C5 (Construct Airfield Communications Facility) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from construction of the Airfield Communications Facility.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). Impacts on the noise environment from Project C5 would be similar to, but slightly greater than, those discussed for Project C1 because Project C5 includes demolition of Buildings 1200 and 1201 (see **Section 4.4.2.1, Noise**). The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would not be operational during the entire construction and demolition period, which would limit the duration of increased noise levels. This area of Fairchild AFB is used for industrial functions. Populations potentially affected by the increased noise levels would include USAF personnel working in the adjacent industrial facilities approximately 200 feet from the project area. The closest personnel to the project area would experience noise levels of 78 to 82 dBA. Contractors and workers would be responsible for following noise regulations, in accordance with Federal, state and USAF guidelines.

Land Use. Long-term, beneficial impacts on land use would be expected from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). The new Airfield Communications Facility would be constructed within the industrial land use category. No changes to land use designation would be required for construction of the Airfield Communications Facility and demolition of Buildings 1200 and 1201. Project C5 and the associated land use would be consistent with the Fairchild LRDP, which identifies the future land use of the site as Industrial. The demolition of Buildings 1200 and 1201 would result in an overall decrease in impervious surface area and would contribute to the goal of reducing the physical plant footprint on the installation according to the “20/20 by 2020” initiative, resulting in beneficial impacts.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from the construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). Impacts on air quality from Project C5 would be similar to, but slightly greater than, those discussed for Project C1, because Project C5 includes demolition of Buildings

1200 and 1201 (see **Section 4.4.2.1, Air Quality**). Construction and demolition activities would result in minor impacts on local and regional air quality, primarily from site-disturbing activities and operation of construction equipment. Emissions from the construction of the Airfield Communications Facility and demolition of Buildings 1200 and 1201 are summarized in **Table 4-13**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-13. Estimated Air Emissions Resulting from Project C5

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	5.363	0.466	2.339	0.425	0.379	0.368	609.426
Construction Fugitive Dust	-	-	-	-	0.943	0.094	-
Haul Truck On-Road	0.142	0.103	0.417	0.011	0.169	0.044	35.907
Construction Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
Total C5 Emissions	5.604	0.668	3.647	0.438	1.500	0.512	763.667
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.015%	0.002%	0.001%	0.009%	0.002%	0.005%	0.010%

Note: * The estimated air emissions resulting from Project C5 includes both construction and demolition activities.

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Long-term, minor, adverse impacts on air quality would be expected from the use of natural gas boilers to provide comfort heating to the new Airfield Communications Facility. While these operating emissions would increase the overall air emissions from Fairchild AFB, it is anticipated that the added emissions would be offset by a reduction in air emissions from the demolition of Buildings 1200 and 1201. Emissions were not calculated for natural gas boilers at the proposed Airfield Communications Facility because they are subject to NSR requirements, which ensure that air quality is not significantly degraded from the addition of new and modified industrial boilers. It is not expected that emissions from Project C5 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. No impacts on topography or geology would be expected. Short-term, minor adverse, and long-term, beneficial impacts on soils would be expected from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). Short-term impacts would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching during construction and demolition activities. Long-term, beneficial impacts would be expected from the net decrease of impervious surfaces and restoration of the project area to match surrounding areas.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). Impacts on water resources from Project C5 would be similar to, but slightly less than, those discussed for Project C1, because Project C5 includes demolition of Buildings 1200 and 1201 (see **Section 4.4.2.1, Water Resources**). Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. Long-term, beneficial impacts on water resources would be expected from Project C5 due to the decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. Additionally, upon completion of demolition activities, the project

area would be restored and revegetated to match surrounding areas. There are no wetlands at or within the vicinity of the area for Project C5; therefore, no impacts on wetlands would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). Construction and demolition activities would require the permanent removal of vegetation (mostly maintained grasses). Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with construction and demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid construction areas. However, most wildlife species in the vicinity of construction and demolition activities would be expected to recover quickly once the construction and demolition noise and disturbances ceased.

No impacts on migratory birds would be expected. During construction and demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During construction and demolition activities, it is anticipated that protected and sensitive species would avoid the project areas and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground-vibration disturbances. Fairchild AFB would implement institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policies.

Cultural Resources. The existing facilities that would be demolished (Buildings 1200 and 1201) are not considered NRHP-eligible. Therefore, no impacts on historic properties would be expected. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201) would be similar to those discussed for Project C1 (see **Section 4.4.2.1, Socioeconomics and Environmental Justice**). Short-term, beneficial impacts on the local economy would be expected from construction of the Airfield Communications Facility and demolition of Buildings 1200 and 1201 due to expenditures associated with construction activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from construction and demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term, intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, central heating system, or liquid fuel supply would be expected from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). Impacts on the transportation network and from solid waste generation from Project C5 would be similar to, but slightly greater than, those discussed for Project C1, because Project C5 includes demolition of Buildings 1200 and 1201 (see **Section 4.4.2.1, Infrastructure**).

Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the electrical supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water management, and communications systems would be expected from construction of the Airfield Communications Facility and demolition of Buildings 1200 and 1201. Short-term service interruptions could be experienced when

the existing utilities are disconnected from Buildings 1200 and 1201 and connected to the new distribution systems at the Airfield Communications Facility. However, the discontinuation of utilities would be temporary and coordinated with area users. Long-term, beneficial impacts on utilities would be expected from the demolition of Buildings 1200 and 1201 with outdated systems and the construction of the new Airfield Communications Facility with updated, energy-efficient utilities and infrastructure. Any long-term increases in demand for utilities upon completion of new construction would be anticipated to be offset by the cessation of use in the demolished facilities. Long-term, beneficial impacts on the storm water system would be expected from an overall net decrease in impervious surface area upon completion of Project C5. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments.

Hazardous Materials and Waste. Impacts associated with hazardous materials and waste from construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201) would be similar to, but slightly greater than, those discussed for Project C1, because Project C5 includes demolition of Buildings 1200 and 1201 (see **Section 4.4.2.1, Hazardous Materials and Waste**). Short-term, negligible to minor, adverse impacts could be expected from ACM, LBP, and PCBs. Due to their age, Buildings 1200 and 1201 are assumed to contain ACM, LBP, and PCBs. Sampling for these materials should occur prior to commencement of demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Lead-Based Paint Management Plan, Hazardous Waste Management Plan, and USAF policy. Long-term, beneficial impacts would be expected due to the demolition of Buildings 1200 and 1201, resulting in less exposure to ACM, LBP, and PCBs. No impacts would be expected from pesticides, radon, or ERP sites. Radon testing at the project area could be used to determine the presence of radon and the need for a radon mitigation system.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during construction of the Airfield Communications Facility and demolition of the existing meteorological and navigation facility (Buildings 1200 and 1201). The project areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from the project areas would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected.

4.4.2.6 Project C6. Construct CES/CONS Complex

Project C6 (Construct CES/CONS Complex) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from construction of the CES/CONS Complex.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). Impacts on the noise environment from Project C6 would be similar to, but slightly greater than, those discussed for Project C1, because Project C6 includes demolition of Buildings 2025 and 2451 (see **Section 4.4.2.1, Noise**). The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would not be operational during the entire construction and demolition period, which would limit the duration of increased noise levels. This area of Fairchild AFB is used for industrial functions. Populations potentially affected by the increased noise levels would include USAF personnel working in and using the adjacent community facilities approximately 150 feet from the construction and demolition areas. The closest personnel to the project areas would experience noise levels of 81 to 85 dBA. Contractors and workers would be responsible for following noise regulations, in accordance with Federal, state and USAF guidelines.

Land Use. Long-term, negligible, adverse, and long-term, beneficial impacts on land use would be expected from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). The new CES/CONS Complex would be constructed within the industrial land use category. No changes to land use designation would be required from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). Project C6 and the associated land use would be consistent with the Fairchild AFB General Plan, which identifies the future land use of the project area as industrial. The demolition of Buildings 2025 and 2451 would result in an overall decrease in impervious surface area and would contribute to the goal of reducing the physical plant footprint on the installation according to the “20/20 by 2020” initiative, resulting in beneficial impacts. The area for Project C6 overlaps ERP Site SS-39, which has LUCs due to an orphan groundwater TCE plume. No impacts on or from the groundwater TCE plume would be expected as a result of construction of the new CES/CONS Complex or demolition of Buildings 2025 and 2451. LUCs currently in place prevent the use of groundwater potentially containing TCE and Carbon Tet. Access to the site is restricted and controlled by fencing and warning signs. Demolition and construction activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). Impacts on air quality from Project C6 would be similar to, but slightly greater than, those discussed for Project C1, because Project C6 includes demolition of Buildings 2025 and 2451 (see **Section 4.4.2.1, Air Quality**). Construction and demolition activities would result in minor impacts on local and regional air quality, primarily from site-disturbing activities and operation of construction equipment. Emissions from the construction of the CES/CONS Complex and demolition of Buildings 2025 and 2451 are summarized in **Table 4-14**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-14. Estimated Air Emissions Resulting from Project C6

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	9.479	0.917	3.967	0.760	0.628	0.609	1,089.049
Construction Fugitive Dust	-	-	-	-	10.317	1.032	-
Haul Truck On-Road	1.739	1.258	5.111	0.137	2.069	0.538	440.384
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Total C6 Emissions	11.350	2.307	10.268	0.899	13.027	2.187	1,687.211
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.031%	0.006%	0.004%	0.018%	0.018%	0.020%	0.023%

Note: * The estimated air emissions resulting from Project C6 includes both construction and demolition activities.

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Long-term, minor, adverse impacts on air quality would be expected from the use of natural gas boilers to provide comfort heating to the new CES/CONS Complex. While these operating emissions would increase the overall air emissions from Fairchild AFB, it is anticipated that the added emissions would be offset by a reduction in air emissions from the demolition of Buildings 2025 and 2451. Emissions were not calculated for natural gas boilers at the proposed CES/CONS Complex because they are subject to

NSR requirements, which ensure that air quality is not significantly degraded from the addition of new and modified industrial boilers. It is not expected that emissions from Project C6 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. No impacts on topography or geology would be expected. Short-term, minor, adverse, and long-term, beneficial impacts on soils would be expected from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). Short-term impacts would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching during construction and demolition activities. Long-term, beneficial impacts would be expected from the net decrease of impervious surfaces and restoration of the project area to match surrounding areas.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). Impacts on water resources from Project C6 would be similar to, but slightly less than, those discussed for Project C1, because Project C6 includes demolition of Buildings 2025 and 2451 (see **Section 4.4.2.1, Water Resources**). Potential impacts would be associated with soil erosion and sedimentation in receiving water bodies from the removal of vegetation. Long-term, beneficial impacts on water resources would be expected from Project C6 due to the decrease in impervious surface area. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. Additionally, upon completion of demolition activities, the project area would be restored and revegetated to match surrounding areas. There are no wetlands at or within the vicinity of the project area for Project C6; therefore, no impacts on wetland areas would be expected.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). Construction and demolition activities would require the permanent removal of vegetation (mostly maintained grasses). Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with construction and demolition activities and heavy equipment use. Loud noise events could cause wildlife to avoid construction areas. However, most wildlife species in the vicinity of construction and demolition activities would be expected to recover quickly once the construction and demolition noise and disturbances ceased.

No impacts on migratory birds would be expected. During construction and demolition activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During construction and demolition activities, it is anticipated that protected and sensitive species would avoid the project areas and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground vibration disturbances. Fairchild AFB would implement institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Cultural Resources. Building 2451 was constructed in 1943 and is not eligible for listing on the NRHP. Therefore, no impacts would be expected from demolition of Building 2451. Building 2025 was constructed in 1943 and is identified as an NRHP-eligible facility. Therefore, implementation of Project C6 would result in an adverse effect on NRHP-eligible properties at Fairchild AFB under Section 106 of the NHPA. As stated in **Section 4.3.7**, Fairchild AFB, in coordination with the Washington SHPO, developed an MOA for demolition activities involving NRHP-eligible structures. The MOA is provided

in **Appendix B**. In accordance with the MOA, the USAF would ensure stipulations listed in the MOA (e.g. building-specific mitigation, flightline-specific mitigation, public education and display, duration, post-review discoveries, monitoring and reporting, dispute resolution, amendments, termination, and Anti-Deficiency Act) are implemented for demolition of NRHP-eligible properties. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP and stipulations listed in the MOA would be implemented. In addition, the CRM would immediately contact interested Native American tribes.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451) would be similar to those discussed for Project C1 (see **Section 4.4.2.1, *Socioeconomics and Environmental Justice***). Short-term, beneficial impacts on the local economy would be expected from construction of the CES/CONS Complex and the demolition of Buildings 2025 and 2451 due to expenditures associated with construction and demolition activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from construction and demolition activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, central heating system, or liquid fuel supply would be expected from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). Impacts on the transportation network and from solid waste generation from Project C6 would be similar to, but slightly greater than, those discussed for Project C1, because Project C6 includes demolition of Buildings 2025 and 2451 (see **Section 4.4.2.1, *Infrastructure***).

Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the electrical supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water management, and communications systems would be expected from construction of the CES/CONS Complex and the demolition of Buildings 2025 and 2451. Short-term service interruptions could be experienced when the existing utilities are disconnected from Buildings 2025 and 2451 and connected to the new distribution systems at the new CES/CONS Complex. However, the discontinuation of utilities would be temporary and coordinated with area users. Long-term, beneficial impacts on utilities would be expected from the demolition of Buildings 2025 and 2451 with outdated systems and the construction of the new CES/CONS Complex with updated, energy-efficient utilities and infrastructure. Any long-term increases in demand for utilities upon completion of new construction would be anticipated to be offset by the cessation of use in the demolished facilities. Long-term, beneficial impacts on the storm water system would be expected from an overall net decrease in impervious surface area upon completion of Project C6. The decrease in impervious surfaces would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments.

Hazardous Materials and Waste. Impacts associated with hazardous materials and waste from construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451) would be similar to, but slightly greater than, those discussed for Project C1, because Project C6 includes demolition of Buildings 2025 and 2451 (see **Section 4.4.2.1, *Hazardous Materials and Waste***). Short-term, negligible, adverse impacts associated with hazardous waste management would be expected because Building 2451 contains an SAP, battery accumulation site, and a 700-gallon OWS, and Building 2025 contains an 800-gallon OWS. The SAP and battery accumulation site would require relocation and the OWSs at Buildings 2451 and 2025 would require cleaning and closure prior to implementation of Project C6. Long-term, beneficial impacts on ASTs associated with Building 2025 would be expected. As a part of construction activities, the three ASTs would be emptied

of their contents and either moved to the new facilities or replaced with modern, new storage tanks, resulting in beneficial impacts. Because of their age, Buildings 2451 and 2025 are assumed to contain ACM, LBP, and PCBs. Sampling for these materials should occur prior to commencement of demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Lead-Based Paint Management Plan, Hazardous Waste Management Plan, and USAF policy. Long-term, beneficial impacts would be expected due to the demolition of Buildings 2025 and 2451, resulting in less exposure to ACM, LBP, and PCBs.

The project area is within ERP sites SS-39 and SD-37. There is known groundwater contamination at ERP Site SS-39 and known soil and groundwater contamination at ERP Site SD-37. No impacts on or from the contaminated groundwater associated with ERP sites SS-39 or SD-37 would be expected. Demolition and construction activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present. However, prior to commencement of demolition and construction activities, the project area should be surveyed for soil contamination associated with ERP Site SD-37. If contaminated soil is encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during construction of the CES/CONS Complex and the demolition of existing World War II-era facilities (Buildings 2025 and 2451). The project areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from the project area would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected. The project area is within ERP sites SS-39 and SD-37. There is known groundwater contamination at ERP Site SS-39 and known soil and groundwater contamination at ERP Site SD-37. Potential impacts on or from the ERP sites are discussed further in the preceding paragraph.

4.4.3 Selected Infrastructure Improvement Projects

4.4.3.1 Project I1. Repair Electrical Power South Substation

Project I1 (Repair Electrical Power South Substation) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from the repair of the Electrical Power South Substation.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected as a result of Project I1. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. **Table 3-2** shows the predicted noise levels for various pieces of construction equipment 50 feet from the source, and **Table 4-1** shows estimated noise levels that would be expected at varying distances from a construction site. Heavy construction equipment would not be operational during the entire construction and demolition period, which would limit the duration of increased noise levels. This area of Fairchild AFB is used for industrial functions. Populations potentially affected by the increased noise levels would include USAF personnel working in and using the adjacent industrial facilities approximately 300 feet from the construction and demolition site. The closest personnel to the site would experience noise levels of 75 to 79 dBA. Contractors and workers are responsible to follow noise regulations in accordance with Federal, state, and USAF guidelines.

Land Use. No impacts on land use would be expected from implementation of Project I1. The Electrical Power South Substation is within the industrial land use category. No changes to land use designation

would be required. This project and associated land use would be consistent with the Fairchild AFB LRDP, which designates the future land use at the project area as industrial.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from the repair of Electrical Power South Substation. Construction of two new ducts and demolition and replacement of upgraded cable would result in minor impacts on local and regional air quality during construction and demolition activities, primarily from site-disturbing activities and operation of construction equipment. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction operations would be temporary in nature. It is not expected that emissions from the repair of Electric Power South Substation would contribute to or affect local or regional attainment status with the NAAQS. Emissions from the repair of the Electrical Power South Substation are summarized in **Table 4-15**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be expected as a result of Project I1.

Table 4-15. Estimated Air Emissions Resulting from Project I1

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	4.748	0.377	2.094	0.376	0.341	0.331	538.212
Construction Fugitive Dust	-	-	-	-	0.785	0.079	-
Haul Truck On-Road	0.012	0.009	0.035	0.001	0.014	0.004	3.023
Construction Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
Total I1 Emissions	4.826	0.452	2.724	0.378	1.146	0.418	620.124
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.013%	0.001%	0.001%	0.008%	0.002%	0.004%	0.008%

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. No impacts on topography or geology would be expected. Short- and long-term, negligible to minor, adverse impacts on soils would be expected from the repairs to the Electrical Power South Substation. Short-term impacts would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching during construction activities. Vegetative clearing would increase erosion and the potential for sedimentation.

As a result of constructing the new overhead lines, concrete separators, ducts, and manholes, long-term, minor, adverse impacts would occur as soils would be compacted, and soil structure disturbed and modified. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and would be eliminated in those areas within the footprints of roadways. Loss of soil structure due to compaction from foot and vehicle traffic could change local drainage patterns. Soil erosion- and sediment-control measures would be included in site plans to minimize long-term erosion and sediment production at each site. Use of storm water-control measures that favor reinfiltration would minimize erosion and sediment production from future storm events.

Water Resources. Short-term, minor, adverse impacts would be expected from the removal of vegetation and grading and excavation of soil resulting in increased soil erosion, sedimentation, and storm water runoff volume and velocity. Potential impacts on water resources would be expected from an increase in soil compaction from heavy equipment and topsoil removal. Maintaining onsite storm water infiltration

during renovation activities would allow groundwater to recharge and minimize storm water runoff. Potentially adverse impacts on water resources would be mitigated by following institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy. There are no wetlands at or within the vicinity of the project area for Project I1; therefore, no impacts on wetlands would be expected.

In the event of a spill or leak of fuel or other contaminants, there could be adverse impacts on the receiving water bodies. However, all fuels and other potentially hazardous materials would be contained, stored, and managed appropriately. Environmental protection measures would minimize the potential for and extent of associated contamination.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from temporary disturbances (e.g., trampling and limited removal) on adjoining lands and from use of heavy equipment during activities. Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with renovation activities and heavy equipment use during implementation of the Project I1. Loud noise events could cause wildlife to avoid construction areas. However, most wildlife species in the vicinity of construction activities would be expected to recover quickly once the construction noise and disturbances ceased. Therefore, no long-term, adverse impacts on wildlife would be expected.

No impacts on migratory birds would be expected. During repair activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During repair activities, it is anticipated that protected and sensitive species would avoid the project areas and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground vibration disturbances. Fairchild AFB would implement institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policies.

Cultural Resources. The existing facility that would be repaired under Project I1 (Building 1270) is not considered NRHP-eligible. Therefore, no impacts on historic properties would be expected. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Short-term, beneficial impacts on the local economy would be expected from implementation of Project I1 due to expenditures associated with renovation activities. It is anticipated that Spokane County, Washington, would be able to meet the needs of Project I1 for obtaining local equipment, supplies, and contractors. The demand for contractors during implementation of Project I1 would be minor and would not be expected to exceed the existing capacity of the local supply of contractors in Spokane County (approximately 6,300 construction workers). Short-term increases in local business volume and employment within the ROI would be expected. Implementation of Project I1 would occur entirely on Fairchild AFB. Possible adverse impacts from renovation activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, transportation network, central heating system, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water system, or communications system; or from solid waste generation would be expected from implementation of

Project I1. Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the electrical supply would be expected from implementation of Project I1. Short-term service interruptions could be experienced when the existing electrical system is disconnected from the distribution system during repairs. However, the discontinuation of electrical power would be temporary and coordinated with area users. Long-term, beneficial impacts on the electrical supply would be expected from the installation of new updated, energy-efficient utilities and infrastructure.

Hazardous Materials and Waste. Short-term, minor, adverse impacts associated with hazardous materials and waste would be expected from implementation of Project I1. There would be a short-term increase in the use of hazardous materials and the generation of hazardous wastes associated with renovation activities. In addition, the existing Electrical Power South Substation could have PCB-containing transformers. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Fairchild AFB Hazardous Materials Management Process; Fairchild AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the Environmental Office via the contracting officer, including pertinent information (e.g., Material Safety Data Sheets). Long-term, beneficial impacts would be expected from the removal of PCB-containing materials, which would result in less exposure to, and management of, PCBs. No long-term, adverse impacts associated with hazardous materials management or hazardous waste generation would be expected as a result of Project I1. No impacts would be expected from ACM, LBP, pesticides, radon, or ERP sites.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during implementation of Project I1. Renovation activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Renovation areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from the project area would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected.

4.4.3.2 Project I2. Repair/Right-size Airfield: Multiple Areas

Project I2 (Repair/Right-size Airfield: Multiple Areas) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected. No significant impacts would be expected from the repair of multiple areas of the airfield.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected as a result of Project I2. Impacts on the noise environment from Project I2 would be similar to those discussed for Project I1 (see **Section 4.4.3.1, Noise**). The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would not be operational during the entire construction and demolition period, which would limit the duration of increased noise levels. These areas of Fairchild AFB are used as airfield pavements and for airfield functions. Populations potentially affected by the increased noise levels would include USAF personnel working in the adjacent airfield, airfield operations and maintenance, and industrial facilities approximately 200 to 500 feet from the construction and demolition sites. The closest personnel to the site would experience noise levels of 78 to 82 dBA.

Land Use. No impacts on land use would be expected from implementation of Project I2. The project areas for Project I2 are within the airfield land use category. No changes to land use designation would be required. This project and associated land use would be consistent with the Fairchild AFB LRDP, which designates the future land use at the project areas as airfield. The project area for Project I2 overlaps ERP Site SS-39, which has land use controls due to an orphan groundwater TCE plume. No

impacts on or from the groundwater TCE plume would be expected as a result of implementation of Project I2. LUCs currently in place prevent the use of groundwater potentially containing TCE and Carbon Tet. Access to the site is restricted and controlled by fencing and warning signs. Repair activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected as a result of Project I2. Impacts on air quality from Project I2 would be similar to, but slightly greater than, those discussed for Project I1, due to the project footprint (see **Section 4.4.3.1, Air Quality**). The replacement of airfield pavements would result in minor impacts on local and regional air quality during construction and demolition activities, primarily from site-disturbing activities and operation of construction equipment. Emissions from repairs to the airfield are summarized in **Table 4-16**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be expected as a result of Project I2.

Table 4-16. Estimated Air Emissions Resulting from Project I2

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	16.264	0.961	6.462	1.332	0.985	0.955	1,908.213
Construction Fugitive Dust	-	-	-	-	65.801	6.580	-
Haul Truck On-Road	0.935	0.676	2.748	0.074	1.112	0.289	236.762
Construction Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
Total I2 Emissions	17.298	1.736	10.102	1.407	67.907	7.830	2,263.309
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.048%	0.005%	0.004%	0.029%	0.096%	0.072%	0.031%

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. No impacts on topography or geology would be expected. Short-term, negligible to minor, adverse impacts on soils would be expected as a result of Project I2. Short-term impacts would result from disturbance of soils, grading, paving, and excavation or trenching during construction activities.

Water Resources. Short-term, minor, adverse impacts would be expected from the grading and excavation of soil for Project I2. Construction activities would have the potential to increase runoff temporarily from the construction site into receiving water bodies. There would be no change in impervious surface area upon completion of Project I2. There are no wetlands at or within the vicinity of the area for Project I2; therefore, no impacts on wetlands would be expected.

Biological Resources. No impacts on vegetation from Project I2 would be expected. Short-term, negligible, indirect, adverse impacts could be expected from implementation of Project I2 on wildlife and migratory birds. Seasonal water in drainage ditches and the large amount of open fields adjacent to the paved runways in the airfield provide some habitat value. However, this area is mainly of low value to wildlife due to the lack of foraging resources. Because the airfield is composed mainly of man-made structures (i.e., taxiways, parking aprons, an alert area, and a runway), wildlife is not encouraged in this area. No impacts on protected or sensitive species would be expected.

Cultural Resources. No impacts on historic properties would be expected from implementation of Project I2. The repair activities would not be conducted in any areas with architectural resources eligible for the NRHP. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Impacts on socioeconomics and environmental justice from Project I2 would be similar to those discussed for Project I1 (see **Section 4.4.3.1, Socioeconomics and Environmental Justice**). Short-term, beneficial impacts on the local economy would be expected from Project I2 due to expenditures associated with construction activities. Short-term increases in local business volume and employment within the ROI would be expected. Possible adverse impacts from repair activities could include increased traffic and noise levels and decreased air quality; however, these impacts would be short-term and intermittent, and would likely only affect on-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the transportation network, electrical system, central heating system, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water system, or communications system; or from solid waste generation would be expected from implementation of Project I2. Long-term, beneficial impacts on the airfield would be expected from implementation of Project I2, as the airfield would be improved and better suited to meet mission requirements.

Hazardous Materials and Waste. Impacts associated with hazardous materials and waste from implementing Project I2 would be similar to, but slightly greater than, those discussed for Project I1, due to the project footprint (see **Section 4.4.3.1, Hazardous Materials and Waste**).

The project areas are located within ERP sites SS-39, OW048, OW049, OW050, OW051, OW052, OW053, and OW058. There is known groundwater contamination at ERP Site SS-39; potential groundwater contamination at ERP sites OW048, OW049, OW050, OW051, and OW052; and known soil contamination at ERP sites OW048, OW049, OW050, OW051, OW052, OW053, and OW058. No impacts on or from the contaminated or potentially contaminated groundwater associated with ERP sites SS-39, OW048, OW049, OW050, OW051, or OW052 would be expected. Repair activities are not expected to come in contact with the shallow groundwater aquifer, where groundwater contamination is present. However, prior to implementation of Project I2, the project areas should be surveyed for soil contamination associated with ERP sites OW048, OW049, OW050, OW051, OW052, OW053, and OW058. If contaminated soil is encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during repair activities. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected. The project areas are located within ERP sites SS-39, OW048, OW049, OW050, OW051, OW052, OW053, and OW058. Potential impacts on or from the ERP sites are discussed further in the preceding paragraph. The Repairs to Taxiway G and Taxilane J would occur within the Explosive Combat Aircraft parking QD arc associated with the flightline area. Prior to implementation, Project I2 should be coordinated with Airfield Management and the installation Safety Office to avoid potential safety issues with construction workers. In addition, a waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of repair activities.

4.4.4 Selected Natural Infrastructure Management Projects

4.4.4.1 Project NI1. Prairie Restoration/Long-term Weed Control Phase I/Phase II

Project NI1 (Prairie Restoration/Long-term Weed Control Phase I/Phase II) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected.

Noise. No impacts on the noise environment would be expected, as there would be no use of construction or demolition equipment.

Land Use. Long-term, beneficial impacts on land use would be expected from implementation of Project NI1. The location of the restoration spans open space and industrial land use categories. This project would require a land use change for those portions of the project that are in the industrial category. This project and associated land use would be consistent with the Fairchild LRDP, which identifies the future land use of the site as open space. Currently, there are LUCs in place for ERP Site OT-15, which prevent the use of soil potentially containing lead. Access to the site is restricted and controlled by fencing and warning signs. No impacts on or from LUCs at this site would be expected because Project NI1 does not include any ground-breaking activities (e.g., excavation, trenching) that would disturb soils.

Air Quality. Short-term, negligible, adverse impacts on air quality would be expected from implementation of Project NI1. Restoration activities would result in negligible impacts on local and regional air quality, primarily from construction commuters. All emissions associated with Project NI1 would be temporary in nature. It is not expected that emissions from the prairie restoration would contribute to or affect local or regional attainment status with the NAAQS. Emissions from Project NI1 are summarized in **Table 4-17**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be expected as a result of Project NI1.

Table 4-17. Estimated Air Emissions Resulting from Project NI1

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	-	-	-	-	-	-	-
Construction Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	-	-	-	-	-	-	-
Construction Commuter	0.033	0.033	0.297	0.0004	0.003	0.002	39.445
Total NI1 Emissions	0.033	0.033	0.297	0.0004	0.003	0.002	39.445
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.0001%	0.0001%	0.0001%	0.00001%	0.000004%	0.00002%	0.001%

Note: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. No impacts on topography or geology would be anticipated. Short-term, negligible, adverse impacts on soils would be expected from the use of chemical herbicides associated with Project NI1. In the event of a spill or leak of fuel or other contaminants, there could be adverse impacts on the receiving water bodies. However, all fuels and other potentially hazardous materials would be contained, stored, and managed appropriately. Environmental protection measures would minimize the potential for and extent of associated contamination. Long-term, beneficial impacts on soils would be expected from implementation of Project NI1. A sound native plant community would help to minimize erosion, protect the natural hydrology of the site, and increase soil productivity when compared to areas of disturbed soils or invasive weeds.

Water Resources. Short-term, minor, adverse, and long-term, beneficial impacts on water resources would be expected from Project NI1. Short-term, minor, adverse impacts would be expected from herbicide application to control weeds and from the direct removal of existing vegetation resulting in sedimentation. Potential impacts would be minimized by implementing environmental protection measures and BMPs described in the installation's INRMP (FAFB 2010b) and Pest Management Plan (FAFB 2011). Project NI1 would involve construction activities in wetlands (32 CFR § 989); therefore, this project would require a FONSI/FONPA to be prepared and approved by HQ AMC. Several wetlands are located at the northern, southern, and western portions of the project area for Project NI1. Impacts on wetlands from this project would not be considered significant. To minimize potential impacts on water resources, all pest management operations would follow label directions. In addition, a Section 404 permit would need to be obtained from the USACE to address potential impacts on wetland areas and to determine minimization measures, if required. Long-term, beneficial impacts on water resources would be expected from the restoration of native vegetation. Native vegetation filters storm water runoff, thereby improving the water quality in wetlands, and reducing soil erosion by stabilizing soils with deep root systems.

Biological Resources. Long-term, beneficial impacts on vegetation, wildlife, and migratory birds threatened and endangered species and species of concern would be expected. Project NI1 entails prairie restoration and long-term weed-control in the southernmost portion of Fairchild AFB where the Flora Special Species Management Area is located (see **Figure 2-2**). This area of the installation is known to contain Spalding's catchfly and its associated habitat. In February 2007, Fairchild AFB submitted a BA to the USFWS to address weed control and habitat protection using herbicide treatment within a small conservation area for Spalding's catchfly on Fairchild AFB. The BA concluded that these activities "may affect, but not likely to adversely affect" the population and may positively affect the habitat increasing the potential for further recovery. In May 2007, Fairchild AFB received concurrence from the USFWS that the proposed activities, as described in the BA, are "not likely to adversely affect" Spalding's catchfly. Range-wide recovery actions proposed by the Draft Recovery Plan for Spalding's catchfly are detailed in the BA. Upon completion of Project NI1, the quantity of noxious weeds would be reduced and native vegetation would be restored. All pesticide applicators would comply with all Federal, state, local, and USAF directives.

Cultural Resources. No impacts on cultural resources would be expected as there are no known historic properties or archaeological resources present in the project area.

Socioeconomics and Environmental Justice. Short-term, beneficial impacts on socioeconomics would be expected from implementation of Project NI1. Restoration activities would include long-term weed control. It is assumed that equipment and supplies necessary to complete the prairie restoration activities primarily would be obtained locally, and local contractors would primarily be used. The demand for workers as part of the prairie restoration would be negligible and would not outstrip the local supply of workers in the region. Implementation of Project NI1 would occur entirely on Fairchild AFB. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, transportation network, electrical system, central heating system, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water system, or communications system; or from solid waste generation would be expected from implementation of Project NI1.

Hazardous Materials and Waste. No impacts associated with hazardous materials and wastes, petroleum products and wastes, ACM, LBP, PCBs, or radon would be expected from implementation of Project NI1. The project area is located within ERP Site OT-15, an operational range. There is known soil contamination at ERP Site OT-15, which could result in increased exposure during the implementation of Project NI1. Active use of the range precludes and has precluded the cleanup of ERP Site OT-15 until the range is closed. Prior to implementation of Project NI1, the project area should be surveyed for soil contamination. If contaminated soil is encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, negligible to minor, adverse impacts on safety would be expected from Project NI1. Short-term, minor, adverse impacts would be associated with the application of herbicides in the project area. However, impacts would be minimized as all pesticide applicators would comply with all Federal, state, local, and USAF directives. The project area is located within ERP Site OT-15, an operational range. Potential impacts on or from the ERP site are discussed further in the preceding paragraph. Activities conducted under Project NI1 would have the potential to be within QD arcs described in **Section 3.11.2**. To avoid potential impacts on construction workers and the installation mission, Project NI1 should be coordinated with Airfield Management and the installation Safety Office. A waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of prairie restoration activities.

4.4.5 Selected Strategic Sustainability Performance Projects

4.4.5.1 Project S1. Repair/Replace Heating, GSHP-Boiler Hybrid, AFOSI Building 644

Project S1 (Repair/Replace Heating, GSHP-Boiler Hybrid, AFOSI Building 644) would not result in significant impacts. The following subsections break down by resource areas the potential impacts that would be expected.

Noise. Short-term, minor, adverse impacts on the noise environment would be expected as a result of the replacement of four existing boilers at Building 644. The noise emanating from removal and replacement equipment would be localized, short-term, and intermittent during machinery operations. **Table 3-2** shows the predicted noise levels for various pieces of construction equipment 50 feet from the source, and **Table 4-1** shows estimated noise levels that would be expected at varying distances from a construction site. Construction equipment would not be operational during the entire removal and replacement period, which would limit the duration of increased noise levels. This area of Fairchild AFB is used for administrative functions. Populations potentially affected by the increased noise levels would include USAF personnel working in Building 644 and USAF personnel working in the adjacent Administration facilities approximately 300 feet from the site. The closest personnel to the site would experience noise levels of 75 to 79 dBA.

Land Use. No impacts on land use would be expected. Building 644 is currently within the administrative land use category. No changes to land use designation would be required. This project and associated land use would be consistent with the Fairchild AFB LRDP, which designates the future land use at the project area as administrative.

Air Quality. Short-term, minor, adverse impacts on air quality would be expected from implementation of Project S1. Repair activities would result in minor impacts on local and regional air quality, primarily from operation of equipment. All emissions associated with repair operations would be temporary in nature. It is not expected that emissions from the repair activities would contribute to or affect local or regional attainment status with the NAAQS. Emissions from the repair of the GSHP-Boiler Hybrid at Building 644 are summarized in **Table 4-18**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be produced as a result of Project S1.

Table 4-18. Estimated Air Emissions Resulting from Project S1

Activity	NO _x tpy	VOC tpy	CO tpy	SO ₂ tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO ₂ tpy
Construction Combustion	-	-	-	-	-	-	-
Construction Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	0.004	0.003	0.013	0.000	0.005	0.001	1.109
Construction Commuter	0.050	0.049	0.446	0.001	0.005	0.003	59.167
Total S1 Emissions	0.054	0.052	0.459	0.001	0.010	0.004	60.276
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Percent of EWNII AQCR Inventory	0.0001%	0.0001%	0.0002%	0.00002%	0.00001%	0.00004%	0.001%

Note: EWNII = Eastern Washington-Northern Idaho Interstate

Geological Resources. No impacts on topography or geology would be anticipated. Short-term, negligible, adverse impacts on soils would be expected from the installation of the proposed GSHP system and repair of the heating systems in Building 644. Soils would be compacted and soil structure would be disturbed and modified by the construction of the system's below-grade components. However, soils located under Building 644 have been previously disturbed by construction, and therefore, no significant impacts would be expected.

Water Resources. Short-term, direct, negligible, adverse impacts would be expected from an increase in soil compaction from heavy equipment used during repair activities. Upon completion of Project S1, there would be no change in impervious surface areas and the area would be revegetated, as appropriate. There are no wetlands at or within the vicinity of the project area for Project S1; therefore, no impacts on wetland areas would be expected. In the event of a spill or leak of fuel or other contaminants, there could be adverse impacts on the receiving water bodies. However, all fuels and other potentially hazardous materials would be contained, stored, and managed appropriately. Environmental protection measures would minimize the potential for and extent of associated contamination.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would be expected from implementation of Project S1. Potential impacts would be associated with temporary disturbances (e.g., trampling and limited vegetation removal) on adjoining lands and the use of heavy equipment

during renovation activities. Short-term, negligible, direct and indirect, adverse impacts on wildlife would be expected due to temporary disturbances from noise associated with renovation activities and heavy equipment use during implementation of the Project S1. Loud noise events could cause wildlife to avoid project areas. The project for Project S1 is in the northern portion of the installation in an improved area of Fairchild AFB where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species in the vicinity of the project area would be expected to recover quickly once the demolition noise and disturbances ceased. Therefore, no long-term, adverse impacts on wildlife would be expected.

No impacts on migratory birds would be expected. During construction activities, it is anticipated that migratory birds would avoid the project area and would use other areas of the installation.

No impacts on protected and sensitive species would be expected. During construction activities, it is anticipated that protected and sensitive species would avoid the project areas and would use other areas of the installation. Additionally, Fairchild AFB is moderately developed; therefore, any threatened and endangered species or species of concern would be habituated to noise and ground-vibration disturbances. Fairchild AFB would implement institutional management requirements identified in the installation's INRMP (FAFB 2010b); Base Design Standards; Fairchild AFB Construction Standards; and all applicable Federal, state, and local regulations and policy.

Cultural Resources. No impacts on historic properties would be expected from implementation of Project S1. The repair activities would not be conducted in any areas with architectural resources eligible for the NRHP. If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP would be implemented.

Socioeconomics and Environmental Justice. Short-term, negligible, beneficial impacts on socioeconomic resources would be expected from implementation of Project S1. It is assumed that equipment and supplies necessary to complete the repair activities would primarily be obtained locally, and local contractors would primarily be used. The demand for workers as part of the repair activities would be negligible and would not outstrip the local supply of workers in the region. Implementation of Project S1 would occur entirely on Fairchild AFB. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

Infrastructure. No impacts on the airfield, transportation network, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater system, storm water system, or communications system; or from solid waste generation would be expected from implementation of Project S1. Short-term, negligible to minor, adverse, and long-term, beneficial impacts on the electrical supply and central heating system would be expected from implementation of Project I1. Short-term service interruptions could be experienced when the existing electrical system and central heating system is disconnected from the distribution system during repairs. However, the discontinuation of these utilities would be temporary and coordinated with area users. Long-term, beneficial impacts on utilities would be expected from the installation of new updated, energy-efficient utilities.

Hazardous Materials and Waste. Short-term, minor, adverse impacts associated with hazardous materials and waste would be expected from implementation of Project S1. There would be a short-term increase in the use of hazardous materials and the generation of hazardous wastes associated with renovation activities. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Fairchild AFB Hazardous Materials Management Process; Fairchild AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to Environmental Office via the contracting officer, including pertinent information (e.g., Material Safety Data Sheets). No long-term, adverse

impacts associated with hazardous materials management or hazardous waste generation would be expected as a result of Project S1. Because of its age, Building 644 is assumed to contain boilers containing asbestos. Sampling for ACM in the existing boilers should occur prior to commencement of any renovation activities so that it can be properly characterized, handled, and disposed of in accordance with the Fairchild AFB Hazardous Waste Management Plan and USAF policy. Long-term, beneficial impacts would be expected due to the elimination of the aged boilers, resulting in less exposure to, and maintenance of ACM. No impacts would be expected from LBP, PCBs, pesticides, or radon. The project area is located within ERP Site TU502, where there is known soil and groundwater contamination. The soil and groundwater contamination at the site could potentially impact the project and the potential use of a GSHP system. Prior to implementation of Project S1, the project area should be surveyed for soil and groundwater contamination. If contaminated soil or groundwater is encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Safety. Short-term, negligible to minor, adverse impacts associated with safety could occur during implementation of Project S1. The project area is located within ERP Site TU502. Potential impacts on or from the ERP site are discussed in the preceding paragraph. Renovation activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Renovation areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting materials to and from the project area would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse impacts on safety would be expected.

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5. Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis in an EA should consider the potential environmental effects resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). CEQ guidance in considering cumulative effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with a proposed action. The scope must consider other projects that coincide with the location and timetable of a proposed action and other actions. Cumulative effects analyses must also evaluate the nature of interactions among these actions (CEQ 1997).

5.1.1 Projects Identified with the Potential for Cumulative Effects

The scope of the cumulative effects analysis involves both timeframe and geographic extent in which effects could be expected to occur, and a description of what resources could be cumulatively affected. For the purposes of this analysis, the temporal span of the Proposed Action is 5 years (i.e., 2013 to 2018). For most resources, the spatial area for consideration of cumulative effects is Fairchild AFB, though a larger area is considered for some resources. An effort was undertaken to identify projects at Fairchild AFB and in the areas surrounding the installation for evaluation in the context of the cumulative effects analysis. This was further developed through review of public documents and information gained from the coordination with various applicable agencies.

5.1.1.1 Past Actions at Fairchild AFB

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project area. Fairchild AFB was constructed in 1942 and named the Spokane Air Depot while it served as a repair depot for damaged aircraft during World War II. The installation’s boundaries have increased more than three times in size since its initial construction, and the facilities and infrastructure have undergone several major periods of construction and reconstruction to accommodate student training loads and new missions and commands (FAFB 2010a). For many resource areas, such as biological resources and hazardous materials and waste, the effects of past actions are now part of the existing environment and are included in the description of the affected environment.

In 2007, HQ AMC and 92 ARW prepared an IDEA and FONSI analyzing 11 demolition projects, 28 facilities construction and renovation projects, and 4 infrastructure projects, all spanning 5 years. The 2007 IDEA identified short-term, minor, adverse effects localized to construction areas on the noise environment, air quality, safety, geological resources, water resources, biological resources, and hazardous materials and wastes. Short-term, indirect, minor, beneficial effects on socioeconomics would also occur on the local community from construction costs; however, expenditures associated with construction have no long-lasting community benefits. Long-term, direct, minor, beneficial effects on land use, safety, and infrastructure would be expected from the construction of new facilities and demolition of existing facilities on the installation. Short-term, minor, adverse and long-term, minor, beneficial effects would be expected as a result of the removal of ACM and LBP in older buildings. No short- or long-term effects on wetlands, threatened and endangered species, archaeological resources, or historic architectural resources were identified. Construction, demolition, and infrastructure upgrades are a continuously occurring activity at Fairchild AFB. The 92 ARW projects added a maximum of 8.29 acres of impervious surfaces (FAFB 2007a). Old buildings were removed, existing facilities were repaired and expanded, and new facilities were constructed, resulting in better land use function and organization.

In 2009, the 92 ARW completed an *Environmental Assessment Addressing the Repair of Runway 05-23 at Fairchild Air Force Base, Washington* (“2009 Runway Repair EA”) (FAFB 2009b). The 2009 Runway Repair EA analyzed two distinct actions: repairing Runway 05/23 and replacing airfield lighting systems; and the temporary relocation of aircraft, personnel, and equipment during Runway 05/23 closure. The 2009 Runway Repair EA identified short-term, minor, adverse effects localized to the runway on the noise environment, air quality, safety, geological resources, water resources, biological resources, and hazardous materials and wastes. The 2009 Runway Repair EA also identified long-term, direct, minor, beneficial effects on safety and infrastructure from the replacement of aged concrete slabs, airfield lighting, and electrical systems. Short-term, minor, adverse and long-term, minor, beneficial effects would be expected as a result of the removal of ACM and LBP. No short- or long-term effects on wetlands, threatened and endangered species, archaeological resources, or historic architectural resources were identified.

5.1.1.2 Present and Reasonably Foreseeable Future Actions at Fairchild AFB

Many installation development projects are planned and reasonably foreseeable at Fairchild AFB. **Appendix A** is a compilation of all demolition (**Table A-1**), construction (**Table A-2**), infrastructure improvement (**Table A-3**), natural infrastructure (**Table A-4**), and strategic sustainability performance projects (**Table A-5**) that could be completed during the next 5 FYs (FY 2013 to FY 2018), as funding becomes available. These projects are reasonably foreseeable, and so they are included in this cumulative effects analysis. **Table 5-1** summarizes the areas of disturbance and changes in impervious surfaces from the Proposed Action and all other present and reasonably foreseeable future installation development activities that have been identified to date.

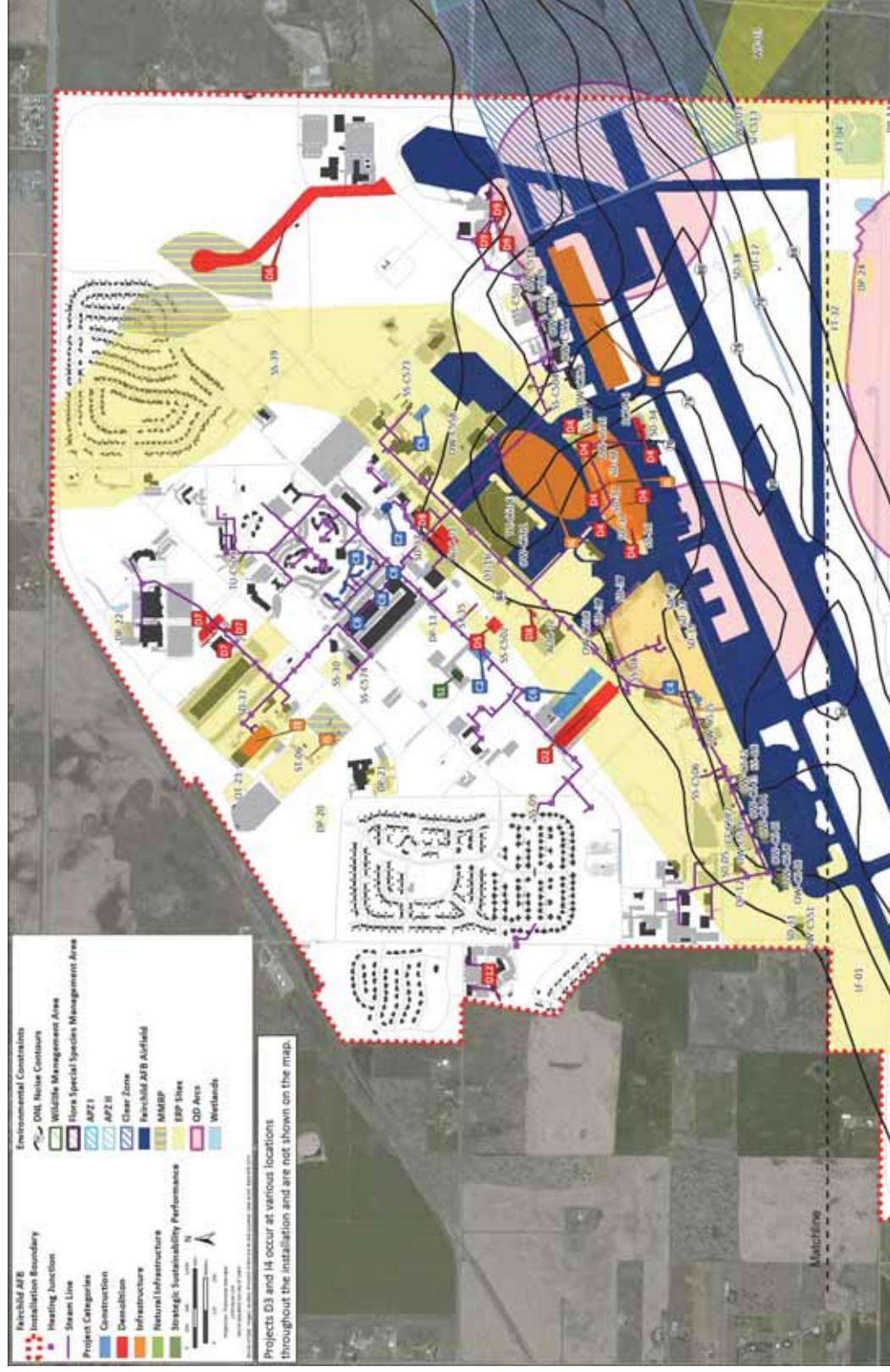
Table 5-1. Project Areas and Changes in Impervious Surface for all Present and Reasonably Foreseeable Future Actions (including the Proposed Action)

Project Type	Total Project Area (ft ²)	Change in Impervious Surfaces (ft ²)
Proposed Action ¹	1,918,448	-640,576
All Other Demolition Projects ²	340,342	-396,642
All Other Construction Projects ³	288,849	-32,715
All Other Infrastructure Improvement Projects ⁴	70,110	0
Total of All Projects	2,617,749	-1,069,933

Notes: Changes in impervious surfaces are not necessarily equivalent to the project area square footage because some facilities proposed for demolition are multiple stories, and many new facilities would be multiple stories. Furthermore, some infrastructure improvement and natural infrastructure management projects would disturb area but not add impervious surfaces.

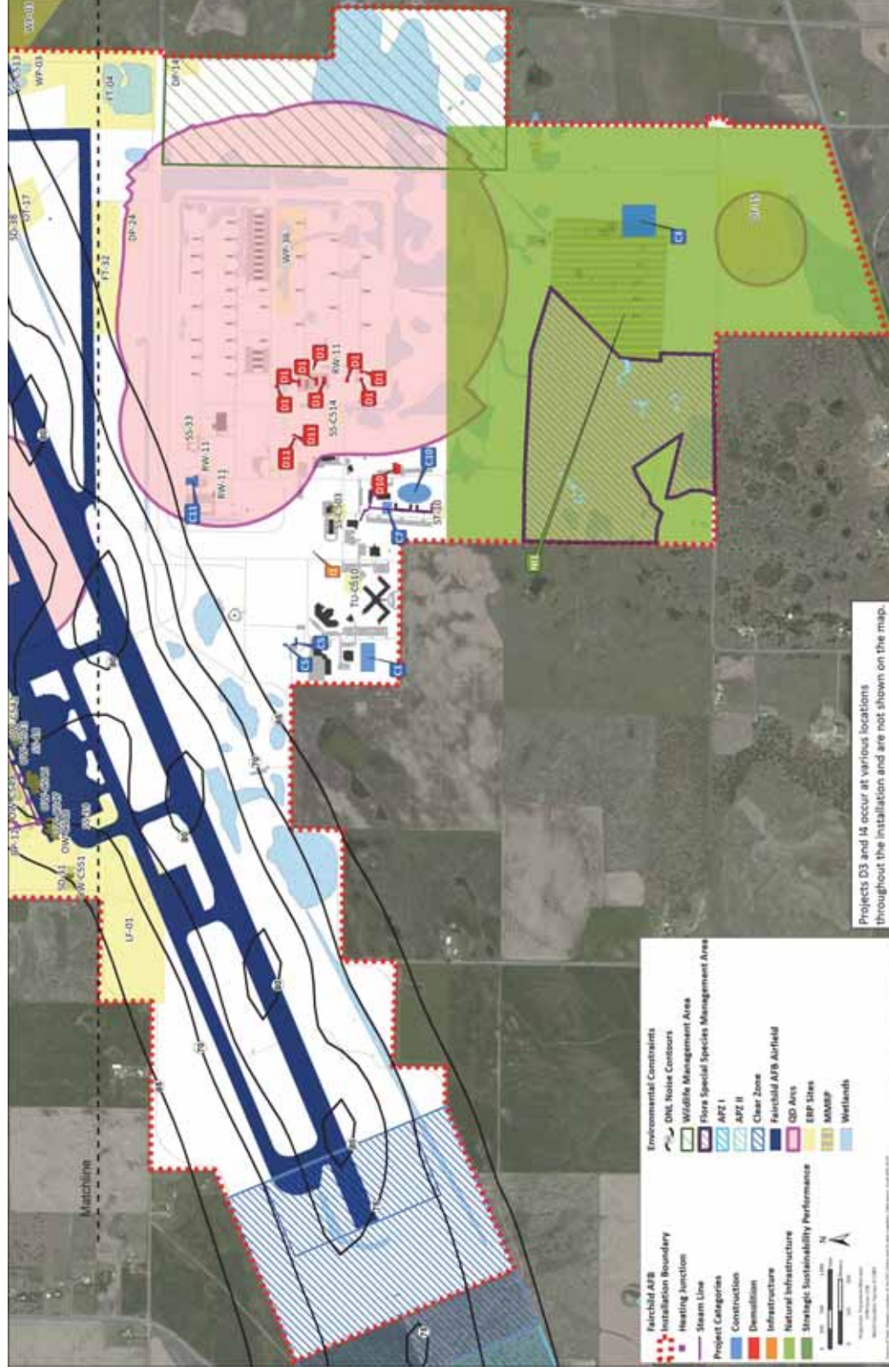
1. See **Table 2-4** and **Table 2-5**. The natural infrastructure management project and strategic sustainability performance project analyzed in detail as part of this Proposed Action are the only present and reasonably foreseeable projects categorized as such.
2. See **Table A-1**.
3. See **Table A-2**.
4. See **Table A-3**.

Figures 5-1 and **5-2** show the proposed project locations as currently planned. Some of these projects are in the early planning stages, so the final siting has not been completed for all projects. **Table 5-2** summarizes in tabular form the potential environmental consequences associated with the installation development projects that are identified in **Appendix A** but not analyzed as a selected project in **Section 4** of this IDEA.



Note: Project numbers and associated descriptions are shown in Tables A-1 through A-5.

Figure 5-1. Possible Locations and Environmental Constraints Associated with All Projects (North)



Note: Project numbers and associated descriptions are shown in Tables A-1 through A-5.

Figure 5-2. Possible Locations and Environmental Constraints Associated with All Projects (South)

**Table 5-2. Potential Environmental Consequences Associated with Constraints to Development
from All Other Proposed Projects Listed in Appendix A**

Project Identification Number and Title*	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Demolition Projects												
D5. Demolish aboveground storage tank (AST)	-	-	◆	+, VEG ◆	◆	-	-	-	+	+	+, HAZ ◆, ERP	◆
D6. Demolish Old Taxiway 9	-	-	◆	+	+	-	-	-	+	+	-	-
D7. Demolish Parking Lot, Near Building 2452	-	-	◆	-	+	-	-	-	+	+	-	-
D8. Demolish and Remove OWSs, Buildings 2115 and 2155	-	-	◆	◆, ERP	-	-	-	◆	+	+	+, HAZ ◆, ERP	◆
D9. Demolish Miscellaneous Outdoor Recreational Facilities Park Facilities Near Building 2065	-	-	◆	+, VEG	+	-	-	-	+	+	-	-, QD
D10. Demolish, Civil Engineering Maintenance Shop, Zone 3, Building 1352	-	-	◆	+	+	-	-	-	+	+	-	-
D11. Demolish Buildings 1231 and 1232	-	-	◆	+, VEG	+	-	-	-	+	+	+	-, QD
D12. Demolish Building 9005	-	-	◆	-	+	-	-	-	+	+	+	-

Project Identification Number and Title*	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Construction Projects												
C7. Construct SERE Sports Pavilion	-	◆	◆	-	◆	-	-	-	+	-	-	-
C8. Repair Dormitory Restore Interior Finishes (Phase 3 of 5)	-	-	-	-	◆	-	-	-	+	+	-	-
C9. Construct Indoor Small Arms Range	-	-	◆	◆, ERP	◆	-	-	-	+	-	◆, ERP	◆
C10. Provide Running Track SERE School	-	◆	◆	◆	◆	-	-	-	+	-	-, ERP	-
C11. Repair/Alter Building 1414	-	-	◆	◆	◆	-	-	-	+	+	-	-, QD
Other Infrastructure Projects												
I3. Repair Parking Lot Force Support Squadron Building 2447 West Lot	-	-	◆	◆, ERP	◆	-	-	-	+	+	-, ERP	◆
I4. Repair Electrical Power Distribution Lines, Various	-	-	-	◆, ERP	◆	◆, Wet	◆	-	+	+	-, ERP	◆
I5. Construct New Deicing Fluid System (Building 2407)	-	-	◆	◆	◆	-	-	-	+	+	◆, ERP	◆
I6. Construct/Repair Intrusion Detection System (Flightline)	-	-	◆	◆, ERP	◆	-	-	-	+	+	◆, ERP	◆

Note: * There are no additional natural infrastructure management or sustainability performance projects, other than the selected natural infrastructure management and strategic sustainability performance projects discussed under the Proposed Action.

Legend:

- No effects or negligible effects + Potential minor beneficial effects ◆ Potential minor adverse effects ■ Potential moderate adverse effects

Key:

ERP In an Environmental Restoration Program Site HAZ Change in quantity or storage for hazardous materials or wastes VEG Removal of vegetation
Wet Within a wetland area QD Quantity-Distance

All demolition and construction activities generally would be expected to result in some increased noise, increased air emissions, potential for erosion and transport of sediment into surface water bodies, generation of small amounts of hazardous materials and wastes, and generation of construction and demolition waste. All demolition and construction activities generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related effects would occur regardless of project location and are not constraints to development. In the absence of unique constraints, the potential for environmental effects of a demolition or construction project smaller in scope than those analyzed as selected projects in this EA would be expected to result in less than significant environmental effects.

5.1.1.3 Actions Outside Fairchild AFB

A steering committee representing Spokane County, City of Spokane, City of Spokane Valley, City of Airway Heights, and City of Liberty Lake have prepared a collaborative planning document that guides development within urban growth areas to ensure that land use review processes effectively promote public health, safety, and welfare, and provide for a fair and consistent development environment. Spokane County has also developed an airport overlay zone that prohibits development within the Fairchild AFB clear zones and accident potential zones and within substantial noise impact areas (SCPWD 2004). The land uses surrounding Fairchild AFB are primarily zoned as rural, with some light industrial uses in the vicinity of Airway Heights (Spokane County 2010a). No specific development projects have been identified in the City of Airway Heights, the City of Medical Lake, or other unincorporated areas outside Fairchild AFB that would affect or be affected by planned installation development activities.

5.1.2 Cumulative Effects Analysis

A cumulative effects analysis must be conducted within the context of the resource areas. The magnitude and context of the effect on a resource area depends on whether the cumulative effects exceed the capacity of a resource to sustain itself and remain productive (CEQ 1997). The following discusses potential cumulative effects that could occur as a result of implementing the Proposed Action and other past, present, and reasonably foreseeable future actions. No significant adverse, cumulative effects were identified in the cumulative effects analysis.

Noise

Military training and development activities have occurred at Fairchild AFB since 1942. Aircraft activities and automobile traffic are dominant noise sources in the area. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on the noise environment. Most installation development activities would occur at different times and different locations over the next 5 FYs (FY 2013 to FY 2018). Construction activities would result in short-term, localized increased noise levels.

There are several projects that are proposed within the noise contours at Fairchild AFB. Project D8 (Demolish and Remove OWSs) is proposed within the zone between the 65 to 69 dBA DNL noise contours and Project D4 (Demolish Aircraft Hangars) is proposed within the zone between the 65 to 74 dBA DNL noise contours. Project C4 (Base Operations Facility Building) is proposed within the zone between the 70 to 74 dBA DNL noise contours. Project I2 (Repair/Right-size Airfield: Multiple Areas) is proposed within the zone between the 70 to 80 dBA DNL noise contours. Air Force Pamphlet 32-1010, *Land Use Planning*, recommends using the AICUZ guidance in installation planning. According to USAF land use compatibility guidelines, which are outlined in the AICUZ guidance, transient lodging facilities, government services, education and cultural activities, and dining facilities are generally considered compatible land uses within the applicable noise zones if noise level-reduction measures are

incorporated into the design and construction of the facility. However, measures to achieve an overall noise level reduction do not necessarily solve all noise difficulties, such as outdoor noise, and additional evaluation is warranted. Building location, site planning, and the use of barriers can help mitigate outdoor exposure. Cumulatively, these four projects would not be expected to change the noise environment noticeably; aircraft operations will continue to be the most noticeable contributor to noise levels at Fairchild AFB.

Land Use

Military training and development activities have occurred at Fairchild AFB since 1942. Land use at Fairchild AFB is guided by the Fairchild AFB LRDP to ensure safe, compatible development. Cumulatively, implementation of all installation development projects would be expected to result in long-term, beneficial effects on land use. Demolition projects would remove old, outdated facilities and make land available in previously disturbed areas for new construction. Cumulative installation development activities would be compatible with existing and future land uses.

Several planned demolition, construction, infrastructure, and natural infrastructure management projects are sited in areas with safety concerns, including QD arcs and ERP sites. Refer to the *Safety and Hazardous Materials and Wastes* cumulative effects subsections for discussions on safety. From a land use perspective, development activities that would violate existing USAF plans or policies would be incompatible and adverse. Long-term, minor to moderate, beneficial, cumulative effects on land use would be expected from removing structures within the airfield (Project D4). Several proposed demolition activities (Projects D1, D4, D9, and D11), one proposed construction project (Project C4), one proposed infrastructure project (Project I2), and one natural infrastructure project (NI1) would occur within QD arcs; none of these projects conflict with land use planning criteria. Any ground-disturbing activities in and around ERP sites have the potential to encounter contaminated soil or groundwater. Projects D1, D2, D4, D5, D6, D8, C2, C4, C6, C9, I2, I3, I6, S1, and NI1 would occur on or near ERP sites. Currently, there are LUCs in place for ERP sites SS-26 (Project D4), SD-37 (Projects D4, D8, C6, and I3), SS-39 (Projects D2, D4, C4, C6, I2, I6), OT-15 (Project NI1), and RW-11 (Project D1). Prior to implementation of projects involving ground-disturbing activities, where soil contamination is potentially present, or projects that would encounter potentially contaminated groundwater, the appropriate Work Clearance Request process would be completed and all required signatures on all digging permits would be obtained from 92 CES.

Air Quality

Historically, air quality in the EWNII AQCR has been adversely affected by anthropogenic sources. Portions of Spokane County, which include the Spokane Urban Area as defined by the Washington Department of Transportation, are designated as maintenance areas for CO. Fairchild AFB is not in the Spokane Urban Area. Portions of Spokane County are designated as maintenance for PM₁₀; however, Fairchild AFB is west of this maintenance area as defined in 40 CFR 81.348. Fairchild AFB and surrounding areas are in attainment for all criteria pollutants. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on air quality. To provide a cumulative air quality analysis, the estimated emissions for implementation of all planned installation development projects are shown in **Table 5-3**. Significance criteria for attainment pollutants are a comparison of stationary source emissions plus mobile source emissions to 250 tpy. Construction- and demolition-related emissions would last only during those activities and cumulatively would not be significant. Stationary source emissions from the “Other Projects” have not been quantitatively estimated in this IDEA due to the preliminary design stage for many projects. However, stationary source emissions would not have significant cumulative effects on air quality as they would not be expected to trigger Title V or PSD permitting requirements.

Table 5-3. Estimated Annual Air Emissions Resulting from the Selected and Other Installation Development Projects

Project*	NO_x tpy	VOC tpy	CO tpy	SO₂ tpy	PM₁₀ tpy	PM_{2.5} tpy	CO₂ tpy
EWNII AQCR	36,373	38,050	258,845	4,912	70,573	10,862	7,323,694
Total 2013 Selected Projects Emissions	27.787	3.053	18.423	2.2253	76.824	9.38	3,885.87
Total 2013 Other Project Emissions	5.464	0.839	5.198	0.416	4.716	0.835	936.429
Total 2013 Emissions	33.251	3.892	23.621	2.6413	81.54	10.215	4,822.299
Percent of EWNII AQCR Inventory	0.091%	0.010%	0.009%	0.054%	0.116%	0.094%	0.066%
Total 2014 Selected Projects Emissions	5.922	1.428	6.085	0.459	4.549	0.943	945.498
Total 2014 Other Project Emissions	0.844	0.248	1.987	0.056	0.871	0.137	296.947
Total 2014 Emissions	6.766	1.676	8.072	0.515	5.420	1.080	1,242.445
Percent of EWNII AQCR Inventory	0.019%	0.004%	0.003%	0.010%	0.008%	0.010%	0.017%
Total 2015 Selected Projects Emissions	17.396	2.445	12.449	1.357	5.925	1.754	2,457.75
Total 2015 Other Project Emissions	7.575	1.287	7.254	0.58	7.187	1.214	7.575
Total 2015 Emissions	24.971	3.732	19.703	1.937	13.112	2.968	2,465.325
Percent of EWNII AQCR Inventory	0.069%	0.010%	0.008%	0.039%	0.019%	0.027%	0.034%
Total 2016 Selected Projects Emissions	0.882	0.171	1.218	0.066	1.153	0.170	200.204
Total 2016 Other Project Emissions	7.424	1.004	6.089	0.589	10.459	1.737	1,156.022
Total 2016 Emissions	8.306	1.175	7.307	0.655	11.612	1.907	1,356.226
Percent of EWNII AQCR Inventory	0.023%	0.003%	0.003%	0.013%	0.016%	0.018%	0.019%
Total 2017 Selected Projects Emissions	20.835	3.479	16.921	1.646	20.019	3.492	3,032.58
Total 2017 Other Project Emissions	5.133	0.637	3.989	0.393	0.57	0.376	798.065
Total 2017 Emissions	25.968	4.116	20.91	2.039	20.589	3.868	3,830.645
Percent of EWNII AQCR Inventory	0.071%	0.011%	0.008%	0.042%	0.029%	0.036%	0.052%

Note: * Total year emissions are the sum of mobile and stationary source emissions.

Key: EWNII = Eastern Washington-Northern Idaho Interstate

Considering facility demolition and construction cumulatively, there would be a decrease in the amount of heated facility space on Fairchild AFB (approximately 83,000 ft²). New facilities would use boilers, furnaces, and emergency generators, all of which would be sources of air emissions. However, the demolition of older and less energy-efficient buildings would remove older and more emissive boilers, furnaces, and emergency generators from the installation and decrease air emissions. It is anticipated that long-term, minor, beneficial cumulative effects on air quality could occur from removing older equipment during demolition and replacing it with newer, cleaner, efficient equipment. All required permits would be obtained prior to construction. Fairchild AFB would continue to calculate and provide criteria pollutant emissions from stationary sources to the SRCAA in compliance with their established Voluntary Emission Limits.

The proposed projects and other development activities would cumulatively generate GHG emissions during construction activities. These installation development activities would generate an estimated 4,822 tpy of CO₂, which is 4,374 metric tpy of CO₂, in 2013, the highest anticipated year. Estimated gross CO₂ emissions in the State of Washington were 77.5 million metric tons in 2009 (DOE/EIA 2011). Cumulative estimated CO₂ emissions in 2015 would represent 0.0056 percent of the State of Washington's 2009 CO₂ emissions and 0.034 percent of the EWNII AQCR. Therefore, the Proposed Action would have a negligible contribution towards the Washington statewide and EWNII AQCR GHG inventory estimates.

Geological Resources

Soils at Fairchild AFB have undergone modifications as a result of development and military activities. Individually, all construction and demolition activities could have short-term, negligible to minor, adverse effects as a result of vegetation removal, compaction of surrounding soils, and increased soil erosion and sedimentation. Considered cumulatively, planned installation development activities have the potential for short-term, minor, adverse effects and long-term, minor, adverse effects on topography, soil, and sediments. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on soil resources, but implementation of erosion- and sediment-control environmental protection measures would be expected to limit potentially adverse cumulative effects.

Demolition of facilities would partially offset potentially long-term, adverse, cumulative effects from construction of facilities by providing areas of previously disturbed soil requiring minimal grading. Site plans are not available for all projects since most are in the early planning stages. Based on the planned demolition and construction footprints, and the infrastructure improvement and natural infrastructure management project sizes, it is estimated that cumulatively, the proposed projects and all other installation development activities have the potential to disturb as much as 4.7 million ft² (approximately 106 acres) of soil over the next 5 years. This estimate was calculated by approximating that the area disturbed would be twice the building footprint for demolition and construction activities and equal to the project size for infrastructure improvement and natural infrastructure management projects.

Any ground-disturbing activities in and around ERP sites have the potential to encounter contaminated soil or groundwater. Projects D1, D2, D4, D5, D6, D8, C2, C4, C6, C9, I2, I3, I6, S1, and NI1 would occur on or near ERP sites. Prior to, or during, construction activities in areas of possible contamination, soils would be sampled to determine the extent of contamination, and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of construction activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures. Long-term, beneficial, cumulative effects would occur from the removal of contaminated soils.

The proposed projects would have no effects on geology; therefore, no cumulative effects would be expected. All new facilities would be designed in accordance with UFC 3-310-03 and EO 12699, which would cumulatively reduce potential adverse effects following a seismic event. New facilities are proposed in areas of Fairchild AFB that are disturbed by previous development or are immediately surrounded by existing facilities or infrastructure; these areas are not considered available for agricultural use (WDOE 2010a).

Water Resources

Installation development activities have had minor effects on groundwater and surface water quality. Fairchild AFB receives almost all of its water from wells at the Fort George Wright Annex. The SCDBP reports that Fairchild AFB is in an area of moderate to high susceptibility for aquifer contamination (SCDBP 2012). It is USAF policy to avoid constructing new facilities in wetlands to protect the functional uses of those resources unless there is no practicable alternative.

Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on water resources. Adherence to the NPDES construction permits (for projects greater than 1 acre) would minimize the potential for short-term, adverse, cumulative effects on water quality. Environmental protection measures would be used to control erosion and sedimentation and minimize storm water from leaving the construction site, reducing the potential for short-term, adverse, cumulative effects.

Demolition of facilities would partially offset potentially long-term, adverse, cumulative effects from construction of facilities and infrastructure by reducing the overall creation of impervious surfaces. Site plans are not available for all projects since most are in the early planning stages. Individual construction projects disturbing more than 5,000 ft² would be subject to EISA Section 438, which requires that predevelopment site hydrology be maintained or restored to the greatest extent possible following construction. Based on the planned demolition and construction footprints, and the infrastructure improvement and natural infrastructure management project sizes, it is estimated that cumulatively, the proposed projects and all other installation development activities have the potential to decrease impervious surfaces by 226,237 ft² (5.2 acres) or over the next 5 years (see **Table 5-1** for a summary and **Appendix A** for individual project sizes). Adherence to EISA Section 438 would minimize the potential for long-term, adverse, cumulative effects on water quality. Post-construction hydrological conditions would be expected to remain comparable to preconstruction hydrological conditions, which would reduce the potential for long-term, adverse, cumulative effects on water quality and flood conditions. Overall, long-term, cumulative effects could be beneficial because demolition would create pervious surfaces and larger construction projects, though creating impervious surfaces, would incorporate storm water management to ensure post-construction hydrology is not adversely affected.

Any ground-disturbing activities in and around ERP sites have the potential to encounter contaminated soil or groundwater. Projects D1, D2, D4, D5, D6, D8, C2, C4, C6, C9, I2, I3, I6, S1, and NI1 would occur on or near ERP sites. Groundwater monitoring wells have been installed around ERP sites and need to be protected from damage during construction and demolition activities. Prior to, or during, construction activities in areas of possible contamination, groundwater would be sampled to determine the extent of contamination, and remediated in accordance with Federal, state, and installation regulations. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

The proposed projects would result in short-term, negligible to minor, direct, adverse, cumulative effects on wetlands (Projects D1, I4, and NI1). None of the other planned installation development projects would directly affect wetlands. Adverse effects on wetlands would be avoided through design, siting, and

proper implementation of appropriate environmental protection measures. Correspondence with regulatory and resource agencies prior to commencing any ground-breaking construction activities would be completed and permits would be obtained, as necessary. Projects D1, I4, and NI1 would result in direct impacts on wetlands; however, cumulatively, there would be a decrease in impervious surfaces. Ground-disturbing activities associated with these projects could result in short-term, minor, adverse impacts; however, effects would not be significant considering the scope of these projects and the use of appropriate impact minimization measures. Project NI1, Prairie Restoration, Phase I and Phase II, would result in long-term, minor, beneficial effects on water resources as a result from restoration of native vegetation.

Biological Resources

Natural vegetative communities have been highly modified by past development and military operations. Approximately 700 acres in the northeastern corner and southern portion of the installation are primarily undeveloped areas, open grass fields, wetlands, and areas of mixed native and nonnative grasses, weeds, and shrubs. Fairchild AFB has an INRMP that is a reference and planning document for managing the installation's natural resources while maintaining mission readiness (SCDBP 2012).

Considered cumulatively, planned installation development activities have the potential for short-term, minor, adverse effects and long-term, minor, adverse effects on vegetation and wildlife. The majority of all planned installation development projects would occur in the improved areas of Fairchild AFB. The permanent removal of modified and landscaped areas would be a long-term, negligible, adverse, cumulative effect. Demolition of facilities would partially offset potentially long-term, adverse, cumulative effects from construction of facilities by providing previously developed areas that require less vegetation removal. Cumulative effects from vegetation removal would not be significant.

Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on wildlife as a result of noise. Construction-related noise emissions would only last during those activities and would not be cumulatively significant. Installation development projects could generate noise from new mechanical equipment or changes in vehicle traffic accessing different facilities; these changes in noise would have negligible long-term, cumulative effects on wildlife because wildlife inhabiting the installation are accustomed to noise disturbances in developed areas. Cumulative effects on wildlife would not be significant.

Project NI1 would have long-term, beneficial effects on native vegetation as invasive species would be controlled. Other planned installation development projects are sited in modified areas of Fairchild AFB where sensitive species would be expected to be habituated to noise and ground-vibration disturbances. During demolition and construction activities, it is anticipated that sensitive species would avoid the project area and would temporarily use other areas of the installation. Cumulative effects on threatened and endangered species would not be expected.

Cultural Resources

Fairchild AFB has met and continues to meet its stewardship responsibilities toward cultural resources under Section 106 of the NHPA. Through systematic archaeological surveys, Fairchild AFB has identified areas with little or no archaeological potential and areas that warrant attention respective to future undertakings. Fairchild AFB has been surveyed for archaeological materials and it was found that only one archaeological site has the potential to be eligible for listing in the NRHP (FAFB 2005a). This site, 45 SP 255, is several miles from the installation and would not be affected in any way by the proposed projects. In addition, the area that is now the installation was considerably altered during the first half of the 20th century by irrigation, farming, and military activity, suggesting there is a very low

probability of intact archaeological materials (FAFB 2005a). Cumulatively, no long-term impacts would be expected on archaeological resources at Fairchild AFB.

Implementation of Projects D1, D4, C4, and C6 would result in an adverse effect on NRHP-eligible properties at Fairchild AFB under Section 106 of the NHPA. Project D1 includes the demolition of the ammunition storage facilities. These facilities are considered NRHP-eligible. Project D4 includes the demolition of Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019. These facilities were constructed between 1955 and 1958 and are contributing properties to the Flight Line Historic District. Projects C4 and C6 include the demolition of Buildings 1 and 2023, respectively, that were constructed in 1943 and are NRHP-eligible (see **Appendix C**) (FAFB 2005a). Overall and cumulative expected impacts would range from minor to moderate and adverse under NEPA and would be considered an adverse effect on historic properties under Section 106 of the NHPA. As stated in **Section 4.3.7**, Fairchild AFB, in coordination with the Washington SHPO, developed an MOA for demolition activities involving NRHP-eligible structures. The MOA is provided in **Appendix B**. In accordance with the MOA, the USAF would ensure stipulations listed in the MOA (e.g. building-specific mitigation, flightline-specific mitigation, public education and display, duration, post-review discoveries, monitoring and reporting, dispute resolution, amendments, termination, and Anti-Deficiency Act) are implemented for demolition of NRHP-eligible properties. There are no known TCPs or sites sacred to Native Americans or federally recognized Indian tribes at Fairchild AFB (FAFB 2005a). If artifacts, archaeological features, or bones are discovered by construction personnel, SOPs identified in the installation's ICRMP and stipulations listed in the MOA would be implemented. In addition, the CRM would immediately contact interested Native American tribes.

Taken collectively and considering past and future effects on cultural resources at Fairchild AFB, the proposed projects and future planned activities would be expected not to have a significant impact on cultural resources under NEPA, with mitigation measures.

Socioeconomics and Environmental Justice

Fairchild AFB contributes substantially to the local economy. Cumulatively, installation development activities would have short-term, minor to moderate, beneficial effects on the local community through the procurement of goods and services. Construction-related expenditures would not generate any long-lasting cumulative benefits. Implementation of the projects identified in this cumulative effects discussion would occur on Fairchild AFB. Disproportionate impacts on minority or low-income populations would not occur.

Infrastructure

Fairchild AFB has well-developed infrastructure systems that are maintained and improved as needed. Many of the installation development activities planned over the next 5 FYs would provide necessary maintenance and increase capacity. Individually, installation development activities could have short-term, negligible, adverse effects during construction, demolition, or installation activities on infrastructure systems (e.g., power supply or communications connections could be temporarily lost while new facilities are connected).

Project I2 (Repair Electrical Power South Substation), Project I4 (Repair Electrical Power Distribution Lines), and Project I6 (Construct/Repair Intrusion Detection System) are three planned infrastructure improvement projects that would improve reliability and safety of utilities and the communications system to support the population and military mission. Implementation of planned installation development projects would have long-term, minor to moderate, beneficial, cumulative effects on the airfield, transportation systems, electrical supply, water supply, and communications systems.

Considering facility demolition and construction cumulatively, there would be an increase in the amount of facility space (approximately 83,000 ft²) and a decrease in the amount of impervious surfaces (226,237 ft²) on Fairchild AFB. An increase in facility space could be expected to require slightly increased use of electrical supply, natural gas, water supply, sanitary sewer and wastewater treatment, storm water, and communications systems, though there would be no or negligible increases in personnel associated with the installation development projects. However, older and less efficient buildings would be removed, and newer facilities would be designed with LEED Silver Certification, offsetting long-term, minor, adverse, cumulative effects on utility systems. Long-term, negligible to minor, direct and indirect, beneficial effects would be expected from the proposed cumulative projects on the installation's infrastructure systems by demolishing old buildings and constructing/updating new buildings and utilities.

Implementation of all planned installation development projects would result in short- and long-term adverse effects as a result of increased solid waste generation. As indicated in **Table 5-4**, approximately 97,229 tons of construction and demolition debris would be generated over the next 5 years. Demolition waste is managed by individual contracts, but it is anticipated that much of the clean demolition and construction debris could be recycled instead of disposed of in a landfill or rubble fill. Construction and demolition waste is a short-term, adverse effect in that it would only be generated during those activities, but the disposal of construction and demolition waste in a landfill would be a permanent effect.

Table 5-4. Cumulative Anticipated Generation of Construction and Demolition Debris

Project Type	Project Size (ft ²)	Multiplier (pounds/ft ²)	Total Waste Generated	
			Pounds	U.S. Tons
Proposed Action ¹	--	--	139,971,968	69,987
All Other Demolition Projects ²	338,075	158	53,415,850	26,708
All Other Construction Projects ²	230,284	4.34	999,433	499
All Other Infrastructure Improvement Pavement Projects ²	70,110	1	70,110	35
			Total	97,229

Source: USEPA 2009

Notes:

1. See **Table 4-6** (from anticipated construction and demolition waste generation table in infrastructure subsection).
2. See **Table 5-1** for project areas.

Hazardous Materials and Wastes

There are hazardous wastes and materials, 80 ERP sites, and 2 AOCs that occur at Fairchild AFB as a result of its historic use as a military installation. Fairchild AFB has a Pollution Prevention Plan, Hazardous Waste Management Plan, Asbestos Management Plan, Lead Exposure and Lead-Based Paint Management Plan, Green Procurement Program Plan, and Pest Management Plan that guide the use, handling, storage, and disposal of regulated materials in accordance with USAF, Federal, state, and local laws and regulations.

Individual installation development projects would require the use of small quantities of hazardous materials and generate small quantities of hazardous wastes, resulting in short-term, negligible, adverse effects. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, negligible to minor, adverse cumulative effects on hazardous materials and waste management. Adherence to construction site management plans for hazardous materials and wastes would limit potentially adverse cumulative effects. Some installation development projects could

increase the use or storage of hazardous or petroleum materials, such as the Indoor Small Arms Range (Project C9) and the new Deicing Fluid System (Project I5). It is anticipated that increased hazardous or petroleum material used and wastes generated would be managed by existing Fairchild AFB management plans and practices. Cumulatively, long-term effects would not be significant.

Table 5-5 provides a summary of the ASTs and USTs associated with the selected and other installation development projects. For Project C6, three ASTs are within the project area and would either be emptied and moved to the new facilities or replaced with modern, new storage tanks. For Project D5, two USTs are within the project area and would be replaced with modern, new storage tanks. Cumulatively, long-term, beneficial effects would be expected from the replacement of aged storage tanks at Fairchild AFB.

Table 5-5. List of ASTs and USTs Associated with the Selected and Other Installation Development Projects

AST/UST	Facility Description	Purpose (Product)	Capacity (gallons)	Project
AST	Maintenance Shop (Building 2025)	Base Deicing Fluid (Magnesium Chloride)	10,000	C6
AST		Flight Line Deicing Fluid Storage (Potassium Acetate)	15,000	
AST		Flight Line Deicing Fluid Storage (Potassium Acetate)	29,660	
UST	Aqua Bulk Storage (Building 2166)	Refueling (Diesel)	25,000	D5
UST		Refueling (Unleaded Gasoline)	25,000	

Source: Shelton 2012

Buildings constructed prior to 1980 should be assumed to contain asbestos. Buildings constructed prior to 1978 should be assumed to contain LBP. Buildings constructed prior to 1979 could have PCB-containing equipment. The risk of exposure to ACM, LBP, or PCBs during demolition activities would be a short-term, adverse effect. The buildings associated with Projects D1, D2, D11, and D12 are assumed to contain ACM, LBP, and PCBs because of the age of the buildings. The appropriate identification, handling, removal, and disposal of ACM and LBP would occur in accordance with Fairchild AFB management plans and USAF, Federal, state, and local laws and regulations. PCB-containing materials must be disposed of at a hazardous waste disposal facility. Cumulatively, long-term, beneficial effects would be expected from the removal of ACM, LBP, and PCBs from Fairchild AFB.

Any ground-disturbing activities in and around ERP sites have the potential to encounter contaminated soil or groundwater. **Table 5-6** lists the ERP sites at the project areas associated with the selected and other projects and their current statuses. Existing groundwater monitoring wells have been installed around ERP sites and would need to be protected from damage during construction and demolition activities. The risk of exposure to soil or groundwater contamination during ground-disturbing activities would be a short-term, adverse effect; the increased risk would not necessarily be considered an adverse cumulative effect when considering all installation development projects together. Prior to or during construction activities in areas of possible contamination, soils and groundwater would be sampled to determine the extent of contamination, and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of or during construction activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Fairchild AFB management procedures.

Table 5-6. Summary of ERP Sites Associated with the Selected and Other Installation Development Projects

Site Number	Site Name	Site Description	Status	Selected and Other Projects	Date of Remedy In Place
SD-37*	Installationwide OWS	Contaminants in the soil and groundwater from petroleum hydrocarbons, metals, and VOCs released from OWSs at several airfield buildings and a UST formerly located at Building 2447 are of concern at this site. Residual contaminated soil was left in place at most of the buildings when the OWSs were either removed or upgraded. The detected constituents included BTEX compounds, metals, and TPH (the primary contaminant of concern). Groundwater underlying this site is currently not used as a drinking water source. The dominant groundwater flow direction is to the northeast.	RI/FS	D4, D8, C6, I3	N/A
SS-26*	Spill Site - Flightline	This site is located along Taxiway 1, adjacent to Buildings 1015, 1017, and 1019. During runway soil compaction testing in 1982, petroleum odors were identified near Building 1019. The petroleum vapors were assumed to be from leaking underlying jet fuel distribution lines. The contaminant of concern is benzene in the groundwater and long-term monitoring is the selected remedy.	RA-O	D4	07/14/93
SS-39*	TCE Orphan Plumes	Unlined ditches showed visual signs of TCE contamination during previous investigation. Contaminants in groundwater are also a concern at this site.	RD	D2, D4, C4, C6, I2, I6	12/10/10
RW-11*	Radioactive Waste Disposal Area	This site is located at the former site of Deep Creek Air Force Station. The site includes two USTs, a burial trench, and three interior work areas. The work areas were formerly used for conducting routine maintenance on nuclear device components. The USTs were designed as contingency for the containment of wastewater in the event of a spill involving the release of radioactive materials during component maintenance activities. Recent investigations provide no evidence to suggest any releases ever occurred at the facility. Component maintenance involved the mechanical disassembly and cleaning surfaces of nuclear materials. The paper wastes and small amounts of solvent generated were disposed in the burial trench. The USTs were removed and the buried trench was excavated. A removal action was conducted in December 2011 to remove any remaining soil contamination.	DD/ROD	D1	N/A

Site Number	Site Name	Site Description	Status	Selected and Other Projects	Date of Remedy In Place
OT-15*	EOD Range	This site contains earthen berms used for shielding during waste detonation, burning troughs used to contain wastes during open burning, a bunker, a 500-gallon fuel oil storage tank, a burial trench area where residuals were buried, and a dirt access road. Items buried or detonated at this site included small explosive ordnance items (i.e., unserviceable munitions and unexploded ordnance). Lead and thallium were present at the site but no nitroaromatic explosive compounds were detected in any samples collected.	No Action	NI1	08/31/06
TU500	West Defuel	This site is the location of a former UST that supplied fuel for aircraft operations. One 25,000-gallon JP-4 UST was removed in 1995. The date of the release is unknown; however, the release could have occurred before 1992. Contaminants of concern in the groundwater include BTEX, 1, 3-dichlorobenzene, 1, 4-dichlorobenzene, 1, 2-dichlorobenzene, pentachlorophenol, and naphthalene. Contaminants of concern in the soil include BTEX, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and chrysene. Interim remedial actions have been conducted at the site including the implementation of a bioventing system and excavation to remove some existing soil contamination; however, these actions have been unable to remediate the entire extent of contamination at the site.	RI/FS	D4	N/A
TU502	Site 2160	This site is the location of 14 former USTs that were used to store heating oil. The USTs were removed in 1997; however, it was not possible to remove all of the soil and groundwater contamination at the time of the removal. DROs have been detected in groundwater and soil at concentrations up to 55 and 16 million ppb, respectively.	RI/FS	D5, C2, S1	N/A
OW046	Building 1011 West OWS	This site is the location of a former 305-gallon OWS and is located off the southwestern corner of Building 1011 (aircraft hangar). The OWS previously received wastes from a trench drain located inside Building 1011. These wastes could have included used fuel and oil, lubricants, and solvents. The OWS was removed on 23 May 1995. Petroleum contamination was detected in excavated soils. A composite soil sample was collected during the excavation of the OWS, and contaminants of concern identified included TPH-GRO and TPH-DRO. Groundwater was not collected, but appeared to have a visible petroleum sheen. No additional sampling or remediation activities have occurred at this site since removal of the OWS.	RI/FS	D4	N/A

Site Number	Site Name	Site Description	Status	Selected and Other Projects	Date of Remedy In Place
OW048	Building 1029 East OWS	This site is the location of a former concrete 298-gallon OWS located off the southeastern corner of Building 1029 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water discharged from the OWS to the storm sewer. The OWS was removed in June 1995, and petroleum contamination was detected in the excavation and observed in excavated soils. Approximately 160 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from four discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-DRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-GRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A
OW049	Building 1029 West OWS	This site is the location of a former concrete 352-gallon OWS located off the southwestern corner of Building 1029 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water was discharged from the OWS to the storm sewer. The OWS was removed in June 1995, and petroleum contamination was detected in the excavation and in excavated soils. Approximately 50 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from four discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-GRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-DRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	I2	N/A

Site Number	Site Name	Site Description	Status	Selected and Other Projects	Date of Remedy In Place
OW050	Building 1033 East OWS	This site is the location of a former concrete 357-gallon OWS located off the southeastern corner of Building 1033 (aircraft hangar). The OWS was installed in the 1950s, and received wastes (i.e., used fuel/oil, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water was discharged from the OWS to the storm sewer. The OWS was removed in July 1995, and petroleum contamination was observed in the excavation and excavated soils. Approximately 70 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-GRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-DRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, this site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	12	N/A
OW051	Building 1033 West OWS	This site is the location of a former concrete 337-gallon OWS located off the southwestern corner of Building 1033 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected from the OWS and disposed of, and the water was discharged from the OWS to the storm sewer. The OWS was removed in May 1995, and petroleum contamination was detected in the excavation and in excavated soils. Approximately 70 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-DRO detected in soil exceeded its action level. All other compounds were detected below action levels or non-detect, including TPH-GRO. Groundwater was encountered in the excavation and appeared to have a visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	12	N/A

Site Number	Site Name	Site Description	Status	Selected and Other Projects	Date of Remedy In Place
OW052	Building 1037 East OWS	This site is the location of a former concrete 890-gallon OWS located off the southeastern corner of Building 1037 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected in a built-in holding chamber, and the water was discharged from the OWS to the storm sewer. The OWS was removed in November 1995, and petroleum contamination was observed in the excavation and excavated soils. Approximately 5 tons of petroleum-contaminated soil was transported to the Graham Road Recycling and Disposal Facility. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. TPH-GRO and TPH-DRO were detected in the sample, and exceeded their action levels. All other compounds were detected below action levels or non-detect. Groundwater was encountered in the excavation and appeared to have visible petroleum sheen; however, a groundwater sample was not collected. Based on soil sample results, the site was deemed unclean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	12	N/A
OW053	Building 1037 West OWS	This site is the location of a former concrete 890-gallon OWS located off the southwestern corner of Building 1037 (aircraft hangar). The OWS was installed in the 1950s and received wastes (e.g., used oil/fuel, lubricants, and solvents) from a trench drain located in the aircraft hangar. When in use, the waste oil was collected in a built-in holding chamber, and the water was discharged from the OWS to the storm sewer. The OWS was removed in November 1995, and no petroleum contamination was observed in the excavation or excavated soils. A composite soil sample, composed from seven discrete samples, was collected during the excavation. The sample was analyzed for VOCs, SVOCs, TPH, and metals. None of the compounds detected in the soil were above action levels. Groundwater was encountered in the excavation; however, it did not appear to have a visible sheen and a sample was not collected. Based on soil sample results, the site was deemed clean. No sampling or remediation activities have occurred at this site since the removal of the OWS.	RI/FS	12	N/A

Site Number	Site Name	Site Description	Status	Selected and Other Projects	Date of Remedy In Place
OW058	Hotspot No. 5 TPH Contamination	This site includes TPH contamination encountered during the installation of treatment wells at Hotspot No. 5 within ERP Site SS-39. During the installation of treatment wells, potential petroleum-contaminated soil was observed in four wells at depths ranging from 12 to 15 feet below ground surface. A soil sample was collected from one of the well borings and analyzed for VOCs and TPH. TPH-DRO and heavy oils were detected and exceeded action levels. The source of contamination has been identified to be associated with former facility 2094, which housed a 3,000-gallon gasoline UST and a 4,000-gallon diesel UST. The USTs and fuel dispensers were removed in 1995. The USTs were reported to be in good condition with no evidence of fuel leakage. However, gasoline- and diesel-contaminated soil was found beneath the fuel dispensers with concentrations of gasoline, diesel, and BTEX above cleanup levels.	RI/FS	C9, I2	N/A
TS929	Skeet Range	This replacement skeet range was located generally east of the original skeet range (TS626 Housing – Old Skeet Range). The firing line consisted of a single half moon shaped structure orientated to the east. The concrete structure of the half moon firing points remains, and clay target debris was observed east of the firing points. The range was used for recreation and 12-, 20-, and 28-gauge shotgun ammunition were likely used. A total of 117 XRF samples have been collected and analyzed from the Skeet Range using XRF technology. Ten samples exceeded the human health screening criteria for lead. The extent of lead contamination was delineated through XRF sampling. Eleven PAH samples were collected, and PAHs were detected in all samples, but only four samples had levels of PAHs above human health screening criteria.	DD/ROD	D6	N/A

Sources: FAFB 2009c, FAFB 2008e, FAFB 2010g

Note: * Currently have LUCs in place (refer to **Section 3.2.2** for further details regarding LUCs).

Key:

N/A = Not Available

RI/FS = Remedial Investigation/Feasibility Study

RD = Remedial Design

RA-C = Remedial Action Construction

RA-O = Remedial Action Operation

NFRAP = No Further Response Action Planned

TCE = Trichloroethylene

EOD = Explosive Ordnance Disposal

BTEX = Benzene, Toluene, Ethylbenzene, and Xylene

TPH = total petroleum hydrocarbon

DRO = Diesel Range Organics

VOC = Volatile Organic Compound

ppb = parts per billion

JP-4 = jet propellant-4

GRO = Gasoline Range Organics

DD = Decision Document

ROD = Record of Decision

SVOC = Semi-Volatile Organic Compounds

Health and Safety

Fairchild AFB complies with all applicable USAF AFOSH and OSHA regulations and munitions safety criteria to provide a safe working environment while supporting military readiness and training activities. Individual installation development projects could pose an increased risk for a safety mishap during construction and demolition activities. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects by increasing local construction traffic accessing sites, increasing maintenance and repair activities, and creating highly noisy environs that could mask verbal or mechanical warning signals. Adherence to OSHA regulations would minimize the potential for adverse effects on construction workers. Cumulative effects on construction safety would be short-term and negligible to minor.

Installation development activities in some areas of Fairchild AFB inherently pose a greater risk because of operational or environmental safety issues, including munitions and QD arcs and ERP sites. Several proposed demolition activities (Projects D1, D4, D9, and D11), two proposed construction projects (Project C4 and C11), one proposed infrastructure project (Project I2), and one natural infrastructure project (Project NI1) would occur within QD arcs. To avoid potential impacts on construction workers and the installation mission, this project should be coordinated with Airfield Management and the installation Safety Office. In addition, a waiver would be obtained from HQ AMC for any projects located within QD arcs prior to commencement of construction and demolition activities. No long-term impacts would be expected.

Any ground-disturbing activities in and around ERP sites have the potential to encounter contaminated soil or groundwater. Projects D1, D2, D4, D5, D6, D8, C2, C4, C6, C9, I2, I3, I6, S1, and NI1 would occur on or near ERP sites. Prior to, or during, construction activities in areas of possible contamination, soils and groundwater would be sampled to determine the extent of contamination and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to, or during, commencement of construction activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and installation's Hazardous Waste Management Plan. Exposure to contaminants at these sites could have short-term, negligible to minor, adverse impacts on workers. Long-term, beneficial, cumulative effects on safety would occur from the remediation or removal of contaminated soils and groundwater.

5.2 Reasonable and Prudent Measures and Best Management Practices

The proposed projects would not result in significant adverse effects on the land or the surrounding area. However, environmental protection measures and other minimization measures would be implemented to eliminate or reduce the impacts of potential adverse effects.

General environmental protection measures that would be included, as applicable, as parts of installation development projects are summarized as follows:

- Clearing and grubbing would be timed with construction to minimize the exposure of cleared surfaces. Such activities would not be conducted during periods of wet weather. Construction activities would be staged to allow for the stabilization of disturbed soils. These environmental protection measures would minimize adverse effects associated with soil and water resources.
- Fugitive dust-control techniques such as watering and stockpiling would be used to minimize adverse effects. All such techniques would comply with applicable regulations. These

environmental protection measures would minimize adverse effects associated with air quality, soil, and water resources.

- Soil erosion-control measures, such as soil erosion-control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, vegetative buffer strips, and hardened stream crossings, would be used as appropriate. These environmental protection measures would minimize adverse effects associated with soil and water resources.
- Storm water management would be used as appropriate during construction to minimize offsite runoff. Following construction, storm water management systems would ensure that predevelopment site hydrology is maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. These environmental protection measures would minimize adverse effects associated with water resources.
- Minimize the disturbance of environmental resources and topography by integrating existing vegetation, trees, and topography into site design. These environmental protection measures would minimize adverse effects associated with soil and biological resources.
- Any groundbreaking construction activities should be performed before migratory birds return to Fairchild AFB or after all young have fledged to avoid incidental take.
- If construction is scheduled to start during the period when migratory birds are present, a site-specific survey for nesting migratory birds should be performed immediately prior to construction.
- The nesting period for migratory birds is from March to July. If nesting birds are found during the survey, buffer areas should be established around nests. Construction should be deferred in buffer areas until birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.
- Where feasible, minimize areas of impervious surface through shared parking, decked or structured parking, increased building height, or other measures as appropriate. These environmental protection measures would minimize adverse effects associated with soil and water resources.
- Provisions would be taken to prevent pollutants from reaching the soil, groundwater, or surface water. During project activities, contractors would be required to perform daily inspections of equipment, maintain appropriate spill-containment materials on site, and store all fuels and other materials in appropriate containers. Equipment maintenance activities would not be conducted on construction sites. These environmental protection measures would minimize adverse effects associated with soil, water resources, and hazardous materials and waste.
- Physical barriers and “no trespassing” signs would be placed around the demolition and construction sites to deter children and unauthorized personnel. All construction vehicles and equipment would be locked or otherwise secured when not in use. These environmental protection measures would minimize adverse effects associated with health and safety.
- Construction equipment would be used only as necessary during the daylight hours and would be maintained to the manufacturer’s specifications to minimize noise impacts. These environmental protection measures would minimize adverse effects associated with health and safety.

Construction impacts are short-term environmental effects resulting from the proposed projects. Construction effects might involve temporary changes in noise levels, air quality, water quality, land use, and community access.

5.3 Unavoidable Adverse Effects

Unavoidable adverse effects would result from implementation of the proposed projects. As discussed in detail in **Section 4**, the proposed projects would result in short-term, adverse effects associated with construction activities, including increased noise, increased air emissions, minor interruptions to traffic flow, use and generation of small amounts of hazardous materials and wastes, and generation of construction and demolition waste. None of these effects would be significant.

Projects D1, I4, and NI1 would result in short-term, negligible to minor, direct, adverse, effects on wetlands. Project NI1, Prairie Restoration, Phase I and Phase II, would result in long-term, direct, minor, beneficial effects on water resources as a result from restoration of native vegetation. All other planned installation development projects would not be expected to directly or indirectly affect wetlands.

5.4 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Effects on the ground surface as a result of the proposed projects would occur within the boundaries of Fairchild AFB. All proposed installation development activities would not result in any significant or incompatible land use changes on or off the installation. Other proposed projects have been sited according to existing land use zones. Consequently, other construction activities would not be in conflict with installation land use policies or objectives.

5.5 Relationship Between the Short-term Use of the Environment and Long-term Productivity

Short-term uses of the biophysical components of human environment include direct construction-related disturbances and direct effects associated with an increase in activity that occurs over a period of less than 5 years. Long-term uses of human environment are those effects occurring over a period of more than 5 years, including permanent resource loss.

The proposed projects would not result in an intensification of land use in the surrounding area. Development of the proposed projects would not represent a significant loss of open space. The long-term, beneficial effects of implementing the proposed projects and other planned installation development activities would support the ongoing and future training missions and other readiness training and operational assignments.

HQ AMC plans to reduce their overall building footprint by 6.6 million ft² by 2020 (HQ AMC 2010). The planned demolition activities at Fairchild AFB over the next 5 years would contribute to that goal by removing excess, obsolete, and underused infrastructure capacity and focusing time and funding on maintaining only infrastructure that is needed. This is a long-term benefit for HQ AMC and the USAF.

5.6 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the proposed projects involve the consumption of material resources, energy resources, and human resources. The use of these resources is considered to be permanent. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals).

Wetlands. Projects D1, I4, and NI1 would directly affect wetlands, but these projects do involve irreversible or irretrievable commitments of resources. The proposed projects would not have significant effects on wetlands.

Biological Habitat. The proposed projects would result in the minimal loss of vegetation and wildlife habitat. This loss would not be significant.

Material Resources. Material resources used for the proposed projects include building materials (for renovation or construction of facilities), concrete and asphalt (for parking lots and roads), and various material supplies (for infrastructure) and would be irreversibly lost. Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. No significant effects would be expected on energy resources used as a result of implementation of the proposed projects, though any energy resources consumed would be irretrievably lost. These include petroleum-based products (e.g., gasoline and diesel fuel) and electricity. During construction, gasoline and diesel fuel would be used for the operation of construction vehicles. During operation, gasoline or diesel fuel would be used for the operation of privately owned and government-owned vehicles. Electricity would be used for operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the proposed projects represents employment opportunities and is considered beneficial.

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APPENDIX A

INVENTORY OF INSTALLATION DEVELOPMENT PROJECTS

Table A-1. Selected and Other Proposed Demolition Projects

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft²)	Change in Impervious Surface (ft²)
Selected Demolition Projects							
D1. Demolish Ammunition Storage Facilities	110092 110093 110094 110095 110096	2013	Multiple	Demolition of Ammunition Storage in five phases. Associated infrastructure (i.e., foundation, parking, access roads, fencing, and utilities) would also be removed.	Wetlands, QD Arcs, ERP Sites, Cultural	252,744	-252,744
D2. Demolish Building 2001E	TBD	2016	Industrial and Administrative	Demolition of Warehouse Building 2001E. Move CBCS to the new WANG warehouse.	ERP Sites	39,204	-39,204
D3. Demolish, Steam Heat Mains and Abandoned Steam Pits Installationwide	090033	2013	Various*	Demolition of the steam heat mains would not result in a change in impervious surface area. A total of 137 steam pits would be removed; 108 of the steam pits are not in the pavement and 29 of the steam pits are in the pavement (approximately 9,000 ft ² of impervious surface area).	ERP Sites, QD Arcs*	12,330	- 9,000
D4. Demolish Aircraft Hangars: Buildings 1011, 1012, 1013, 1015, 1017, 1018, 1019	TBD	2017	Airfield O&M	Demolition of aircraft hangars (Buildings 1011, 1012, 1013, 1015, 1017, 1018, and 1019) and their associated infrastructure (i.e., pavements) and utilities. These areas would be returned to native vegetation.	Airfield, ERP Sites, QD Arcs, Cultural, Noise Contour Line	187,920	-187,920

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Other Demolition Projects							
D5. Demolish aboveground storage tank (AST)	080073	2014	Industrial	Demolition of a 420,000-gallon AST (diesel fuel), which is located near Building 2166. Demolition of the concrete foundations and containment berm, and dispose of waste concrete. Return the area to native vegetation. Demolition of the fuel oil transfer pipe from the tank to the pumphouse (Building 2166).	ERP Sites	420,000 gallons (27,000)	-27,000
D6. Demolish Old Taxiway 9	030018	2016	Open Space and Outdoor Recreation	Demolition of the Old Taxiway 9 concrete pavements that run northwards from Gate 23 Road, past the Sports Range, to the field behind the Officer Capehart military family housing area. Includes South Limb. Old Taxiway 9 is from the World War II-Era and is not situated on the current airfield.	ERP Sites	295,650	-295,650
D7. Demolish Parking Lot, Near Building 2452	130006C	2015	Community (Commercial)	Demolition of the parking lot near Building 2452.	None	5,473	-5,473
D8. Demolish and Remove Oil/Water Separators (OWSs), Buildings 2115 and 2155	110049	2014	Industrial	Demolition of two 7,412-gallon-capacity OWSs. The OWSs are located in grassed areas near Buildings 2115 and 2155. The project areas at each site are approximately 100 ft ² each. There would be no change to the impervious surface area.	ERP Sites, Noise Contour Line	200	0

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Other Demolition Projects (continued)							
D9. Demolish Miscellaneous Outdoor Recreational Facilities Park Facilities Near Building 2065	090051	2014	Airfield O&M	Demolition of “Humpty” park facilities adjacent to Building 2065, including Buildings 2089 and 2067. Restore area to match the surrounding improved grounds.	QD Arcs	1,900	-1,900
D10. Demolish, Civil Engineering Maintenance Shop, Zone 3, Building 1352	090007	2016	Industrial	Demolition of the superstructure (5,500 ft ²), footing, and foundations and the asphalt parking lots.	None	5,500	-62,000
D11. Demolish Buildings 1231 and 1232	50327	2107	Industrial	Demolition of Buildings 1231 and 1232 and their foundations. Building 1232 contains a 65,000-gallon water storage tank. The area would be returned to native vegetation.	QD Arcs, Asbestos, Lead-based Paint (LBP)	2,352	-2,352
D12. Demolish Building 9005	TBD	2017	Medical	Demolition of Building 9005 including basement walls and utilities.	Asbestos, LBP	2,267	-2,267
Net Change in Impervious Surface							-885,510

Note: * The steam heat mains and steam pits are in various locations throughout Fairchild AFB. Subsequently, they could be within various land use categories depending on their location. Some of the steam heat mains and steam pits are aboveground; however, the majority of them are underground.

Key: ft² = square feet; FY = fiscal year; ERP = Environmental Restoration Program; O&M = operation and maintenance; QD = quantity-distance

Table A-2. Selected and Other Proposed Construction Projects

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Selected Construction Projects							
C1. Construct Pipeline Dormitory	040009	2014	Housing Unaccompanied	Construction of a 3-story, 150-room, dormitory for 300 USAF SERE School Pipeline students including utilities, site improvements, pavements, and communications.	None	81,375	81,375
C2. Construct Precision Measurement Equipment Laboratory (PMEL) Facility	940031	2015	Multiple	Construction of a new PMEL Facility, including reinforced concrete footings, foundation, and floors; steel framing; insulated brick exterior façade; and a metal roof. Includes all associated utilities, site work, paving, and landscaping. Demolition of the existing building (Building 2135) and pavements.	ERP Sites	New Construction: 6,835 Building Demolition: 14,574 Pavement Demolition: 33,023	-40,762
C3. Construct Peacetime Governmental Hostage/Detention Training Facility	050054	2015	Industrial and Open Space	Construction of a Peacetime Governmental Hostage/Detention Training Facility. The project includes new construction, demolition, and some minor infrastructure/utility work. The new facility will include a 100-seat auditorium, four 50-seat classrooms, four 150-ft ² labs, an 8,000-ft ² resistance-training laboratory, and administrative space. The new facility would be constructed just south of the SERE training compound.	None	New Construction: 20,538 Demolition: 32,539	-12,001

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Selected Construction Projects (continued)							
C4. Construct Base Operations Facility Building 1	090014	2015	Airfield O&M	Construction of a new modern Base Operations Facility on the existing facility location and demolition of the antiquated (constructed in 1953) dilapidated facility. This facility would house airfield management, weather, crew communications, life support, and passenger terminal.	ERP Sites, QD Arcs, AICUZ, Cultural	New Construction: 18,076 Demolition: 21,809	-3,733
C5. Construct Airfield Communications Facility	080075	2017	Industrial	Construction of a new Airfield Communications Facility with reinforced concrete foundation, steel framing, insulated masonry shell, and a metal roof. Provide parking, access roads, landscaping, and site improvements. Includes demolition of Buildings 1200 and 1201, pavements, and fencing. Construction of a new facility to improve installation communications infrastructure and to provide redundancy for force protection.	None	New Construction: 3,875 Demolition: 30,462	-26,587
C6. Construct Civil Engineer Squadron (CES)/Contracting Squadron (CONS) Complex	902509	2017	Industrial	Construction of a new CES/CONS Administrative and Shop facility including associated parking and infrastructure. Demolition of World War II-Era facilities (Buildings 2025 and 2451) and associated parking and infrastructure.	ERP Sites, Cultural	New Construction: 100,000 Demolition: 250,000	-150,000
Other Construction Projects							
C7. Construct SERE Sports Pavilion (west of Building 1354)	110052	2013	Industrial	Construction a sports field as an addition to the SERE Complex. The SERE sports pavilion would be constructed in a grassed area, west of Building 1354.	None	1,200	+1,200

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Other Construction Projects (continued)							
C8. Repair Dormitory (Buildings 2256, 2257, 2258, 2259) Restore Interior Finishes (Phase 3 of 5)	080035P2 080035P3	2013	Housing Unaccompanied	Reconfigure and refinish interior spaces (e.g., walls, doors) to convert from current configuration to D4A concept (Buildings 2256 and 2257). Dormitory renovation projects including painting (wallpaper removal where applicable), floor replacement (i.e., carpet and vinyl tile), and brick cleaning (interior and exterior) (Buildings 2258 and 2259).	None	–	0
C9. Construct Indoor Small Arms Range (southwest of Buildings 2075 and 2074)	100193	2015	Industrial	Construct a new Small Arms Firing Range southwest of Buildings 2075 and 2074. Existing ranges would be demolished, which would include lead remediation. Fully enclosed qualifying range to be retained on the installation. The location is to be determined (possibly in Industrial East).	ERP Sites	New Construction: 39,699 Demolition: 96,950	+15,405
C10. Provide Running Track SERE School (south of Building 1354)	080025	2013	Industrial	Construct an SERE running track south of Building 1354 in the vicinity of the new football field. Facility needed as SERE operations expand.	None	70,000	+31,680

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Other Construction Projects (continued)							
C11. Repair/ Alter Building 1414*	120078	2013	Industrial	Add a storage space and mezzanine in Building 1414, repair roof, upgrade/replace lighting, install insulation, construct additional administrative space, renovate restrooms, and construct a fenced outdoor storage yard and parking area. The new maintenance and inspection facility would allow the Maintenance Group to vacate Building 1409, which would reduce the QD Arc associated with munitions storage area operations. Once assets from Buildings 1238 and 1352 are relocated to Building 1414, Buildings 1238 and 1352 would be demolished.	QD Arcs	Demolition: 75,000 (pavements) 6,000 (Building 1238)	-81,000
Net Change in Impervious Surface							-184,423

Note: *Building 1352 would be demolished under Project D10 (see **Table A-1**).

Key: ft² = square feet; FY = fiscal year; ERP = Environmental Restoration Program; O&M = operation and maintenance; QD = quantity-distance; AICUZ = Air Installation Compatible Use Zone

Table A-3. Selected and Other Proposed Infrastructure Improvement Projects

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Selected Infrastructure Improvement Projects							
I1. Repair Electrical Power South Substation (Building 1270)	120065	2013	Industrial	Construction of two new ducts near Building 1270 and the demolition and replacement of the overhead lines servicing Feeder No. 1. Nearly 3,000 linear feet of upgraded cable will be laid including all necessary excavation, concrete separators, ducts, manholes, demolition, and disposal fees.	None	30,000	0
I2. Repair Right-size Airfield: Multiple Areas	110030 100161/100162 100156/100157 110028	2013	Airfield Pavements, Airfield	Demolition, removal, and replacement of pavement and curbs (Aircraft Parking Stubs 15-24). The concrete would be removed (a total of approximately 145,269 ft ²). Aircraft Parking Stubs 15-24 are across the taxiway that runs in front of the hangar row (Buildings 1001 through 1009). Replacement of 25-foot by 25-foot by 17-inch-thick Portland Concrete Cement slabs on the Heavy-Duty Maintenance Apron (a total of approximately 300,531 ft ²). These areas for replacement are adjacent to Building 2050. Repair/right-size Taxiway G (from Runway to Taxiway J) and Taxiway E (from Taxiway J to Taxiway P) (a total of approximately 129,816 ft ²). Repair pavement of Taxiway P (from Taxiway C to Taxiway A) (a total of 207,531 ft ²).	Airfield, QD Arcs, ERP Sites	783,144	0
Other Infrastructure Improvement Projects							
I3. Repair Parking Lot FSS Building 2447 West Lot	110007	2015	Administrative	Repair the parking lot, west of Building 2447. Surface area of this pavement feature is approximately 3,990 square yards. The parking lot will reach the end of its useful life by 2011.	ERP Sites	35,910	0

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Other Infrastructure Improvement Projects (continued)							
14. Repair Electrical Power Distribution Lines, Various	120064 120066 120067 120068 120069	2015	Multiple	Repair the electrical power distribution lines at various locations throughout the installation.	Various	34,200	0
15. Construct New Deicing Fluid System (Building 2407)	030026	2017	Industrial	Replace deicing fluid asphalt dikes with concrete. In addition, replace the pump house, four 12,000-gallon tanks, two 150 gallons per minute pumps, and electrical controls. Modify and refurbish the piping and provide all tank protection, detection, automatic shutdown, and alarm systems. Building 2407 is a pumping station (approximately 293 ft ²) that was constructed in 1956, and is located in the vicinity of the bulk fuels area at Fairchild AFB.	Airfield	–	0
16. Construct/Repair Intrusion Detection System (Flightline)	120087	2013	Airfield	Install a buried line sensor around certain portions of the airfield (Christmas Tree, pavements off Building 2050, and around Hangar Row [Buildings 1011 through 1019]). The project would also include installing four field distribution boxes (at the airfield), three thermal imagers (at the airfield), and eight surveillance cameras (four surveillance cameras in Building 1011 and four surveillance cameras in Building 1015).	Various	20,000	0
Net Change in Impervious Surface							0

Key: ft² = square feet; FY = fiscal year; ERP = Environmental Restoration Program; QD = quantity-distance

Table A-4. Proposed Natural Infrastructure Management Project

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft²)	Change in Impervious Surface (ft²)
Selected Natural Infrastructure Project							
N11. Prairie Restoration/ Long-term Weed Control Phases I and II	1274001 1374001	2013 2014	Open Space	Restore native vegetation in areas where noxious weeds are/were present and have occupied the majority of the ground cover in two phases (Phase I in 2013 and Phase II in 2014). Project includes comprehensive weed-control strategy, managed disturbance, biological weed control, maintenance-level herbicide applications, planting of native plants to compete, and intervention to control invasive plants.	T&E, Wetlands, ERP Sites, QD Arcs	Phase I: 10,890,000 Phase II: 10,890,000	0
Net Change in Impervious Surface							0

Key: ft² = square feet; FY = fiscal year; ERP = Environmental Restoration Program; T&E = threatened and endangered; QD = quantity-distance

Table A-5. Proposed Strategic Sustainability Performance Project

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft ²)	Change in Impervious Surface (ft ²)
Selected Strategic Sustainability Performance Project							
S1. Repair/Replace, Heating, GSHP-Boiler Hybrid, AFOSI Building 644	110080	2013	Administrative	Replace four existing boilers with a new geothermal heat pump system and one high-efficiency condensing boiler. Building 644 has boilers with measured efficiency of less than 40 percent. This project will replace these boilers with three 75 percent-efficient ground-source heat pumps and one 95 percent-efficient condensing boiler.	ERP Sites	—	0
Net Change in Impervious Surface							0

Key: ft² = square feet; FY = fiscal year; ERP = Environmental Restoration Program; O&M = operation and maintenance; AICUZ = Air Installation Compatible Use Zone

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APPENDIX B

**INTERAGENCY AND INTERGOVERNMENTAL COORDINATION
FOR ENVIRONMENTAL PLANNING (IICEP), NATIVE AMERICAN TRIBAL
CONSULTATION, AND PUBLIC INVOLVEMENT CORRESPONDENCE**

IICEP Distribution List and Letter

The Draft IDEA and FONSI/FONPA were made available to the following agencies for a 45-day review period from 21 August 2012 to 5 October 2012. No comments were received during this review period. The IICEP distribution letter is included on the following pages.

Mr. Dave Duncan, Water Quality
Washington State Department of Ecology
North 4601 Monroe
Spokane, WA 99205-1295

City of Airway Heights
Attn: Planning Department
13120 West 13th Avenue
Airway Heights, WA 99001

Dr. Allyson Brooks, State Historic Preservation Officer
Department of Archaeology & Historic Preservation
1063 South Capitol Way, Suite 106
Olympia WA 98501

Upper Columbia Fish and Wildlife Office
Attn: NEPA Program Coordinator
11103 East Montgomery Drive
Spokane Valley, WA 99206

Mr. John Andrews, Regional Director
Washington Department of Fish and Wildlife
2315 North Discovery Place
Spokane Valley, WA 99216-1566

Spokane Public Library
906 West Main Avenue
Spokane, WA 99201

Mr. Joe Southwell, Air Quality Engineer
Spokane Regional Clean Air Agency
3104 East Augusta Avenue
Spokane, WA 99207-5384

Spokane County
Public Works Building and Planning
Attn: Planning Department
1026 West Broadway Avenue
Spokane, WA 99260

Ms. Jose Linares, Director
U.S. Forest Service
Region 6, Pacific Northwest Region
333 Southwest First Avenue
Portland, OR 97204-3440

Ms. Laura Jo West, Supervisor
Colville National Forest
765 South Main Street
Colville, WA 99114

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR MOBILITY COMMAND

MEMORANDUM FOR DISTRIBUTION

[STAMP DATE]

FROM: HQ AMC/A7P
507 Symington Drive
Scott AFB, IL 62225-5022

SUBJECT: Environmental Assessment of Installation Development at Fairchild Air Force Base (AFB), Washington

1. Headquarters Air Mobility Command, on behalf of the 92nd Air Refueling Wing at Fairchild AFB, Washington, has initiated an Environmental Assessment of Installation Development (IDEA) addressing selected projects from those programmed and reasonably foreseeable installation development projects identified for the next 5 fiscal years (FYs) (FY 2013 to FY 2018). Fairchild AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing process of installation development by evaluating selected projects in a single environmental assessment. The projects analyzed in this IDEA fall under five categories: demolition, construction, infrastructure improvement, natural infrastructure management, and strategic sustainability performance.
2. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation and solicit comments on the attached Draft Environmental Assessment for this Proposed Action. Also enclosed is a copy of the distribution list of other Federal, state, and local agencies to be contacted regarding this Proposed Action. If you feel there are any additional individuals that should review and comment on the proposal, please feel free to include them in your distribution of this letter and the attached materials.
3. Please provide any comments or information within 45 days of the receipt of this correspondence to HQ AMC/A7PI, 507 Symington Drive, Scott AFB, Illinois, 62225-5022.
4. If your staff has any questions, our point-of-contact is Ms. Jean Reynolds, HQ AMC/A7PI, (618) 229-0843, or email to jean.reynolds-02@us.af.mil.

BRIAN C. MURPHY, Colonel, USAF
Chief, Programs Division
Directorate of Installation & Mission Support

Attachment:
Draft Environmental Assessment
DISTRIBUTION: See attached

Native American Tribal Consultation Distribution List

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* and its implementing instruction Department of Defense Instruction 4710.02, *DOD Interactions with Federally Recognized Tribes*, Fairchild AFB will endeavor to build a lasting government-to-government relationship with affiliated, federally recognized tribes. The tribes identified below have been contacted and provided information regarding this document.

Sylvia Peasley, Cultural Committee Chair
Confederated Tribes of the Colville Reservation
P.O. Box 150
Nespelem, WA 99155

Spokane Tribe of Indians
P.O. Box 100
Wellpinit, WA 99040

Sev Jones, Director of Planning and
Development
Kalispel Tribal Headquarters
P.O. Box 39
Usk, WA 99180

The Coeur d'Alene Tribe
850 A. Street
Plummer, ID 83851

Informal USFWS Consultation



United States Department of the Interior

FISH AND WILDLIFE SERVICE

*Upper Columbia Fish and Wildlife Office
11103 East Montgomery Drive
Spokane, Washington 99206*



May 2, 2007

Gerald T. Johnson
Environmental Flight Chief
Department of the Air Force
Headquarters 92D Air Refueling Wing (AMC)
Fairchild Air Force Base Washington

Subject: Fairchild AFB Weed Control Project; FWS Reference 1-9-07-I-0074
(File #380.0000)

Dear Mr. Johnson:

This responds to your February 27, 2007, letter requesting informal consultation on the Fairchild AFB Weed Control project in Spokane County, Washington. We understand that the project involves the application of specific herbicides for weed control activities on habitat that supports Spalding's catchfly. Your letter, with a biological assessment (BA), was received in this office on February 28, 2007, and requested our concurrence with your determinations of effect for Spalding's catchfly.

The U.S. Fish and Wildlife Service (Service) concurs that the proposed project, as described in the BA, is "not likely to adversely affect" Spalding's catchfly. This decision is based on the fact that the herbicide being used, Weedmaster (2-4D Amine and Banvil) has no residual and breaks down within several weeks. In addition, measures are being taken to minimize contact with Spalding's catchfly and its immediate habitat, and application activities will adhere to recommendations in the Draft Recovery Plan for Spalding's catchfly. Concurrence by the Service is contingent upon implementing the project as described in the BA.

This concludes informal consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act). This project should be re-analyzed if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; and/or, if a new species is listed or critical habitat is designated that may be affected by this project.

If you have further questions about this letter or your responsibilities under the Act, please contact Carrie Cordova of this office at 509-893-8022.

Sincerely,

Duganne Audet

for Supervisor

c: WNHP, Olympia



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 92D AIR REFUELING WING (AMC)
FAIRCHILD AIR FORCE BASE WASHINGTON



February 27, 2007

Mr. Gerald T. Johnson
Environmental Flight Chief
100 W. Ent Street, Suite 100
Fairchild AFB, WA 99011

RECEIVED

FEB 28 2007

U.S. FISH & WILDLIFE SERVICE
ECOLOGICAL SERVICES
SPOKANE, WA

Ms. Carrie Cordova
United States Fish and Wildlife Service
11103 E. Montgomery Road
Spokane, WA 99206

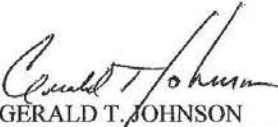
SUBJECT: Biological Assessment for Weed Control within Spalding's Catchfly Habitat

Dear Ms. Cordova

Please find the biological assessment addressing weed control and habitat protection using herbicide treatment within a small conservation area for *Silene spaldingii* (Spalding's Catchfly) on Fairchild Air Force Base. The assessment finds that these actions "may affect, but not likely to adversely affect" the population and may positively affect the habitat increasing the potential for further recovery. We ask that you review our assessment and provide required consultation for our proposal. We have studied the draft Recovery Plan for *Silene spaldingii* and are encouraged that the proposed actions are similar to others attempting to achieve similar objectives.

We have recently been awarded funds that would cover a large control program in 2007. Expansion of several very aggressive noxious weeds places the conservation area at risk of declining ecological resiliency and with funding available this year, we hope that you might work with us to achieve the necessary steps for consultation prior to May/June 2007 timeframe.

If you should need other information or have questions, please feel free to contact Joni Sasich at 247-8207 or myself at 247-8152.


GERALD T. JOHNSON
Environmental Flight Chief

Professional Expeditionary Airmen

Memorandum of Agreement for Architectural Resources

MEMORANDUM OF AGREEMENT

BETWEEN THE COMMANDER, 92D AIR REFUELING WING,
FAIRCHILD AIR FORCE BASE

AND THE

THE WASHINGTON STATE HISTORIC PRESERVATION OFFICER

AND THE

THE SPOKANE COUNTY HISTORIC PRESERVATION OFFICER

REGARDING DEMOLITION ACTIVITIES ASSOCIATED WITH
FAIRCHILD AIR FORCE BASE, WASHINGTON

WHEREAS, Commander, 92d Air Refueling Wing, Fairchild Air Force Base (hereinafter referred to as the "Air Force") proposes to conduct demolition activities involving five buildings/structures on Fairchild Air Force Base (FAFB) in order to decrease the cost of maintaining infrastructure by reducing the inventory of underutilized and deteriorated buildings and accommodate mission changes that have occurred or are forecasted to occur at the base, and to meet its national defense mission requirements by complying with The Air Force Civil Engineer Demolition Policy, which established a program to eliminate excess and obsolete Air Force (AF) facility inventories by fiscal year 2020; and

WHEREAS, the Air Force may also conduct demolition activities on an additional 11 buildings/structures on FAFB, pending a thorough analysis in accordance with the National Environmental Policy Act; and

WHEREAS, the Air Force has determined that the proposed demolition activities (hereinafter "Undertaking") have the potential to cause effects on historic properties and are subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 United States Code (U.S.C.) 470f, and its implementing regulations, 36 Code of Federal Regulations Agency part 800; and

WHEREAS, the Air Force has established the area of potential effect (APE) for the Undertaking as defined at 36 CFR 800.16(d) as the historic flight line district on Fairchild AFB; and

WHEREAS, the Air Force has determined that the Undertaking may adversely impact facilities within a flight line district, specifically buildings 1001, 1003, 1005, 1007, 1009, 1011, 1012, 1013, 1015, 1017, 1019, 1021, 1023, 1024, 1025, and 1026, which are contributing elements to a district eligible for listing in the National Register of Historic Places and, thus, eliminate the existence of this historic district; and

WHEREAS, the Air Force acknowledges that Building 2245 is eligible for the National Register of Historic Places and therefore a candidate for future historic rehabilitation actions on the base, and due to such, the Air Force will consult with the Washington State Historic Preservation Officer (SHPO) prior to any undertaking (other than routine maintenance or in-kind repairs) that could affect the building's character-defining features; and

WHEREAS, in accordance with 36 CFR 800.6(a)(1), the Air Force has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination, and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR 800.6(a)(1)(iii);

NOW, THEREFORE, the Signatory Parties to this MOA, i.e. Fairchild Air Force and the Washington and Spokane County SHPOs, agree that the Air Force will carry out the Undertaking at Fairchild Air Force Base in accordance with the following stipulations to satisfy its responsibilities under Section 106 of the NHPA.

STIPULATIONS

The Air Force shall ensure that the following measures are carried out by, or under the supervision of, a cultural resource professional(s) possessing Secretary of Interior (SOI) Professional Qualifications, as defined by 36 CFR Part 61, as well as the appropriate area of expertise:

I. BUILDING SPECIFIC MITIGATION: The Air Force will document the hangars along the eligible FAFB Flight Line Historic District, via a Washington Department of Archaeology and Historic Preservation (DAHP) Level II Report, as a permanent record of these historic properties. Air Force documentation and blueprints indicate three original floor plans. Before demolition, the Air Force shall consult with the SHPO to identify the best representative examples of the variations of these pre-fabricated structures.

II. FLIGHTLINE SPECIFIC MITIGATION: The Air Force will create a diorama of the core facilities of the flight line historic district, estimated to be approximately 20 buildings. The Air Force anticipates that the diorama would be a minimum of a 4-foot x 2-foot scale model; approximately 1 inch equals 100 feet. The exterior of each facility would contain basic representational architectural features; however, the overall goal is to document the large number and exterior similarities of the facilities. The exact buildings and features to be included will be determined in coordination with DAHP. The diorama will be featured in the new Wing Headquarters facility.

III. PUBLIC EDUCATION AND DISPLAY

A. Visitor's Center Visual Informational Display: The Air Force will create a professional display approximately 24 square feet for display in the lobby of the base visitor's center. This display will highlight the history of the base with special emphasis on the base's

role and development during the Cold War to include the B-52s that were based here and the KC-135s' role in supporting their long-range missions, as well as information about FAFB's namesake, former Air Force Chief of Staff and Washington State native, General Muir S. Fairchild.

B. B-52 and KC-135 Visual Informational Display: The Air Force will create a professional display at least 30 square feet for display in the Customer Service Area of the Force Support Squadron. The display will highlight the history and role of FAFB and the B-52 bomber and KC-135 Tanker throughout the Cold War Era.

C. The Air Force will create a video detailing the history of FAFB. The video will be a minimum of 10 minutes and utilize both historical and present day pictures and videos. It may be used in conjunction with mission briefings provided to visiting dignitaries, community members, and other base visitors and distributed at no charge to any interested member of the public.

D. Finally, the Air Force will supplement FAFB's public web site to feature documents developed under Stipulation I., along with historical photos and other facility surveys previously prepared. Information will be included on the people memorialized by base streets including Bong, Ent, Foulois, George, Huyser, Arnold, etc.

IV. DURATION

This MOA will be null and void if its stipulations are not carried out within five (5) years from the date of its execution. At such time, and prior to work continuing on the undertaking, the Air Force shall either (a) execute a MOA pursuant to 36 C.F.R. § 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 C.F.R. § 800.7. Prior to such time, the Air Force may request a reconsideration of the terms of the MOA and amend it in accordance with Stipulation VIII below. The Air Force shall notify other signatories as to the course of action it will pursue.

V. POST-REVIEW DISCOVERIES

A. If during the performance of the Undertaking, previously unknown archaeological sites are discovered then:

1. Any activities within the immediate area will be halted or reasonable measures to avoid or minimize impacts to the items discovered and surrounding property will be undertaken.
2. The base Cultural Resource Manager (CRM) will be immediately notified. Upon notification, personnel meeting SOI Professional Qualifications for Archaeology shall make a recommendation to the CRM on a determination of eligibility of the cultural resource.

a. If the discovery is not considered eligible for the NRHP, then work may resume.

b. If the individual meeting SOI Professional Qualifications determines the property is eligible for the NRHP, the CRM will notify the SHPO via telephone, fax, or e-mail. Consultation shall not exceed thirty (30) calendar days unless mutually agreed upon. The CRM shall document the discovery and report it to the SHPO in accordance with Stipulation IV. If the SHPO does not object to the recommended actions, the actions will be implemented. If there is a disagreement over the terms of the treatment plan which cannot be resolved, the dispute resolution provisions contained in Stipulation VII will be followed.

c. Work may resume in the immediate area once consultation is completed.

B. If during the performance of the Undertaking, human remains are discovered, all work in the area shall immediately halt and standard operating procedures for inadvertent find shall be implemented. This information shall be documented and reported to the SHPO in accordance with Stipulation VI.

VI. MONITORING AND REPORTING

The CRM shall submit a report to the SHPO within 12-months of the effective date of this MOA and every 12-months thereafter until all projects associated with the Undertaking are completed or this MOA is terminated. Any report submitted shall list a summary of actions taken as a result of this Agreement and contain the following: 1. Project Name; 2. Location/Area; 3. A brief description of the project.

VII. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the Air Force shall consult with such party to resolve the objection. If the Air Force determines that such objection cannot be resolved, Air Force will:

A. Forward all documentation relevant to the dispute, including the Air Force's proposed resolution, to the ACHP. The ACHP shall provide the Air Force with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the Air Force shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. The Air Force will then proceed according to its final decision.

B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the Air Force may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the Air Force shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.

C. The Air Force's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

VIII. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

IX. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with other parties to attempt to develop an amendment per Stipulation VIII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, the Air Force must either (a) execute an MOA pursuant to 36 CFR § 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The Air Force shall notify the signatories as to the course of action it will pursue.

X. ANTI DEFICIENCY ACT

A. The Anti-Deficiency Act, 31 U.S.C. Section 1341, prohibits federal agencies from incurring an obligation of funds in advance of or in excess of available appropriations. Accordingly, the Signatory Parties agree that any requirement of obligation of funds arising from the terms of this MOA shall be subject to the availability of appropriated funds for that purpose, and that the stipulations contained in this MOA shall not be interpreted to require the obligation or expenditure of funds in violation of the Anti-Deficiency Act.

B. If compliance with the Anti-Deficiency Act alters or impairs the Air Force's ability to implement the stipulations of this MOA, the Air Force shall consult with the Signatory Parties. If an amendment is necessary, the provisions of Stipulation VIII shall be followed.

EXECUTION and implementation of this MOA evidences that the Air Force has afforded the SHPO and the ACHP an opportunity to comment on the Undertaking and its effect on historic

properties and has taken into account the effects of the undertaking to historic resources at Fairchild AFB.

SIGNATORIES:

FOR THE DEPARTMENT OF THE AIR FORCE; FAIRCHILD AIR FORCE BASE

 Date: 26 Nov 12
COLONEL BRIAN M. NEWBERRY
COMMANDER, 92D AIR REFUELING WING

FOR THE SPOKANE COUNTY HISTORIC PRESERVATION OFFICE

 Date: 11-28-2012
KRISTEN GRIFFIN
SPOKANE COUNTY HISTORIC PRESERVATION OFFICER

FOR THE WASHINGTON STATE HISTORIC PRESERVATION OFFICE

 Date: 11/29/12
ALLYSON BROOKS, Ph.D.,
WASHINGTON STATE HISTORIC PRESERVATION OFFICER

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APPENDIX C

**LIST OF FACILITIES ON FAIRCHILD AFB
AT OR APPROACHING 50 YEARS OLD BY 2018**

Table C-1. List of Facilities on Fairchild AFB Approaching 50 Years Old by 2018

Building Number	Structure Name	Construction Date	Fairchild AFB Eligibility Recommendation	SHPO Eligibility Recommendation (Individual or District)	SHPO Concurrence
1	Base Operations	1953	Not Eligible	Eligible; Noncontributing (District)	No
3	Fire Station	1955	Not Eligible	Eligible; Noncontributing (District)	No
152	Weapons System/M Mgt Flight	1955	Not Eligible	Not Eligible (Individual or District)	Yes
159	Mission Support Building	1955	Not Eligible	Not Eligible (Individual or District)	Yes
285	Jet Engine Maintenance Shop	1953	Not Eligible	Not Eligible (Individual or District)	Yes
445	Squadron Operations	1953	Not Eligible	Not Eligible (Individual or District)	Yes
446	Vehicle Maintenance Shop	1959	Not Eligible	Not Eligible (Individual or District)	Yes
620	House Supply & Storage	1958	Not Eligible	Not Eligible (Individual or District)	Yes
644	Air Force Office of Special Investigations (AFSOI)	1952	Not Eligible	Not Eligible (Individual or District)	Yes
716	Installation Library	1953	Not Eligible	Not Eligible (Individual or District)	Yes
1001	Small Aircraft Maintenance Dock	1955	Eligible	Eligible; Contributing (District)	Yes
1003	Large Aircraft Maintenance Dock	1958	Eligible	Eligible; Contributing (District)	Yes
1005	Helicopter Hangar (Rescue and Recovery)	1955	Eligible	Eligible; Contributing (District)	Yes
1007	Large Aircraft Maintenance Dock	1958	Eligible	Eligible; Contributing (District)	Yes
1009	Large Aircraft Maintenance Dock	1955	Eligible	Eligible; Contributing (District)	Yes
1011	Large Aircraft Maintenance Dock	1958	Eligible	Eligible; Contributing (District)	Yes
1012	Maintenance Dock (Fuel Cell)	1955	Eligible	Eligible; Contributing (District)	Yes
1013	Large Aircraft Maintenance Dock	1955	Eligible	Eligible; Contributing (District)	Yes
1015	Large Aircraft Maintenance Dock	1958	Eligible	Eligible; Contributing (District)	Yes
1017	Large Aircraft Maintenance Dock	1955	Eligible	Eligible; Contributing (District)	Yes
1019	Aircraft Corrosion Control	1958	Eligible	Eligible; Contributing (District)	Yes
1021	Aircraft Corrosion Control	1955	Eligible	Eligible; Contributing (District)	Yes
1023	Aircraft Corrosion Control	1952	Eligible	Eligible; Contributing (District)	Yes
1024	Aircraft Corrosion Control	1952	Eligible	Eligible; Contributing (District)	Yes
1025	Large Aircraft Maintenance Dock	1952	Eligible	Eligible; Contributing (District)	Yes

Building Number	Structure Name	Construction Date	Fairechild AFB Eligibility Recommendation	SHPO Eligibility Recommendation (Individual or District)	SHPO Concurrence
1026	Shop A/SE Storage Facility	1952	Eligible	Eligible; Contributing (District)	Yes
1029	Maintenance Hangar	1955	Eligible	Eligible; Contributing (District)	Yes
1033	Maintenance Hangar	1955	Eligible	Eligible; Contributing (District)	Yes
1037	Maintenance Dock (Fuel Cell)	1955	Eligible	Eligible; Contributing (District)	Yes
1060	Vehicle Refueling Shop	1960	Not Eligible	Not Eligible (Individual and District)	Yes
1200	Communications Transmitter	1954	Not Eligible	Not Eligible (District)	Yes
1201	Power Station	1954	Not Eligible	Not Eligible (District)	Yes
1207	Exhibits Lab	1956	Not Eligible	Not Eligible (District)	Yes
1212	ATC Tech Training Support	1952	Not Eligible	Not Eligible (District)	Yes
1230	Bottle Gases Storage	1956	Not Eligible	Not Eligible (District)	Yes
1238	Warehouse	1952	Not Eligible	Not Eligible (District)	Yes
1306	Gymnasium	1956	Not Eligible	Not Eligible (District)	Yes
1314	Fire Station	1957	Not Eligible	Not Eligible (District)	Yes
1316	Military Affiliate Radio System	1956	Not Eligible	Not Eligible (District)	Yes
1324	Group Airbase Headquarters	1952	Not Eligible	Not Eligible (District)	Yes
1334	ATC Technical Training Support	1952	Not Eligible	Not Eligible (District)	Yes
1342	ATC Technical Training Support	1952	Not Eligible	Not Eligible (District)	Yes
1350	Heating Plant	1952	Not Eligible	Not Eligible (District)	Yes
1401	Police Control and ID	1952	Not Eligible	Not Eligible (District)	Yes
1402	Paint and Repair Shop	1960	Not Eligible	Not Eligible (District)	Yes
1412	Technical Training Lab/Shop	1952	Not Eligible	Not Eligible (District)	Yes
1413	Vehicle Operations Heated Parking	1956	Not Eligible	Not Eligible (District)	Yes
1419	Area Support Medical Battalion Shop	1957	Not Eligible	Not Eligible (District)	Yes
1421	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1422	Storage, Mu-Cub Mag	1952	Not Eligible	Not Eligible (District)	Yes
1423	Storage, Mu-Cub Mag	1952	Not Eligible	Not Eligible (District)	Yes
1424	Storage, Mu-Cub Mag	1952	Not Eligible	Not Eligible (District)	Yes
1425	Storage, Mu-Cub Mag	1952	Not Eligible	Not Eligible (District)	Yes
1426	Storage Igloo	1954	Not Eligible	Not Eligible (District)	Yes

Building Number	Structure Name	Construction Date	Fairechild AFB Eligibility Recommendation	SHPO Eligibility Recommendation (Individual or District)	SHPO Concurrence
1427	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1434	Storage, Mu-Cub Mag	Not provided	Not Eligible	Not Eligible (District)	Yes
1435	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1436	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1437	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1438	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1439	Storage Igloo	1954	Not Eligible	Not Eligible (District)	Yes
1440	Storage Igloo	1954	Not Eligible	Not Eligible (District)	Yes
1441	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1442	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1443	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1444	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1448	Storage, Mu-Cub Mag	1952	Not Eligible	Not Eligible (District)	Yes
1449	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1450	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1451	Storage Igloo	1954	Not Eligible	Not Eligible (District)	Yes
1457	Inert Spares Storage	1956	Not Eligible	Not Eligible (District)	Yes
1458	Inert Spares Storage	1956	Not Eligible	Not Eligible (District)	Yes
1459	Inert Spares Storage	1956	Not Eligible	Not Eligible (District)	Yes
1460	Inert Spares Storage	1952	Not Eligible	Not Eligible (District)	Yes
1461	Water Pump Station	1956	Not Eligible	Not Eligible (District)	Yes
1462	Inert Spares Storage	1952	Not Eligible	Not Eligible (District)	Yes
1467	Military A2 Structure	1955	Not Eligible	Not Eligible (Individual and District)	Yes
1470	Vehicle Operations Parking Shed	1954	Not Eligible	Not Eligible (District)	Yes
1471	Vehicle Operations Parking Shed	1954	Not Eligible	Not Eligible (District)	Yes
1473	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1474	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1475	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1476	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1478	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes

Building Number	Structure Name	Construction Date	Fairechild AFB Eligibility Recommendation	SHPO Eligibility Recommendation (Individual or District)	SHPO Concurrence
1479	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1480	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1482	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1483	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1484	Storage Igloo	1952	Not Eligible	Not Eligible (District)	Yes
1724	Survival School	1956	Not Eligible	Not Eligible (Individual or District)	Yes
2001	Air Guard Building ^a	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2014	Elec. Power Gen Plant	1952	Not Eligible	Not Eligible (Individual or District)	Yes
2025	Base Exchange Pavement/Ground Facility ^a	1943	Not Eligible	Eligible (Individual)	No
2036	Mission Support Building	1955	Not Eligible	Not Eligible (Individual or District)	Yes
2050	Maintenance Hangar	1943	Eligible	Eligible (Individual)	Yes
2060	Contingency Response Wing	1959	Not Eligible	Not Eligible (Individual or District)	Yes
2096	Explosive Ordnance Disposal	1962	Not Eligible	Not Eligible (Individual or District)	Yes
2115	Vehicle Maintenance Shop	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2116	Vehicle service rack	1989	Not Eligible	Not Eligible (Individual or District)	Yes
2120	Field Training Facility	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2125	Headquarters Wing	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2135	Precision Measurement Equipment Lab (PMEL)	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2163	Jet Engine Inspection Shop (Warehouse)	1953	Not Eligible	Not Eligible (Individual)	Yes
2170	Vehicle Operations ^b	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2185	Recreation Center ^a	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2150	Base Personnel Office	1943	Not Eligible	Eligible (Individual)	No
2248	Warehouse Supd Equip ^b	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2249	Gym ^a	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2285	Headquarters Wing ^a	1943	Not Eligible	Not Eligible (Individual)	Yes
2325	Vehicle fuel station	1973	Not Eligible	Not Eligible (Individual or District)	Yes
2365	Family Support Center ^a	1943	Not Eligible	Not Eligible (Individual or District)	Yes

Building Number	Structure Name	Construction Date	Fairechild AFB Eligibility Recommendation	SHPO Eligibility Recommendation (Individual or District)	SHPO Concurrence
2392	Visiting Airmen's Quarters (Dormitories) ^a	1953	Not Eligible	Not Eligible (Individual or District)	Yes
2393	Visiting Airmen's Quarters (Dormitories) ^a	1959	Not Eligible	Not Eligible (Individual or District)	Yes
2402	Pump Station	1953	Not Eligible	Not Eligible (Individual or District)	Yes
2404	Pump Station	1957	Not Eligible	Not Eligible (Individual or District)	Yes
2407	Pump Station	1957	Not Eligible	Not Eligible (Individual or District)	Yes
2408	Large Pump Station	1956	Not Eligible	Not Eligible (Individual or District)	Yes
2428	Animal Clinic	1957	Not Eligible	Not Eligible (Individual or District)	Yes
2447	Headquarters Warehousing	1952	Not Eligible	Not Eligible (Individual or District)	Yes
2451	Base Exchange Maintenance Shop ^a	1943	Not Eligible	Not Eligible (Individual or District)	Yes
2452	Open Mess ^a	1943	Not Eligible	Not Eligible (Individual or District)	Yes
4200	Center Chapel	1962	Not Eligible	Not Eligible (Individual or District)	Yes
4325	Visitor Control Center	1945	Not Eligible	Not Eligible (Individual or District)	Yes
9000	Composite Medical Facility	1956	Not Eligible	Not Eligible (Individual or District)	Yes
9002	Materials Services (Medical Logistics)	1964	Not Eligible	Not Eligible (Individual or District)	Yes
9005	Htg Faculty Building	1956	Not Eligible	Not Eligible (Individual or District)	Yes
9010	Medical Command/Admin	1958	Not Eligible	Not Eligible (Individual or District)	Yes

Sources: FAFB 2005a, FAFB 2010d

Notes:

a. These facilities were listed as "temporary."

b. These facilities were listed as "semi-permanent."

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APPENDIX D

SUMMARY OF AIR EMISSIONS CALCULATIONS

Summary	Summarizes total emissions by calendar year for Project D1
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D1 to regional emissions.

Air Quality Emissions for Project D1

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	4.711	0.279	1.862	0.383	0.285	0.276	548.680
Fugitive Dust	-	-	-	-	6.615	0.661	-
Haul Truck On-Road	0.402	0.291	1.182	0.032	0.479	0.124	101.880
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
TOTAL	5.213	0.669	3.937	0.416	7.387	1.068	768.894

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **697.387 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00090%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000013%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D1

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
5.213	0.669	3.937	0.416	7.387
0.014%	0.002%	0.002%	0.008%	0.010%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project D2
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Air Quality Control Region Tier report for 2008, to be used to compare Project D2 to regional emissions.

Air Emissions for Project D2

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.736	0.044	0.291	0.060	0.045	0.043	85.790
Fugitive Dust	-	-	-	-	1.026	0.103	-
Haul Truck On-Road	0.062	0.045	0.183	0.005	0.074	0.019	15.803
Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
TOTAL	0.882	0.171	1.218	0.066	1.153	0.170	200.204

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **181.585 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00023%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000003%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D2 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate AQCR

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D2

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.882	0.171	1.218	0.066	1.153
0.002%	0.000%	0.000%	0.001%	0.002%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project D3
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D3 to regional emissions.

Air Emissions for Project D3

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.259	0.015	0.102	0.021	0.016	0.015	30.244
Fugitive Dust	-	-	-	-	0.323	0.032	-
Haul Truck On-Road	0.020	0.014	0.058	0.002	0.023	0.006	4.970
Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
TOTAL	0.362	0.112	0.904	0.024	0.370	0.058	133.825

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **121.380 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00016%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000002%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D3 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D3

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.362	0.112	0.904	0.024	0.370
0.001%	0.000%	0.000%	0.001%	0.001%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project D4
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Norther Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D4 to regional emissions.

Air Emissions for Project D4

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	3,498	0.208	1,383	0.284	0.212	0.205	407,344
Fugitive Dust	-	-	-	-	4,918	0.492	-
Haul Truck On-Road	0.299	0.216	0.879	0.024	0.356	0.093	75,750
Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98,611
TOTAL	3,880	0.506	3,005	0.309	5,493	0.794	581,706

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **527,607 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00068%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.000010%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D4 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D4

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
3,880	0.506	3,005	0.309	5,493
0.011%	0.001%	0.006%	0.008%	0.007%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project D5
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D5 to regional emissions.

Air Quality Emissions for Project D5

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.514	0.031	0.203	0.042	0.031	0.030	59,868
Fugitive Dust	-	-	-	-	0.707	0.071	-
Haul Truck On-Road	0.043	0.031	0.126	0.003	0.051	0.013	10,884
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118,334
TOTAL	0.656	0.160	1.222	0.046	0.798	0.120	189,086

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **171,501 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.000222%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000003%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D5 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D5

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.656	0.160	1.222	0.046	0.798
0.002%	0.000%	0.000%	0.001%	0.001%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project D6
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D6 to regional emissions.

Air Quality Emissions for Project D6

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	5.491	0.326	2.171	0.446	0.332	0.322	639,406
Fugitive Dust	-	-	-	-	7.737	0.774	-
Haul Truck On-Road	0.471	0.340	1.383	0.037	0.560	0.146	119,176
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118,334
TOTAL	6.060	0.765	4.446	0.485	8.639	1.247	876,915

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **795.362 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00103%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000015%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D6 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D6

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
6,060	0.765	4.446	0.485	8.639
0.017%	0.002%	0.002%	0.010%	0.012%
				0.011%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project D7
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D7 to regional emissions.

Air Quality Emissions for Project D7

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.132	0.008	0.052	0.011	0.008	0.008	15.432
Fugitive Dust	-	-	-	-	0.143	0.014	-
Haul Truck On-Road	0.009	0.006	0.026	0.001	0.010	0.003	2.206
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
TOTAL	0.240	0.113	0.970	0.013	0.171	0.031	135.971

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **123.326 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00016%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000002%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D7 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D7

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.240	0.113	0.970	0.013	0.171
0.001%	0.000%	0.000%	0.000%	0.000%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project D8
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D8 to regional emissions.

Air Quality Emissions for Project D8

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.037	0.002	0.014	0.003	0.002	0.002	4.322
Fugitive Dust	-	-	-	-	0.005	0.001	-
Haul Truck On-Road	0.000	0.000	0.001	0.000	0.000	0.000	0.081
Commuter	0.040	0.039	0.357	0.000	0.004	0.002	47.333
TOTAL	0.077	0.042	0.372	0.004	0.012	0.005	51.736

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **46.925 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00006%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.000001%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D8 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D8

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.077	0.042	0.372	0.004	0.012
0.000%	0.000%	0.000%	0.000%	0.000%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project D9
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D9 to regional emissions.

Air Quality Emissions for Project D9

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.069	0.004	0.027	0.006	0.004	0.004	8.025
Fugitive Dust	-	-	-	-	0.050	0.005	-
Haul Truck On-Road	0.003	0.002	0.009	0.000	0.004	0.001	0.766
Commuter	0.040	0.039	0.357	0.000	0.004	0.002	47.333
TOTAL	0.111	0.046	0.393	0.006	0.061	0.012	56.125

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **50.905 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00007%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000001%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D9 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined					
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573	10,862

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D9

Point and Area Sources Combined					
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573	10,862
0.111	0.046	0.393	0.006	0.061	0.012
0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project D10
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D10 to regional emissions.

Air Quality Emissions for Project D10

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	1.166	0.069	0.461	0.095	0.071	0.068	135.781
Fugitive Dust	-	-	-	-	1.623	0.162	-
Haul Truck On-Road	0.099	0.071	0.290	0.008	0.117	0.031	24.992
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
TOTAL	1.364	0.239	1.643	0.104	1.820	0.267	279.107

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO ₂ emissions converted to metric tons =	253.150	metric tons
State of Washington's CO ₂ emissions =	77,500,000	metric tons (U.S. DOE/EIA 2011)
Percent of Washington's CO ₂ emissions =	0.000333%	
United States' CO ₂ emissions =	5,425,600,000	metric tons (U.S. DOE/EIA 2011)
Percent of USA's CO ₂ emissions =	0.000005%	

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D10 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D10

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
1.364	0.239	1.643	0.104	1.820
0.004%	0.001%	0.002%	0.003%	0.002%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project D11
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D11 to regional emissions.

Air Quality Emissions for Project D11

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.069	0.004	0.027	0.006	0.004	0.004	8.025
Fugitive Dust	-	-	-	-	0.062	0.006	-
Haul Truck On-Road	0.004	0.003	0.011	0.000	0.004	0.001	0.948
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	0.138	0.073	0.633	0.007	0.076	0.015	87.863

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO ₂ emissions converted to metric tons =	79.691	metric tons
State of Washington's CO ₂ emissions =	77,500,000	metric tons (U.S. DOE/EIA 2011)
Percent of Washington's CO ₂ emissions =	0.00010%	
United States' CO ₂ emissions =	5,425,600,000	metric tons (U.S. DOE/EIA 2011)
Percent of USA's CO ₂ emissions =	0.000001%	

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D11 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D11

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.138	0.073	0.633	0.007	0.076
0.000%	0.000%	0.000%	0.000%	0.000%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project D12
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D12 to regional emissions.

Air Quality Emissions for Project D12

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.069	0.004	0.027	0.006	0.004	0.004	8.025
Fugitive Dust	-	-	-	-	0.059	0.006	-
Haul Truck On-Road	0.004	0.003	0.011	0.000	0.004	0.001	0.914
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	0.138	0.073	0.632	0.007	0.074	0.015	87.828

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **79.660 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00010%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.000001%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D12 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D12

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.138	0.073	0.632	0.007	0.074
0.000%	0.000%	0.000%	0.000%	0.000%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project D13
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project D13 to regional emissions.

Air Quality Emissions for Project D13

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.069	0.004	0.027	0.006	0.004	0.004	8.025
Fugitive Dust	-	-	-	-	0.059	0.006	-
Haul Truck On-Road	0.004	0.003	0.011	0.000	0.004	0.001	0.914
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	0.138	0.073	0.632	0.007	0.074	0.015	87.828

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **79.660 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00010%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000001%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D13 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project D13

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.138	0.073	0.632	0.007	0.074
0.000%	0.000%	0.000%	0.000%	0.000%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C1
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Emergency Generator	Estimates emissions from the operation of emergency generators.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Air Quality Control Region Tier report for 2008, to be used to compare Project C1 to regional emissions.

Air Emissions for Project C1

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	4,850	0.617	2,136	0.384	0.348	0.337	549,905
Fugitive Dust	-	-	-	-	3.071	0.307	-
Haul Truck On-Road	0.939	0.679	2,760	0.074	1,117	0.290	237,815
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118,334
TOTAL	5.889	1.395	5,788	0.459	4.546	0.941	906,053

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **821,790 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00106%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.000015%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2012. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012

Air Emissions from Project C1

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
5,889	1,395	5,788	0.459	4,546
0.016%	0.004%	0.002%	0.009%	0.006%
				0.009%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project C2
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project C2 to regional emissions.

Air Emissions for Project C2

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	5.682	0.501	2.465	0.451	0.398	0.386	646.456
Fugitive Dust	-	-	-	-	1.504	0.150	-
Haul Truck On-Road	0.239	0.173	0.703	0.019	0.284	0.074	60.527
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
TOTAL	6.053	0.806	4.357	0.472	2.199	0.618	864.761

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **784.338 metric tons**
 State of Illinois's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Illinois's CO₂ emissions = **0.00101%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000014%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C2 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project C2

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
6.053	0.806	4.357	0.472	2.199
0.017%	0.002%	0.002%	0.010%	0.003%
				0.006%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C3
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Emergency Generator	Estimates emissions from the operation of emergency generators.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project C3 to regional emissions.

Air Emissions for Project C3

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	5.411	0.535	2.358	0.429	0.382	0.370	614.980
Fugitive Dust	-	-	-	-	1.766	0.177	-
Haul Truck On-Road	0.291	0.210	0.855	0.023	0.346	0.090	73.631
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
TOTAL	5.834	0.876	4.402	0.454	2.506	0.645	846.390

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **767.676 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00099%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000014%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C3 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project C3

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
5.834	0.876	4.402	0.454	2.506
0.016%	0.002%	0.002%	0.009%	0.004%
				0.006%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C4
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project C4 to regional emissions.

Air Emissions for Project C4

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	5.198	0.515	2.273	0.412	0.369	0.358	589,950
Fugitive Dust	-	-	-	-	0.571	0.057	-
Haul Truck On-Road	0.229	0.166	0.674	0.018	0.273	0.071	58,034
Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98,611
TOTAL	5.509	0.763	3.690	0.431	1.220	0.491	746,595

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **677.162 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00087%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000012%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C4 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573	10,862

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012

Air Emissions from Project C4

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
38,050	258,845	4,912	70,573	10,862
5,509	0.763	3.690	0.431	1.220
0.014%	0.0003%	0.075%	0.001%	0.011%
				0.005%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C5
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Emergency Generator	Estimates emissions from the operation of emergency generators.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project C5 to regional emissions.

Air Emissions for Project C5

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	5,363	0.466	2,339	0.425	0.379	0.368	609,426
Fugitive Dust	-	-	-	-	0.943	0.094	-
Haul Truck On-Road	0.142	0.103	0.417	0.011	0.169	0.044	35,907
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118,334
TOTAL	5,604	0.667	3,648	0.438	1.500	0.512	763,666

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **692.645 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00089%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000013%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C5 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 09 January 2012.

Air Emissions from Project C5

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
5,604	0.667	3,648	0.438	1,500
0.015%	0.002%	0.001%	0.009%	0.002%
				0.005%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C6
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Emergency Generator	Estimates emissions from the operation of emergency generators.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project C6 to regional emissions.

Air Emissions for Project C6

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	9.479	0.917	3.967	0.760	0.628	0.609	1,089.049
Fugitive Dust	-	-	-	-	10.317	1.032	-
Haul Truck On-Road	1.739	1.258	5.111	0.137	2.069	0.538	440.384
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
TOTAL	11.351	2.306	10.268	0.899	13.026	2.186	1,687.211

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **1,530.301 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00197%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.000028%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C6 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 09 January 2012.

Air Emissions from Project C6

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
11.351	2.306	10.268	0.899	13.026
0.031%	0.006%	0.004%	0.018%	0.020%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project C7
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Emergency Generator	Estimates emissions from the operation of emergency generators.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Air Quality Control Region Tier report for 2008, to be used to compare Project C7 to regional emissions.

Air Emissions for Project C7

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	4.784	0.409	2.109	0.378	0.344	0.334	541.810
Fugitive Dust	-	-	-	-	0.031	0.003	-
Haul Truck On-Road	0.014	0.010	0.041	0.001	0.016	0.004	3.507
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
TOTAL	4.897	0.518	3.042	0.380	0.401	0.347	663.651

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **601.931 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00078%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000011%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2012. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C7 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012

Air Emissions from Project C7

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
4.897	0.518	3.042	0.380	0.401
0.013%	0.001%	0.001%	0.008%	0.001%
				0.003%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C8
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Emergency Generator	Estimates emissions from the operation of emergency generators.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Air Quality Control Region Tier report for 2008, to be used to compare Project C8 to regional emissions.

Air Emissions for Project C8

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	-	-	-	-	-	-	-
Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	0.005	0.003	0.014	0.000	0.006	0.001	1.209
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118.334
TOTAL	0.104	0.102	0.906	0.002	0.015	0.007	119.543

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **108.425 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00014%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000002%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2012. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C8 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012

Air Emissions from Project C8

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.104	0.102	0.906	0.002	0.015
0.000%	0.000%	0.000%	0.000%	0.000%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C9
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project C9 to regional emissions.

Air Emissions for Project C9

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	6.609	0.651	2.831	0.527	0.454	0.441	754.465
Fugitive Dust	-	-	-	-	4.036	0.404	-
Haul Truck On-Road	0.336	0.243	0.986	0.026	0.399	0.104	84.962
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
TOTAL	7.077	1.025	5.007	0.555	4.902	0.956	997.205

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **904.465 metric tons**
 State of Illinois's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Illinois's CO₂ emissions = **0.00117%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000017%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C9 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project C9

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
7.077	1.025	5.007	0.555	4.902
0.019%	0.003%	0.002%	0.011%	0.007%
				0.009%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project C10
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Emergency Generator	Estimates emissions from the operation of emergency generators.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Air Quality Control Region Tier report for 2008, to be used to compare Project C10 to regional emissions.

Air Emissions for Project C10

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.202	0.012	0.082	0.017	0.012	0.012	24.967
Fugitive Dust	-	-	-	-	4.050	0.405	-
Haul Truck On-Road	0.195	0.141	0.573	0.015	0.232	0.060	49.379
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	0.463	0.219	1.250	0.034	4.300	0.481	153.235

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO ₂ emissions converted to metric tons =	138.984	metric tons
State of Washington's CO ₂ emissions =	77,500,000	metric tons (U.S. DOE/EIA 2011)
Percent of Washington's CO ₂ emissions =	0.00018%	
United States' CO ₂ emissions =	5,425,600,000	metric tons (U.S. DOE/EIA 2011)
Percent of USA's CO ₂ emissions =	0.000003%	

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2012. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C10 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012

Air Emissions from Project C10

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.463	0.219	1.250	0.034	4.300
0.001%	0.001%	0.000%	0.001%	0.006%
				0.004%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project C11
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks conducting debris removal from the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project C11 to regional emissions.

Air Quality Emissions for Project C11

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.273	0.016	0.110	0.023	0.017	0.016	33.333
Fugitive Dust	-	-	-	-	4.398	0.440	-
Haul Truck On-Road	0.004	0.003	0.011	0.000	0.004	0.001	0.914
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	0.342	0.084	0.716	0.024	4.425	0.461	113.136

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **102.614 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00013%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.000002%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C11 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington- Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project C11

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.342	0.084	0.716	0.024	4.425
0.001%	0.000%	0.000%	0.000%	0.004%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project I1
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill and excavation materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project I1 to regional emissions.

Air Emissions for Project I1

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	4.748	0.377	2.094	0.376	0.341	0.331	538.212
Fugitive Dust	-	-	-	-	0.785	0.079	-
Haul Truck On-Road	0.012	0.009	0.035	0.001	0.014	0.004	3.023
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	4.826	0.451	2.724	0.377	1.146	0.417	620.125

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **562.453 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00073%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.0000104%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project I1

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
4.826	0.451	2.724	0.377	1.146
0.0133%	0.0012%	0.0011%	0.0077%	0.0016%
				0.0038%

Regional Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project I2
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill and excavation materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project I2 to regional emissions.

Air Quality Emissions for Project I2

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	16,264	0.961	6,462	1,332	0.985	0.955	1,908,213
Fugitive Dust	-	-	-	-	65,801	6,580	-
Haul Truck On-Road	0.935	0.676	2,748	0.074	1,112	0.289	236,762
Commuter	0.099	0.099	0.892	0.001	0.009	0.006	118,334
TOTAL	17,299	1,735	10,102	1,407	67,908	7,831	2,263,309

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **2,052.822 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons** (U.S. DOE/EIA 2011)
Percent of Washington's CO₂ emissions = **0.00265%**
United States' CO₂ emissions = **5,425,600,000 metric tons** (U.S. DOE/EIA 2011)
Percent of USA's CO₂ emissions = **0.000038%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I2 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Easter-Washington-Northern Idaho Interstate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project I2

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
17,299	1,735	10,102	1,407	67,908
0.048%	0.005%	0.004%	0.029%	0.096%
				0.072%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project I3
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill and excavation materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project I3 to regional emissions.

Air Emissions for Project I3

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	0.112	0.006	0.045	0.010	0.007	0.007	13.719
Fugitive Dust	-	-	-	-	2.077	0.208	-
Haul Truck On-Road	0.014	0.010	0.042	0.001	0.017	0.004	3.619
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	0.192	0.083	0.682	0.011	2.108	0.223	96.227

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **87.278 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00011%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.0000016%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I3 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project I3

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.192	0.083	0.682	0.011	2.108
0.0005%	0.0002%	0.0003%	0.0002%	0.0030%
				0.0021%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project I4
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill and excavation materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project I4 to regional emissions.

Air Emissions for Project I4

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	-	-	-	-	-	-	-
Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	-	-	-	-	-	-	-
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	0.066	0.066	0.595	0.001	0.006	0.004	78.889

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **71.552 metric tons**
State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
Percent of Washington's CO₂ emissions = **0.00009%**
United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
Percent of USA's CO₂ emissions = **0.0000013%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I4 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project I4

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.066	0.066	0.595	0.001	0.006
0.0002%	0.0002%	0.0002%	0.0000%	0.0000%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project I5
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill and excavation materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project I5 to regional emissions.

Air Emissions for Project I5

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	4.784	0.420	2.109	0.378	0.344	0.334	541.810
Fugitive Dust	-	-	-	-	0.062	0.006	-
Haul Truck On-Road	0.007	0.005	0.019	0.001	0.008	0.002	1.675
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	4.857	0.491	2.724	0.379	0.420	0.346	622.374

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **564.494 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00073%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.0000104%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I5 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project I5

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
4.857	0.491	2.724	0.379	0.420
0.0134%	0.0013%	0.0011%	0.0077%	0.0006%
				0.0032%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project I6
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill and excavation materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project I6 to regional emissions.

Air Emissions for Project I6

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	4.784	0.496	2.109	0.378	0.344	0.334	541.810
Fugitive Dust	-	-	-	-	0.523	0.052	-
Haul Truck On-Road	0.024	0.017	0.070	0.002	0.028	0.007	6.046
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	4.874	0.579	2.774	0.381	0.902	0.397	626.745

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO ₂ emissions converted to metric tons =	568.458	metric tons
State of Washington's CO ₂ emissions =	77,500,000	metric tons (U.S. DOE/EIA 2011)
Percent of Washington's CO ₂ emissions =	0.00073%	
United States' CO ₂ emissions =	5,425,600,000	metric tons (U.S. DOE/EIA 2011)
Percent of USA's CO ₂ emissions =	0.0000105%	

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I6 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project I6

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
4.874	0.579	2.774	0.381	0.902
0.0134%	0.0015%	0.0011%	0.0078%	0.0013%
				0.0037%

Regional Emissions
Emissions
% of Regional

Summary	Summarizes total emissions by calendar year for Project NI1
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill materials and tree waste.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Eastern Washington-Northern Idaho Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project NI1 to regional emissions.

Air Emissions for Project NI1

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	-	-	-	-	-	-	-
Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	-	-	-	-	-	-	-
Commuter	0.033	0.033	0.297	0.0004	0.003	0.002	39.445
TOTAL	0.033	0.033	0.297	0.0004	0.003	0.002	39.445

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **35.776 metric tons**
 State of Washington's CO₂ emissions = **77,500,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Washington's CO₂ emissions = **0.00005%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000001%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project NI1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Interstate Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project NI1

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.033	0.033	0.297	0.0004	0.003
0.0001%	0.0001%	0.0001%	0.000008%	0.000%

Regional Emissions
 Emissions
 % of Regional

Summary	Summarizes total emissions by calendar year for Project S1
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Haul Truck On-Road	Estimates emissions from haul trucks hauling fill and excavation materials to the job site.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the Metropolitan St. Louis Interstate Air Quality Control Region Tier report for 2008, to be used to compare Project S1 to regional emissions.

Air Quality Emissions for Project S1

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Combustion	-	-	-	-	-	-	-
Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	0.004	0.003	0.013	0.000	0.005	0.001	1.109
Commuter	0.050	0.049	0.446	0.001	0.005	0.003	59.167
TOTAL	0.054	0.053	0.459	0.001	0.010	0.004	60.275

Note: Total PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO₂ emissions converted to metric tons = **54.670 metric tons**
 State of Illinois's CO₂ emissions = **226,000,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of Illinois's CO₂ emissions = **0.00002%**
 United States' CO₂ emissions = **5,425,600,000 metric tons (U.S. DOE/EIA 2011)**
 Percent of USA's CO₂ emissions = **0.000001%**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide)*. Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 27 March 2012.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project S1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Eastern Washington-Northern Idaho Intrastate Air Quality Control Region

Year	Point and Area Sources Combined				
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
2008	36,373	38,050	258,845	4,912	70,573

Source: USEPA National Emissions Inventory (NEI) (<http://neibrowser.epa.gov/eis-public-web/home.html>). Site visited on 27 March 2012.

Air Emissions from Project S1

Point and Area Sources Combined				
NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM _{2.5} (tpy)
36,373	38,050	258,845	4,912	70,573
0.054	0.053	0.459	0.0009	0.010
0.0001%	0.0001%	0.0002%	0.000014%	0.00004%

Regional Emissions
 Emissions
 % of Regional