FAIRCHILD AIR FORCE BASE INSTALLATION DEVELOPMENT ENVIRONMENTAL ASSESSMENT

Spokane County, Washington

Department of the Air Force

September 2025

This Draft Environmental Assessment (EA) has been provided for public comment in accordance with the National Environmental Policy Act (NEPA) which provides an opportunity for public input on United States Department of the Air Force (DAF) decision-making, allows the public to offer input on alternative ways for DAF to accomplish what it is proposing, and solicits comments on DAF's analysis of environmental effects.

Public input allows DAF to make better-informed decisions. Letters or other written or verbal comments provided may be published in this EA. Providing personal information is voluntary. Private addresses will be compiled to develop a stakeholder inventory. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, telephone numbers, and email addresses will not be published in this EA.

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ACRONYMS AND ABBREVIATIONS

ACAM	Air Conformity Applicability Model
ACM	Asbestos-containing material
AFMAN	Air Force Manual
AFB	Air Force Base
AFFF	Aqueous film forming foams
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AGE	Aircraft Ground Equipment
AMU	Aircraft Maintenance Unit
ALSF	Approach Lighting System with Sequenced Flashing Lights
APE	Area of Potential Effect
APZ	Accident Potential Zones
AQCR	Air Quality Control Region
ARS	Air Refueling Squadrons
AST	Aboveground storage tank
B	Building
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BMP	Best Management Practice
C&D	Construction and Demolition
CAA	Clean Air Act
CAIS	Chemical Agent Identification Sets
CARA	Critical Aquifer Recharge Area
CDC	Child Development Center
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CPP	Comprehensive Planning Process
CWA	Clean Water Act
CY	Calendar Year

CZ	Clear Zone
DAF	Department of the Air Force
dB	decibels
dBA	A-weighted decibels
DNF	Day-night Sound Level
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESQD	Explosive safety quantity-distance
FONSI	Finding of No Significant Impact
FY	Fiscal Year
GCR	General Conformity Rule
GHG	greenhouse gas
GIS	Geographic information systems
gpd	gallons per day
HAZWOPER	Hazardous Waste, Operations, and Emergency Response
HQ AMC	Headquarters Air Mobility Command
INRMP	Integrated Natural Resources Management Plan
kV	kilovolt
LBP	Lead-based paint
L_{eq}	equivalent noise level
LID	Low Impact Development
LRS	Logistics Readiness Squadron
LUC	Land use control
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MSA	Munition Storage Area
MSGP	Multi-Sector General Permit
mtpy	metric tons per year
MW	megawatt
MWD	Military Working Dog

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NH_3	ammonia
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PCB	Polychlorinated biphenyl
pCi/L	Picocuries per liter
PCN	Pavement Classification Number
PFOA	Perfluroroocatanoic acid
PFOS	Perfluroroocatanesulfonic acid
$PM_{2.5}$	Particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	Particulate matter less than or equal to 10 microns in diameter
PPE	Personal protective equipment
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SCAPACA	Spokane Regional Clean Air Agency
SDWA	Safe Drinking Water Act
SERE	Survival, Evasion, Resistance, and Escape
SF	Square Feet
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Properties
tpy	tons per year
$\mu g/m^3$	micrograms per cubic meter
UFC	United Facilities Criteria
UIC	Underground Injection Control
U.S.	United States
USAF	United States Air Force

USC	United States Code
USCB	United States Census Bureau
USDW	Underground Source of Drinking Water
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UXO	Unexploded ordinance
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area
WSDOE	Washington State Department of Ecology

1 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The Department of the Air Force (DAF) and the 92nd Air Refueling Wing at Fairchild Air Force Base (AFB) are proposing to implement the following ten installation development projects over the next five years (fiscal year [FY] 2026–FY 2030):

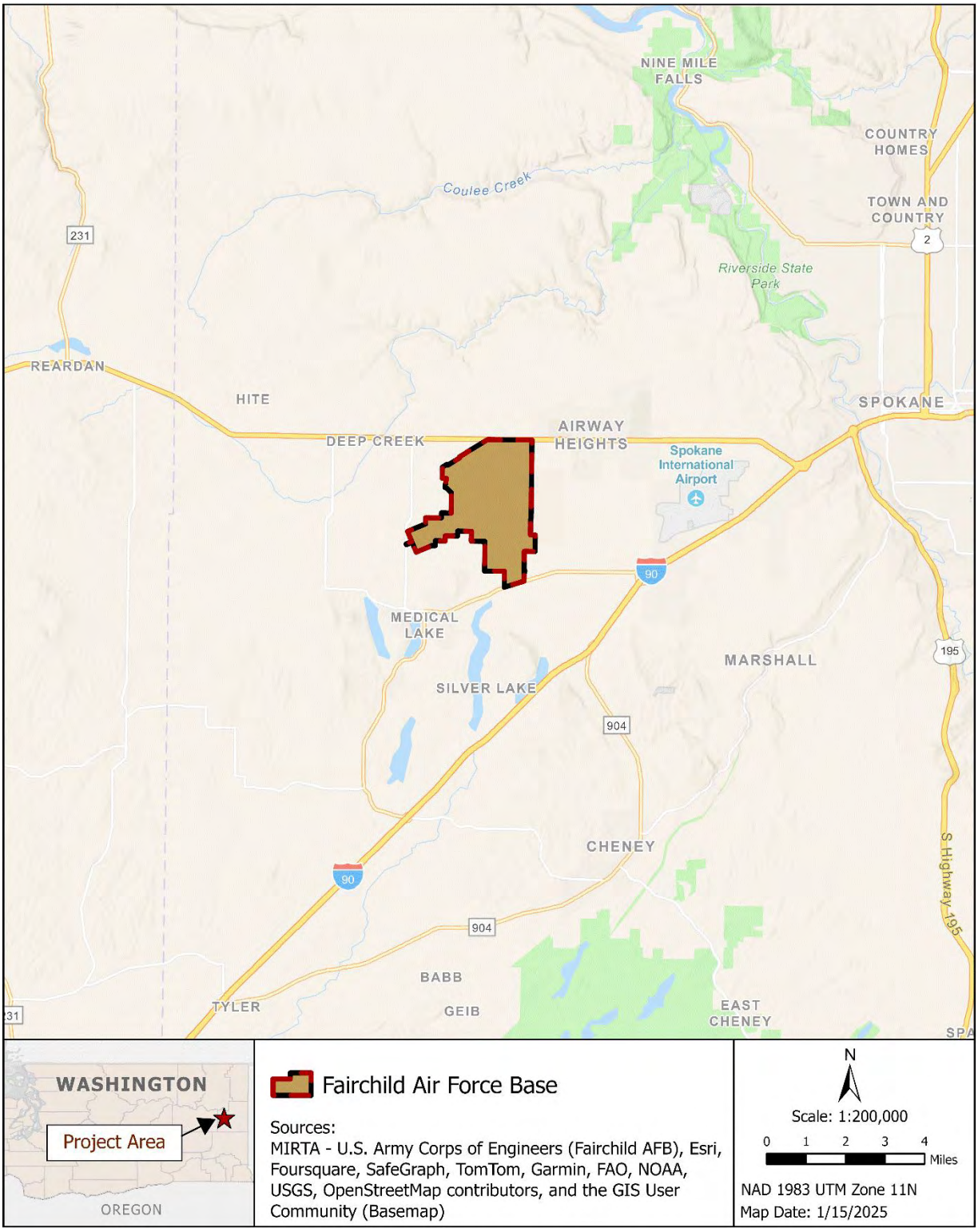
1. Construct Bulk Fuel Storage Tank #3 (Project No. DESC2702).
2. Repair Approach Lighting Electrical Vaults (Project No. GJKZ231001).
3. Renovate/Relocate Logistics Readiness Squadron (LRS) from Building (B) 2090 to B1003 (Project No. GJKZ221011).
4. Construct a Government Parking Yard (Project No. GJKZ251005).
5. Renovate/Relocate Aircraft Ground Equipment (AGE) Maintenance from B2050 to B1013 (Project No. GJKZ251001).
6. Construct an All-Weather Military Working Dog (MWD) Training Area (Project No. GJKZ241009).
7. Replace Child Development Center (CDC) (Project No. GJKZ223003).
8. Construct Taxi Lane Pull-Throughs and Six Parking Spots (Project No. GJKZ253001).
9. Demolition of B2060.
10. Demolition of B2120.

Fairchild AFB is in east-central Washington State in Spokane County (**Figure 1.1-1**). It is approximately 12 miles west of the City of Spokane and occupies approximately 4,551 acres of land. Fairchild AFB was established in 1942 as the Spokane Army Air Depot and has hosted a variety of missions and aircraft types throughout its history. It currently supports United States Air Force (USAF) missions, including USAF Survival, Evasion, Resistance, and Escape School; Washington Air National Guard 141st Air Refueling Wing; Armed Forces Reserve Center; the Joint Personnel Recovery Agency; medical detachments; and others.

This Environmental Assessment (EA) was prepared to evaluate the potential environmental impacts of the above-listed projects in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [U.S.C.] §§ 4321 - 4347, as amended).

The information presented herein will serve as the basis for deciding whether the installation development projects would result in significant impacts, thereby requiring the preparation of an Environmental Impact Statement. If no significant impacts are identified, a Finding of No Significant Impacts (FONSI) would be prepared.

Figure 1.1-1. Fairchild AFB Location Map



1.2 BACKGROUND

Installation development at Fairchild AFB is completed in accordance with Air Force Instruction (AFI) 32-1015, *Integrated Installation Planning*. Integrated Installation Planning establishes a systematic framework for informing decision-making on the physical development of Air Force installations and their environment. The objective of the planning process is to synthesize data and information to enable commanders to make effective development decisions affecting their installation and the surrounding community. As a part of the CPP, installations are divided into identifiable planning districts based on geographical features, land use patterns, building types, and/or transportation networks. Within these planning districts the Base Community Planner identifies shortfalls in the existing capability, capacity, or relationship of installation resources with respect to their contribution to successful accomplishment of installation missions.

The ten projects listed in **Section 1.1** of this document were identified via the Integrated Installation Planning process.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

The Purpose of implementing the ten installation improvement projects (Proposed Action) is to provide infrastructure and functionality improvements required to support the missions of the 92 Air Refueling Wing and Fairchild AFB mission partners.

The Need for the Proposed Action is to address deficiencies of function and capability in the facilities and infrastructure at Fairchild AFB that result from obsolescence, deterioration, and evolving mission needs. These deficiencies are remedied through an ongoing process of construction of new facilities and infrastructure, renovation of existing facilities, and demolition of redundant or obsolete facilities. Left unchecked, these deficiencies degrade the ability of the installation to meet USAF and Department of Defense (DoD) current and future mission requirements relative to state and federal requirements.

The Purpose and Need for each project included in the Proposed Action is summarized in **Table 1.3-1.**

Table 1.3-1. Purpose and Need of Each Project Included in the Proposed Action

PURPOSE	NEED
1. Construct Bulk Fuel Storage Tank #3 (DESC2702)	
Install a new 20,000 barrel (840,000 gallon) above-ground jet fuel storage tank in the same footprint as the original tank #3, which was removed in 2008.	In the past seven years, 19 KC-135 aircrafts have been added to the Fairchild AFB fleet. As a result, the number of tankers increased from 48 to 67, thereby increasing fuel consumption by approximately 27 percent (Potter 2024). If Fairchild AFB does not increase its fuel storage capacity, planned air operations and the use of KC-135 tankers to support deterrence and defeat of enemy threats would be restricted (Potter 2024)

PURPOSE	NEED
2. Repair Approach Lighting Electrical Vaults (GJKZ231001)	
Full rehabilitation of the airfield approach lighting system excluding flood lighting but including installation of a storm drainage system to ensure a 20-year lifecycle.	Each spring the vaults fill with water and cause damage to the internal electrical components, which requires approximately two weeks or 160 manhours (approximately $13,000) to de-water. The approach lighting vaults are a critical asset for the Airfield and the Refueling Mission of the Installation. However, the wires are not rated for continuous underwater usage and failure of the current system is imminent (Potter 2024).
3. Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003 (GJKZ221011)	
Fully renovate/remodel B1003 to create a new LRS warehouse and free up B2090 for additional Aircraft Maintenance Unit (AMU) space.	In 2017 the Sight Activation Task Force identified a 60,000 square foot (SF) deficiency in LRS storage space. Additionally, there is an operational requirement to collocate AMUs with Air Refueling Squadrons (ARSs).
4. Add Government Parking Yard, B2115 (GJKZ251005)	
Provide additional vehicle parking and handling capabilities for better throughput and equipment protection and security.	To provide a more adaptive and resilient operation and provide better combat readiness. It would enhance both the capacity and the capability of the current mission by providing the space needed to handle all vehicle needs in a secure manner.
5. Renovate/Relocate AGE Maintenance from B2050 to B1013 (GJKZ251001)	
Renovate/remodel B1013 to provide a larger space that would accommodate the increased AGE and Wash Rack requirements.	The AGE mission is increasing due to the 19 additional KC-135 aircrafts added to the Fairchild AFB fleet. With an increase in associated personnel and aircraft, there is a need for more space that would better allow them to perform their mission.
6. Construct All Weather MWD Training Area (GJKZ241009)	
Construct an all-season, MWD training area that is available 24 hours a day, seven days a week.	Enhance the capabilities of the Security Forces personnel by allowing them to train with the MWD's any time of day, any time of year, and during any type of weather.
7. Replace CDC B2500 (GJKZ223003)	
Bring the CDC into compliance with current United Facilities Criteria (UFC) 4-740-14 and the 01 10 10 Design Requirements for CDCs.	Construction of a new facility would allow the existing facility to be used while the new facility is constructed.
8. Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55 (GJKZ253001)	
Construct taxi lane pull-throughs and six parking spots	The current parking facilities cause unnecessary burdens and strains on people, aircraft, ground equipment and time. Each aircraft requires a tow/push to park, which increases mission and response times and causes additional wear and tear on the aircraft. In 2017 the Sight Activation Task Force determined that maximizing the quantity of taxi lane pull-through parking spots is necessary for the long-term sustainment of a total 48 tankers.
9. Demolition of B2060	
Demolish building.	Buildings need repairs exceeding value of facility and needs to be demolished so the AF does not need to maintain it.

PURPOSE	NEED
10. Demolition of B2120	
Demolish building.	Buildings need repairs exceeding value of facility and needs to be demolished so the AF does not need to maintain it.

1.4 SCOPE OF ENVIRONMENTAL ANALYSIS

This EA analyzes the potential environmental consequences of implementing the ten (10) installation development projects over the next five years (fiscal year [FY] 2026–FY 2030). To effectively manage the complexity and volume of installation development projects needed on Fairchild AFB, the DAF may use this EA as a baseline environmental analysis for future projects that are similar in scope to those analyzed in this EA. However, any additional project or future activity proposed on areas associated with the installation would be evaluated on their own merit under the DAF EIAP guidelines to determine their environmental impacts and appropriate level of NEPA analysis required.

1.5 INTERAGENCY/INTERGOVERNMENTAL COORDINATION & CONSULTATIONS

1.5.1 Interagency Coordination and Consultations

Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416 with the same title, requires federal agencies to provide opportunities for consultation with officials of state and local governments that could be affected by a federal proposal. Per the requirements of the Intergovernmental Cooperation Act of 1968 (42 USC Section 4231(a)) and EO 12372, Fairchild AFB notified relevant federal, state, and local agencies of the proposed action through the interagency and intergovernmental coordination process and provided them with sufficient time to make known their environmental concerns. The process also provided Fairchild AFB with the opportunity to cooperate with and consider state and local views in implementing the federal proposal.

1.5.2 Government-to-Government Consultations

The National Historic Preservation Act (NHPA) (36 CFR Part 800) directs federal agencies to consult with federally recognized Native American tribes when a Proposed Action has the potential to affect tribal lands or properties of religious and cultural significance. Consistent with the NHPA, Department of Defense Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, and DAF I 90-2002, *Interactions with Federally Recognized Tribes*, federally recognized Tribes that are historically affiliated with the Fairchild AFB geographic region have been invited to consult on all proposed undertakings that have potential to affect properties of cultural, historical, or religious significance to the Tribes. The Tribal consultation process is distinct from NEPA consultation or the interagency coordination process, and it requires separate notification to all relevant Tribes.

1.5.3 Other Agency Consultations

Per the requirements of Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations (36 CFR Part 800), Section 7 of the Endangered Species Act (ESA) and implementing regulations, findings of effect and request for concurrence will be transmitted to the Washington State Historic Preservation Officer (SHPO) and the U.S. Fish and Wildlife Service (USFWS). Consultation will occur on a per project basis at a time when the project design has advanced to a stage to adequately account for potential effects. For projects that involve potential effects to the installation's National Register of Historic Places (NRHP), eligible historic properties consultation with the SHPO will occur when the project is at the 25 to 33 percent design stage.

1.6 PUBLIC AND AGENCY REVIEW OF EA

A Notice of Availability (NOA) of the Draft EA and Draft FONSI was published in the Spokesman-Review, announcing the availability of the EA for review on September 14, 2025. The NOA invited the public to review and comment on the Draft EA. The public and agency review period ends on October 14, 2025. A copy of the NOA can be found in Appendix A.

Copies of the Draft EA and FONSI were made available for review on the Fairchild AFB website.

1.7 DECISION TO BE MADE

The EA evaluates whether the Proposed Action would result in significant impacts on the human environment. If significant impacts are identified, Fairchild AFB would undertake mitigation to reduce impacts to below the level of significance, prepare an EIS addressing the Proposed Action, or abandon the projects included in the Proposed Action.

This EA is a planning and decision-making tool that will be used to guide Fairchild AFB in implementing the Proposed Action in a manner consistent with Air Force standards for environmental stewardship.

2 PROPOSED ACTION AND ALTERNATIVES

The sections below describe the two alternatives carried forward into analysis: the Proposed Action Alternative and the No Action Alternative.

2.1 PROPOSED ACTION ALTERNATIVE

The Proposed Action consists of the ten individual projects discussed below. The location of each project within the Fairchild AFB can be found in **Figure 2-1.**

1. **Construct Bulk Fuel Storage Tank #3 (Project No. DESC2702)**

This project would construct a 20,000-barrel F-24 bulk fuel storage tank in a location that previously housed a bulk fuel storage tank. The new tank would tie into the existing bulk fueling facility (**Exhibit 2-1**). The existing rock surface would be removed and replaced with a ground liner, a concrete slab, and the storage tank. Additionally, above ground and below ground piping would be installed within the project footprint to transport fuel between tank #3 and the existing tanks.

Exhibit 2-1. Bulk Fuel Storage Tank #3

2. **Repair Approach Lighting Electrical Vaults (Project No. GJKZ231001)**

A full rehabilitation of the airfield approach lighting system would occur to ensure all vaults are watertight (**Exhibit 2-2**). When possible, the vaults would be repaired from within the existing structure by fixing cracks and sealing all leaks. If required, individual vaults would be dug up and replaced with new vaults. Trenches may be dug around individual vaults to coat existing conduit. Additionally, a slurry wall may be created to keep groundwater away from individual vaults.

Exhibit 2-2. Subset of Approach Lighting Electrical Vaults

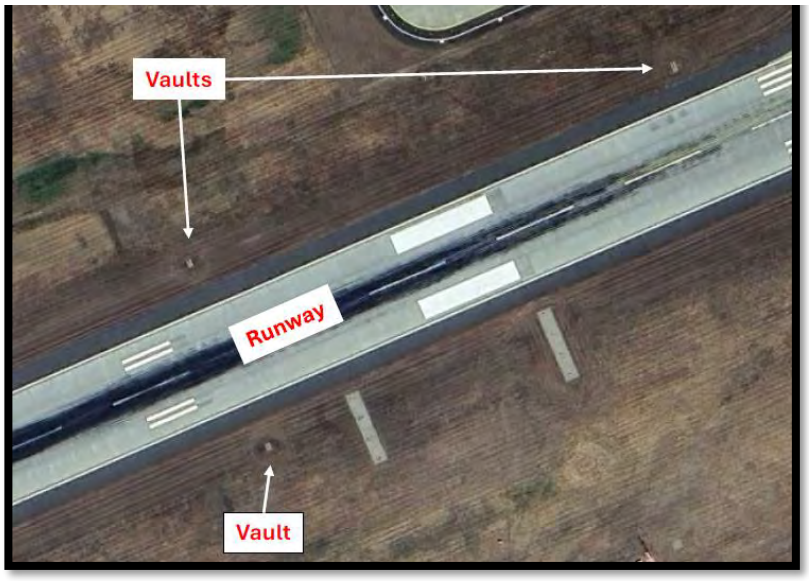
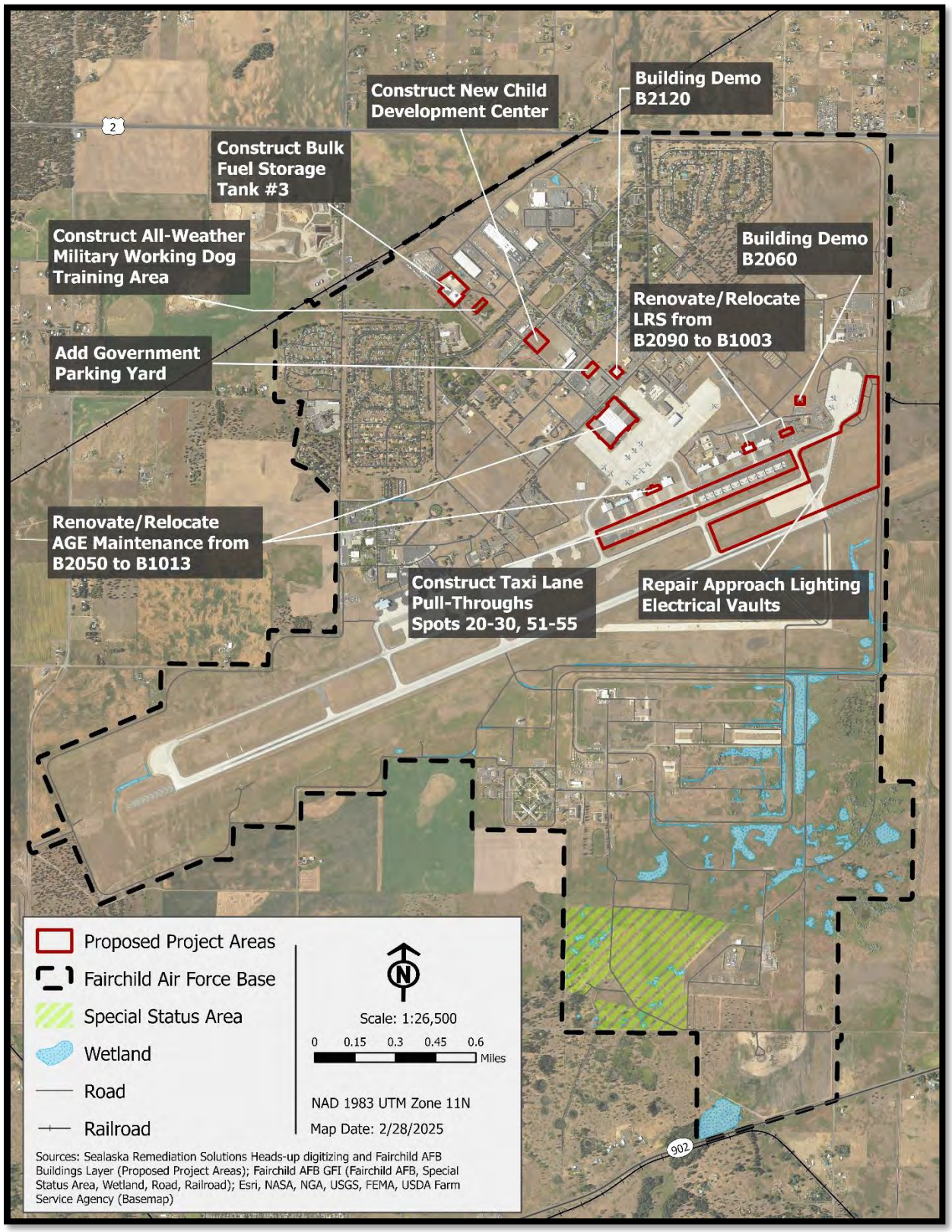


Figure 2.1-1. Proposed Action, Individual Project Locations



3. Renovate/Relocate LRS from B2090 to B1003 (Project No. GJKZ221011)

This project would fully renovate/remodel B1003 to provide additional LRS warehouse space (**Exhibit 2-3**). Once LRS moves out of B2090, B2090 would be used as additional AMU space for the MX group. The existing parking lot of both buildings would be milled and overlayed with asphalt. Additionally, water, sewer, and electrical utilities would be replaced.

Exhibit 2-3. B1003 and B2090

4. Construct Government Parking Yard (Project No. GJKZ251005)

A new parking yard would be constructed between two existing parking lots on Doolittle Avenue (**Exhibit 2-4**). The additional vehicle parking/handling capabilities would improve throughput and equipment protection/security. The approximately one-acre area would be graded and paved with asphalt.

5. Renovate/Relocate AGE Maintenance from B2050 to B1013 (Project No. GJKZ251001)

B1013 would be fully renovated/remodeled to create a space that accommodates increased AGE Maintenance requirements. The existing pavement for the building would be milled and overlayed with asphalt. Additionally, water, sewer, and electrical utilities would be replaced. **Exhibit 2-4** shows the location of both buildings.

Exhibit 2-4. B2050 and B1013

Exhibit 2-5. Proposed Parking Yard

6. Construct an All-Weather MWD Training Area (Project No. GJKZ241009)

A new building would be constructed in the grass yard currently used for MWD training (**Exhibit 2-6**). The facility would be used as an all-season MWD training area that is available for use 24 hours per day, 7 days per week. Water, sewer, and electrical utilities would be replaced.

Exhibit 2-6. MWD Training Area

7. Replace CDC (Project No. GJKZ223003)

This project would construct a new CDC facility that complies with current UFC 4-740-14 and the 01-10-10 Design Requirements for Child Development Centers. It would be constructed on the eastern quadrant of the Foulois Avenue and West Castle Street intersection (**Exhibit 2-7**). Construction of the new building would allow the existing facility to remain operational during construction of the new one.

Exhibit 2-7. New CDC Location

The facility would include a sports field for use by CDC and planned youth sports activities. A pull-through driveway would be constructed for drop-off and pick-up times. Additionally, water, sewer, and electrical utilities would be replaced.

8. Construct Taxi Lane Pull-Throughs and Six Parking Spots (Project No. GJKZ253001)

Taxi lane expansions would be constructed behind spots 20 through 30 and 51 through 55 to allow aircraft to pull into sixteen parking spots from the taxi lane (**Exhibit 2-8**). The unpaved areas between the parking spaces and the taxi lane would be graded and paved with reinforced concrete pavement. Trenching would occur during the installation of overhead lighting.

Exhibit 2-8. Taxi Lane Expansion and Parking Spots

9. Demolition of B2060

B2060 would be demolished. The building materials and utilities would be hauled off-site. Utilities would be cut back to the main line and asbestos-containing materials (ACMs) would be handled and disposed of in accordance with federal, state, and local standards. The parking lots would remain in place and not be demolished.

10. Demolition of B2120

Similar to the above project, B2060 would be demolished. The building materials and utilities would be hauled off-site. Utilities would be cut back to the main line and ACMs would be handled and disposed of in accordance with federal, state, and local standards. The parking lots would remain in place and not be demolished.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the ten projects would not be implemented. The 20,000-barrel F-24 bulk fuel tank would not be constructed and Fairchild AFB would not increase its fuel storage capacity. As a result, planned air operations and the use of KC-135 tankers, which are used to support deterrence and if necessary defeat enemy threats, would be restricted.

The approach-lighting electrical vaults would continue to flood each spring and cause damage to the internal electrical components. There would be a continued expense for dewatering each

spring and eventually the current lighting system would fail and affect the Airfield and the Refueling Mission of the Installation.

B1003 and B1013 would not be renovated. As a result, the LRS would continue to experience a 60,000 SF deficiency in storage space, the AMU would not be collocated with ARSs, and the AGE Maintenance mission would continue to be hindered by lack of space.

The additional parking yard and all-weather MWD training area would not be constructed. Therefore, improvements to combat readiness and enhancements to Security Forces would not occur. The new CDC facility would not be constructed and the existing facility, which does not comply with UFC 4-740-14 and the 01 10 10 Design Requirements, would continue to be used.

In addition, the taxi lane expansions would not be constructed behind spots 20 through 30 and 51 through 55. There would be enough parking spaces for normal operations; however, there would continue to be unnecessary strains on personnel in current pavement configuration. Additionally, B2060 and B2120 would not be demolished and would need to be maintained by the AF.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment and potential environmental consequences of implementing the Proposed Action and No Action Alternatives.

The Region of Influence (ROI) for the Proposed Action is Fairchild AFB, unless otherwise specified for a particular resource area that would have a different ROI. For most resources included in this section, much of the information on the affected environment was obtained from a recent EA completed for the installation (Fairchild AFB 2020a) or the 2024 *Integrated Natural Resources Management Plan* (INRMP; Fairchild AFB 2024a), with pertinent updated information as needed and available.

The ten projects included in the Proposed Action are discussed collectively, with additional discussion, where needed, to describe potential impacts for pertinent individual projects.

3.1 IMPACT ANALYSIS APPROACH

To determine the significance of a potential impact, the context and intensity of the impact were considered. The context of an impact is related to the geographic, biophysical, and social context in which the effect occurs. The intensity of an impact refers to the severity of the impact in whatever context it occurs. It includes the consideration of beneficial, adverse, short-term, and permanent impacts and the level of controversy associated with the impact. Intensity also considers whether the action threatens to violate federal, state, or local law requirements enacted for the protection of the environment. In the subsections below, the following terms have been used to characterize the severity of an impact:

- **None** – No impact to the resource.
- **Negligible** – No measurable impact. A negligible impact may locally alter the resource but would not measurably change its function or character.
- **Less than Significant** – Short-term but measurable impact that is slight to noticeable. Impact would not exceed limits of local, state, or federal regulations.
- **Significant but Mitigable** – Significant impacts that can be reduced to a less than significant level by incorporating proposed mitigation measures.
- **Significant** – An impact that exceeds limits of local, state, or federal regulations or would untenably alter the function or character of the resource.
- **Beneficial** – Impacts having a beneficial effect on the resource.

This chapter describes the current conditions of the environmental resources, either human-made or natural, that would be affected by implementing the Proposed Action or No Action Alternative.

Based on the scope of the Proposed Action, issues with minimal or no impacts were identified through a preliminary screening process. The following three resource areas were not carried forward into analysis:

1. **Airspace** - There would be no interactions between airspace and the proposed projects. None of the proposed projects involve changes to, or use of, airspace. Therefore, there would be no impacts to airspace, and this resource area is not carried forward for detailed analysis.

2. **Earth Resources –** The proposed projects would not result in an geological ground disturbance.

3. **Socioeconomics** - The Proposed Action would have no appreciable effects on the regional socioeconomic environment. The Spokane–Spokane Valley Metropolitan Statistical Area as of 2023 had a population of more than 600,000; a civilian labor force of 277,273 with 265,710 employed; a total personal income of $34.7 billion; and a Gross Domestic Product of $31.9 billion (USBEA 2024a, USBEA 2024b, BLS 2025). Fairchild AFB had, as of 2020, an economic impact on the region of $523.6 million, including $251.8 million in military pay, $71.7 million in civilian pay, $66.5 million in local contract expenditures, and employed almost 12,000 personnel (military and civilian) (Fairchild AFB 2020b). Given the size of the regional economy and the contribution of Fairchild AFB to the region, the proposed installation development projects would have short-term, negligible, beneficial socioeconomic effects associated with employment of construction personnel and purchases of construction equipment, materials, and supplies spread out over the 5-year construction period. The Proposed Action would not result in a long-term, permanent increase or decrease in employment or population, as the action does not include changes in the number of military or civilian base personnel. It also would not result in a change in demand for housing or public services such as fire protection, law enforcement, medical care, or a change in public school enrollment. Socioeconomics, therefore, was not carried forward for detailed analysis in this EA.

3.2 AIR QUALTIY

3.2.1 Definition of the Resource

Air quality refers to the condition of the atmosphere as it relates to the presence and concentration of pollutants that may affect human health, the environment, and overall air clarity. Air pollution is the presence of one or more contaminants (e.g., dust, fumes, gas, mist, odor, smoke, or vapor) in the outdoor atmosphere in quantities and duration that could harm human, plant, or animal life or unreasonably interfere with the enjoyment of life and property.

Potential impacts on air quality are identified by assessing emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases (GHGs). The assessment identifies whether implementation of the Proposed Action would comply with the Clean Air Act (CAA) and regional air quality standards or contribute to air quality degradation or improvement.

The air quality ROI for Fairchild AFB includes Spokane Stevens, Pend Oreille, and Lincoln counties within the Eastern Washington Air Quality Control Region (AQCR) (U.S. Environmental Protection Agency [USEPA] AQCR 062).

Effects on air quality would be considered significant if the Proposed Action generated emissions that did not meet CAA conformity determination requirements or contributed to a violation of any federal, state, or local air regulation.

3.2.2 Existing Conditions

3.2.2.1 National Ambient Air Quality Standards and Attainment Status

The USEPA Region 10 and the Spokane Regional Clean Air Agency (SRCAA) regulate air quality on Fairchild AFB. The CAA assigns USEPA the responsibility of establishing primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50), which specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than or equal to 10 microns in diameter [PM_{10}] and particulate matter less than or equal to 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead (Pb) (see **Table 3.2-1**). Short-term NAAQS (over 1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. While each state has the authority to adopt standards stricter than those established under the federal program, the State of Washington has accepted the federal standards (**Table 3.2-1**) (WSDOE 2025a).

Table 3.2-1. National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
CO		Primary	8 hours	9 ppm	Not to be exceeded more than once a year
			1 hour	35 ppm	
NO_2		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and secondary	Annual	53 ppb	Annual mean
O_3		Primary and secondary	8 hours	0.070 ppm	Annual fourth highest daily maximum 8-hour concentration, averaged over 3 years
Particulate matter	$PM_{2.5}$	Primary	Annual	9 µg/m^3	Annual mean, averaged over 3 years
		Secondary	Annual	15 µg/m^3	Annual mean, averaged over 3 years
		Primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Pb		Primary and secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
SO_2		Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

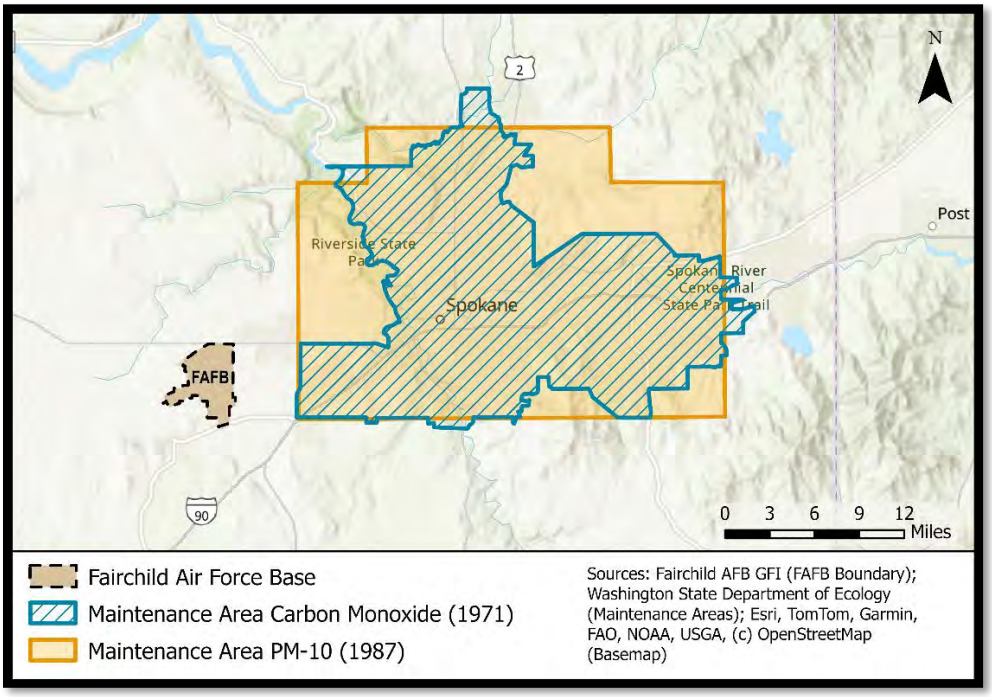
Sources: 40 CFR Part 50; WSDOE 2025a.
Notes: µg/m^3 = micrograms per cubic meter; ppb = parts per billion; ppm = parts per million.

3.2.2.2 Existing Emissions and Permitting

Federal regulations classify AQCRs based on their compliance with the NAAQS. Areas that do not meet the NAAQS for one or more criteria pollutants are designated as “nonattainment areas,” and those that meet or fall below the standards are designated as “attainment areas.” Additionally, some areas previously in nonattainment but now meeting NAAQS are designated as “maintenance areas.” The USEPA has designated portions of Spokane County as maintenance areas for CO and PM_{10} (USEPA 2025). The Spokane County CO Maintenance Area, which includes the cities of Spokane, Spokane Valley and Millwood and their surrounding unincorporated areas (see **Figure 3.2-1**), has been in compliance with the 8-hour CO NAAQS since 1997. The Spokane County PM_{10} Maintenance Area is larger than the CO Maintenance Area but also includes the cities of Spokane, Spokane Valley and Millwood and their surrounding unincorporated areas (**Figure 3.2-1**). It currently meets the federal standard for PM_{10}.

The USEPA sets standards for particulate pollution because smaller particles such as soot, dust and unburned fuel can penetrate deeply into the lungs and cause health problems. The current 24-hour federal health standard for PM_{10}, set in 1987, is 150 micrograms per cubic meter of air ($\mu g/m^3$). Fairchild AFB is located outside the boundaries of these maintenance areas. Because the area surrounding the base is in attainment for all criteria pollutants, the General Conformity Rule (GCR) does not apply. The GCR is intended to ensure that federal actions in nonattainment or maintenance areas do not cause new violations of the CAA, contribute to existing violations, or interfere with efforts to attain or maintain compliance.

Figure 3.2-1. Spokane County Maintenance Map



Fairchild AFB operates under a synthetic minor air permit issued by Spokane Regional Clean Air Agency (SCAPACA) pursuant to SCAPCA Regulation I, Article IV. Primary sources of air emissions include boilers, generators, and paint booths. The permit requirements include annual periodic inventory of all significant stationary sources of air emissions for each of the criteria pollutants of concern as well as monitoring and recordkeeping. **Table 3.2-2** lists annual emissions from significant stationary sources on the base.

Table 3.2-2 Fairchild AFB Annual Emissions for Significant Stationary Sources as of 2024

Pollutant	Emissions (tpy)
CO	10.96
NO_2	14.52
VOCs	5.54
PM_{10}	2.02
SO_2	0.18

Source: APIMS 202xx.
Notes: tpy = tons per year; VOCs = volatile organic compounds.

New stationary sources of air emissions, such as boilers or backup generators, would require permits to construct. If not subject to major source requirements, new sources of air emissions are required to be evaluated against state regulations and applicability to those standards.

3.2.3 Environmental Consequences

The DAF estimated through the Air Conformity Applicability Model (ACAM) the total reasonably foreseeable net direct and indirect emissions associated with the action on a calendar year (CY) basis, beginning with the start of the action and continuing until “steady-state” emissions (no net gain or loss occurs) are reached, and the action is fully implemented. ACAM is a robust computer model developed and used primarily by DAF planners in analyzing environmental impacts. The ACAM model accommodates all these activities, provides a consistent method for evaluating potential emissions, and meets the requirements of the Council on Environmental Quality (CEQ) interim guidance on analyzing GHG effects of agencies’ proposed actions under NEPA (88 Federal Register [FR] 1196).

3.2.3.1 Proposed Action Alternative

Short- and long-term, less-than-significant adverse effects on air quality would be expected from implementing the Proposed Action. Short-term effects would be caused by air emissions generated during construction, and long-term effects would be caused by operational emissions from implementing the 10 proposed projects and supporting infrastructure. The Proposed Action would not generate emissions that would exceed the GCR insignificant threshold values or contribute to a violation of any federal, state, or local air regulation.

Criteria pollutants are expected to remain below *de minimis* levels and meet permitted limits when combined with existing facility-wide emissions. None of the estimated annual net

emissions from these actions would exceed insignificance indicators; therefore, the action would not cause or contribute to a conformity exceedance.

Construction. The ACAM was used to calculate emissions from constructing and demolishing facilities, grading land, and construction-related transportation, including construction workers commuting. These air emissions were compared to the GCR's de minimis threshold values to assess potential effects on air quality. Each project was analyzed for conformity as required by Air Force Manual (AFMAN) 32-7002, Environmental Compliance and Pollution Prevention; the EIAP (32 CFR Part 989); the GCR (40 CFR 93 Subpart B); and the DAF Air Quality EIAP Guide October 2024 (AFCEC 2024a; AFCEC 2024b; AFCEC 2024c). ACAM standardizes and simplifies emissions calculations based on the proposed activities incorporating default assumptions for emissions from construction equipment and personnel. ACAM offers summary and detailed outputs that include the assumptions and equations used to calculate emissions. This section provides a summary of the ACAM analysis and Appendix B provides the conformity analysis.

Construction emissions were estimated for fugitive dust, on- and off-road diesel equipment and vehicles, worker trips, architectural coatings, and paving off-gases. Criteria air pollutant emissions for the projects implemented under the aggregated proposed projects were estimated for the activities quantified in **Table 3-2.3**.

The DAF included in the ACAM assumptions site grading for each construction site related to the Proposed Action to account for air emissions from Construction and Demolition (C&D) activities. According to USEPA, C&D debris is not considered municipal solid waste. It typically includes materials such as steel, wood products, drywall and plaster, brick and clay tile, asphalt shingles, concrete, and asphalt concrete.

The ACAM model was simulated for two scenarios; (1) assuming all projects would happen in a single year for cumulative emission rate and (2) assuming 25 percent of the total annual activity spread over 4 years, as shown in **Table 3-2.3**. Emissions were estimated for demolition and site clearing and grading of 28 acres total with roughly 77,843 cubic yards of C&D debris estimated to be hauled off-site. ACAM default parameters were assumed except for construction hauling trips, personnel and construction commute distances, and construction vendor trips. Construction hauling and worker commutes were assumed to average 40 miles round trip (20 miles one way). The assumption was based on the average commute times by U.S. Census Bureau (USCB) of one-way travel times for Washington (USCB 2023).

Table 3.2-3. ACAM Inputs (rounded) for Action Alternative, Option A (Preferred)

Activity over 5 Years	ACAM Input of Total	Anticipated Yearly Total
Construction		
Facility construction	1,488,259.00	372,064.75
Demolition	78,743.00	19,685.75
Utility trenching	145,180.00	36,295.00
Site grading	1,212,163.00	303,040.75
New paving	15,000.00	3,750.00
Operations		
135-HP emergency generator	3	3
2,000-gallon AST	3	3
840,000-gallon AST	1	1
Heating	4 buildings	4 buildings

Notes: AST = aboveground storage tank; HP = horsepower.
[a] Total square foot unless otherwise noted.

Table 3.2.4 presents the estimated air pollutant emissions from demolition, construction, and associated utility/ infrastructure activities. **Table 3-2.4** also includes the least restrictive insignificance thresholds for criteria pollutants to determine the level of effects of these emissions sources. The total emissions would remain below *de minimis* levels and under the significance thresholds for each of the criteria pollutants. Therefore, effects on air quality during construction would be short-term and less-than-significant.

Table 3.2-4. ACAM-Estimated Emissions from the Proposed Action (tpy)[a, b]

Pollutant	Insignificance Indicator	Total Emissions for Construction	Annual Construction Emissions	Annual Operational Emissions
VOC	250	12.92	3.25	0.42
NO_x	250	16.19	4.05	1.29
CO	250	14.25	3.56	0.41
SO_x	250	0.03	0.01	0.02
PM_{10}	250	216.23	54.06	0.05
$PM_{2.5}$	250	0.53	0.13	0.05
Pb	25	0.00	0.00	0.00
NH3	250	0.22	0.06	0.00

Notes: NH_3 = ammonia.
[a]The operations emissions assume additional sources of emissions from heating, fueling and maintenance of emergency generators.
[b] Criteria pollutants are reported in tpy unless otherwise noted.

Reasonable precautions would be taken to prevent airborne dust, including the use of water to control dust from building construction, demolition, road grading, and land clearing. Cleared or graded areas should be seeded or vegetated promptly to minimize fugitive dust. Given the sustained potential for emissions over consecutive years of construction, the DAF would coordinate with construction teams to ensure that these best management practices (BMPs) are effectively implemented.

Operations. The DAF's annualized steady-state operational emissions assume that 20 percent of the facilities would commence operations each year. Operational emissions encompass backup power, fuel storage, and fuel usage (see **Table 3.2.3**). Notably, ACAM's default settings for building heating are based on state and regional averages. The estimated annual net operational emissions are below the insignificance indicators (**Table 3.2.4**). Therefore, operations would not be expected to cause or contribute to any exceedance of NAAQS and would have a long-term less than significant effect on air quality.

The DAF would implement BMPs and determine the extent of land that could be graded to bare soil, over a defined period, while maintaining air quality standards for particulate matter. Before constructing or modifying a facility with internal combustion engines, operators must obtain the appropriate New Source Review permit from SPCAA.

This involves assessing potential emission increases and implementing necessary control technologies. To provide real-world context of emission effects on a county scale, an action's net change in emissions is compared to the county's. **Table 3-2.5** provides a relative comparison of an action's net change in emissions on an annual basis.

Table 3.2-5. 2020 County-Level Data for Mobile and Nonpoint Emissions (TPY) Total Relatives Significance

Total Criteria Pollutants Relative Significance (ton)								
		CO	NOX	PM10	PM2.5	SOX	VOCS	Pb
2020	County*	52,695.00	8,337	12,109.00	3,862.00	117.00	19,473.00	0.05
2026	Action	3.56	4.05	54.06	0.13	0.01	3.25	0
Percent of Spokane Annual Emissions		0.0000676	0.000486	0.004464	0.0000337	0.0000855	0.000167	0

Notes: NO_x = nitrogen oxides; SO_x = sulfur oxides.
*Source = 2020 National Emissions Inventory (NEI) county data.

GHG Emissions. GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e).

The Air Force has adopted the Prevention of Significant Deterioration threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (*de minimis*, too trivial or minor to merit consideration). Actions with a net change in CO_2e emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in CO_2e emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact.

The following table summarizes the action-related CO_2e emissions on a calendar-year basis through the projected steady state of the action. Full analysis is presented in Appendix C.

Table 3.2-6. Action-Related Annual GHG Emissions

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	CO_2	CH4	N_2O	CO_2e	Threshold	Exceedance
2026	5,440	0.16795774	0.492365	5,575	68,039	No
2027	482	0.00921733	0.00094725	484	68,039	No
2028 [SS Year]	482	0.00921733	0.00094725	484	68,039	No

Source: ACAM reports (Attachment A). Notes: mtpy = metric tons per year

3.2.3.2 No Action Alternative

Long-term, less-than-significant adverse effects on air quality would be expected under the No Action Alternative. The construction, demolition, and renovation projects would not occur. Air quality would remain unchanged compared to existing conditions and reductions of emissions from efficient energy facilities would not be realized.

3.3 BIOLOGICAL RESOURCES

3.3.1 Definition of the Resource

The term biological resources refers to living organisms (biota) and the living landscape (habitat and ecosystems). Biological resources include vegetation, fish and wildlife, fish and wildlife habitats, and special status species. Protected biological resources are those offered protection under the following federal and state regulations:

- **Endangered Species Act (ESA)** – the purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the USFWS, which has the primary responsibility for terrestrial and freshwater organisms and the National Marine Fisheries Service which has responsibility for marine organisms. Under the ESA, species may be listed as endangered, threatened, proposed, or candidate. An endangered species is in danger of extinction throughout all or a significant portion of its range. A threatened species is likely to become endangered within the foreseeable future. Proposed species are protected species that are found to warrant listing under the ESA as either endangered or threatened and have been proposed as such in the Federal Register. Candidate species are those that are petitioned for listing as endangered or threatened under the ESA but are currently not federally protected. Additionally, under the ESA, designated critical habitat are areas deemed essential to the conservation of a specific species.

- **Migratory Bird Treaty Act (MBTA)** – administered by the USFWS, the MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

- **Bald and Golden Eagle Protection Act (BGEPA)** - prohibits the take (pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb) bald or golden eagles. To "disturb" means to agitate or bother a bald or golden eagle to a degree that causes or is likely to cause: (1) injury to an eagle; (2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

- **Washington Administrative Code (WAC) Rule 220-610-110** - The Washington Department of Fish and Wildlife (WDFW) identifies and classifies native wildlife species needing protection and/or management to ensure their survival as free-ranging populations in the state. WDFW defines the process by which listing, management, recovery, and delisting of a species can be achieved. These rules are established to ensure that consistent procedures and criteria are followed when classifying wildlife as endangered, threatened, or sensitive.

The Sikes Act requires Secretaries of Military Departments to prepare INRMPs in cooperation with the USFWS and the state fish and wildlife agency in which the installation is located. Therefore, the above-listed regulations are incorporated into the FAFB INRMP.

3.3.2 Existing Conditions

3.3.2.1 Vegetation

Development of the northern half of the installation resulted in historic native vegetation being replaced with buildings, roads, parking lots, and other manmade structures. Six of the proposed projects would occur within and around buildings surrounded with paved surfaces and devoid of any vegetation. The remaining four projects would occur on previously disturbed sites that have been seeded with non-native manicured grass.

3.3.2.2 Wildlife

Mammals known to occur on the AFB include 14 small mammal species (Fairchild AFB 2024a). However, wildlife habitat within the 10 proposed project areas is considered marginal due to human presence and disturbance. Habitat and species that may occur would be typical of those found in developed urban areas.

Bird species present at Fairchild AFB include year-long residents, neotropical migrants, occasional winter residents, and migrants that stopover in the spring and fall (Fairchild AFB 2024a). Approximately sixty bird species have been recorded in the southern portion of the AFB. The mowed grass areas provide suitable habitat for birds such as the grasshopper sparrow (*Ammodramus savannarum*) and savannah sparrow (*Passerculus sandwichensis*) (Fairchild AFB 2009).

The following nine amphibian and reptile species have been documented in the southern portion of the AFB, Pacific treefrog (*Pseudacris regilla*), Columbia spotted frog (*Rana luteiventris*), valley garter snake (*Thamnophis sirtalis fitchi*), western yellow-bellied racer (*Coluber constrictor mormon*), long-toed salamander (*Ambystoma macrodactylum*), western painted turtle (*Chrysemys picta bellii*), western terrestrial garter snake (*Thamnophis elegans*), western rattlesnake (*Crotalus viridis*) and northern rubber boa (*Charina bottae*) (Fairchild AFB 2009). However, they are unlikely to occur within the heavily disturbed project areas.

3.3.2.3 Protected and Sensitive Species

The Washington office of the USFWS (April 21, 2025) identified five federally listed species with potential to occur on Fairchild AFB or potential to be affected by implementation of the Proposed Action (**Table 3.3-1**) (Appendix D). All five species were dropped from further consideration because no suitable habitat occurs within the proposed project areas.

Table 3.3-1 Federally Listed Species with Potential to Occur in the Project Area

Species		Status*	Habitat Description	Suitable Habitat Present in Project Area?	Designated Critical Habitat Present or Potentially Affected?	Rationale for Exclusion from Analysis
Common Name	Latin Name					
Birds						
Yellow-billed Cuckoo	*Coccyzus americanus*	T	Dense wooded areas with nearby water	No	No	No suitable habitat within the Project Area
Fish						
Bull Trout	*Salvelinus confluentus*	T	Cold, complex and connected waterways in mountainous areas	No	No	No suitable habitat within the Project Area
Insects						
Monarch Butterfly	*Danaus plexippus*	PT	Milkweed species (*Asclepias* spp.) wherever they are found	No	No	No suitable habitat within the Project Area
Suckley's Cuckoo Bumble Bee	*Bombus suckleyi*	PE	Rich floral landscapes	No	No	No suitable habitat within the Project Area
Plants						
Spalding's Catchfly	*Silene spaldingii*	T	Palouse grasslands and scablands	No	No	No suitable habitat north of the airfield.

Source = USFWS 2025
*T = Threatened; PT = Proposed threatened; PE = Proposed Endangered.

Fairchild AFB (2024a) identified 46 federal and state listed species with potential to occur on Fairchild AFB, including 18 avian, four mammal, three amphibian/reptile, three invertebrate, and

18 plant species (**Table 3.3-2**). Of these, six bird and four plant species have been observed on the AFB. The other species on the list may potentially use the installation if suitable habitat is present or they may migrate through.

Table 3.3-2. Protected and Sensitive Species with Potential to Occur on Fairchild AFB

Common Name	Scientific Name	Observed On-Base	Federal Status*	State Status*
Birds				
Bald eagle	*Haliaeetus leucocephalus*	Y	Delisted, SOC, M	--
Golden eagle	*Aquila chrysaetos*	Y	--	C
Ferruginous hawk	*Buteo regalis*	Y	SOC	E
Northern goshawk	*Accipitor gentilis*	--	SOC	C
Peregrine falcon	*Falco peregrinus*	Y	SOC	--
Burrowing owl	*Athene cunicularia*	--	SOC	C
Flammulated owl	*Otus flammeolus*	--	--	C
Common loon	*Gavia immer*	--	--	S
American white pelican	*Pelicanus erythrorhynchus*	--	--	S
Sharp-tailed grouse	*Tympanuchus phasianellus*	--	SOC	E
Black-backed woodpecker	*Picoides arcticus*	--	--	C
Black tern	*Chlidonias niger*	Y	SOC	--
Loggerhead shrike	*Lanius ludovicianus*	--	SOC	C
Upland sandpiper	*Bartramia longicauda*	--	--	E
Sagebrush sparrow	*Artemisiospiza nevadensis*	--	--	C
Sage thrasher	*Oreoscoptes montanus*	--	--	C
Western grebe	*Aechmophorous occidentalis*	--	--	C
Willow flycatcher	*Empidonax traillii*	Y	SOC	--
Mammals				
Townsend's big-eared bat	*Coryhorhinus townsendii*	--	SOC	C
Black-tailed jackrabbit	*Lepus californicus*	--	--	C
White-tailed jackrabbit	*Lepus townsendii*	--	--	C
Washington ground squirrel	*Spermophilus washingtoni*	--	C	C
Reptiles / Amphibians				
Northern leopard frog	*Rana pipiens*	--	SOC	E
Columbia spotted frog	*Rana luteiventris*	--	--	C
Western toad	*Bufo boreas*	--	SOC	C
Invertebrates				
Mann's mollusk-eating ground beetle	*Scaphinotus mannii*	--	--	C
Juniper hairstreak	*Mitoura grynea barryi*	--	--	C
Silver-bordered fritillary	*Boloria selene atrocostalis*	--	--	C
Vascular Plants				
Grand redstem	*Ammannia robusta*	--	--	S
Yellow lady's-slipper	*Cypripedium parviflorum*	--	--	S
Green keeled cotton-grass	*Eriophorum viridicarinatum*	--	--	S

Common Name	Scientific Name	Observed On-Base	Federal Status*	State Status*
Gray stickseed	*Hackelia cinerea*	--	--	S
Palouse goldenweed	*Pyrrocoma liatriformis*	--	--	T
Howellia	*Howellia aquatilis*	--	--	T
Canadian St. John's-wort	*Hypericum majus*	--	--	S
Dwarf rush	*Juncus hemiendytus var. hemiandytus*	--	--	S
Inch-high rush	*Juncus uncialis*	Y	--	T
Marsh muhly	*Muhlenbergia glomerata*	--	--	S
Mousetail	*Myosurus alopecuroides*	Y	--	T
Wilcox's penstemon	*Penstemon wilcoxi*	--	--	S
American pillwort	*Pilularia americana*	Y	--	S
Austin's knotweed	*Polygonum austiniae*	--	--	S
Idaho gooseberry	*Ribes oxycanthoides*	--	--	S
Spalding's catchfly	*Silene spaldingii*	Y	T	T
Silver-bordered Fritillary	*Boloria selene atrocostalis*	--	--	S
Prairie cordgrass	*Spartina pectinata*	--	--	S

Sources: Fairchild AFB 2024a
*Notes: E = Endangered; S = State-listed Sensitive; SOC = Species of Concern; C = Candidate for Listing; M = Monitoring.

3.3.3 Environmental Consequences

This section summarizes potential impacts that could result from implementation of the Proposed Action Alternative and the No Action Alternative. An impact would be considered significant if the Proposed Action resulted in substantial permanent conversion or net loss of habitat, long-term loss or impairment of local habitat (species-dependent), loss of populations of species, or unpermitted or unlawful "take" of federally protected species.

3.3.3.1 Proposed Action Alternative

Vegetation. Short-term, negligible impacts to vegetation could result from implementation of the Proposed Action. The proposed projects would result in short- and long-term minor adverse impacts to vegetation. Short-term impacts would be associated with trampling, use of heavy equipment, and vegetation removal during construction of the airfield lighting improvements, government parking yard, MWD training area, CDC, and taxi lane pull-throughs/parking lots. However, these areas have been previously disturbed and would be restored to pre-existing conditions by reseeding and irrigation.

Long-term impacts could result from construction of permanent structures such as the government parking yard, MWD training area, CDC, and taxi lane pull-through and parking spots. In total, approximately 15.2 acres (less than 1 percent) of the installation would be converted from previously disturbed, manicured landscape areas to impervious surface.

Ground disturbance and use of construction vehicles and other equipment could lead to the spread of noxious weeds and other invasive species in and around the construction sites. However, standard BMPs would be used to reduce the spread of noxious weeds. These BMPs

include cleaning and removing all noxious weed material and seeds from equipment prior to its use on-site and prior to transporting the equipment off-site. Following construction, disturbed areas would be revegetated with weed free materials to prevent colonization by noxious weeds.

Wildlife. Short-term negligible adverse effects to wildlife could occur from implementation of the Proposed Action. The use of vehicles and construction equipment could result in injury or direct mortality to individual animals. Mobile species such as adult birds could flee the area and would be less susceptible to direct impacts than smaller, less-mobile species or life stages. Given the location and extent of the projects, the number of individuals affected would likely be extremely small, if any, in comparison to local and regional populations.

Long-term impacts to wildlife would result by constructing projects in existing habitat areas, such as the government parking yard, child development center and the taxi lane pull-throughs and parking spots. However, the habitat in these locations is marginal at best and impacts would be negligible.

Noise associated with construction, demolition, and use of heavy equipment could disturb wildlife, including migratory birds. However, species located in the project areas are likely adapted to urban noises and human presence. Transient and mobile species would likely avoid the project areas during construction.

Protected and Sensitive Species. Short-term, negligible impacts could occur to state listed protected and sensitive species. However, the proposed projects are unlikely to affect most species listed in **Table 3.3-2** due to a lake of suitable habitat. If protected or sensitive species are present, impacts would be the same as those listed above for vegetation and wildlife species.

To avoid potential impacts to protected and sensitive species, the following mitigation measures should be implemented:

- Conduct pre-construction surveys for sensitive species and breeding birds with potential to occur in the project areas.
- If sensitive species are detected, construction should occur seasonally to avoid critical breeding/nesting periods.

3.3.3.2 No Action Alternative

Under the No Action Alternative, the 10 proposed projects would not be constructed. As a result, there would be no effects to vegetation or wildlife, including the protected and sensitive species listed above.

3.4 CULTURAL RESOURCES

3.4.1 Definition of the Resource

Cultural resources are historic and prehistoric archaeological sites, structures, buildings, artifacts, districts, and any other physical evidence of human activity considered important to a culture or community for scientific, traditional, religious, or other reasons. This definition includes Native American sacred sites and Traditional Cultural Properties (TCPs) as well as architectural and archaeological resources. Under Section 106 of the NHPA, as amended (54 USC Section 300101 et seq.) federal agencies must consider effects to "historic properties" from an action or undertaking. Historic properties are defined (54 USC Section 300308) as cultural resources that are either listed, or eligible for listing, on the NRHP. Under NHPA Section 106, Fairchild AFB is required to consider the effects of its actions on historic properties.

The NHPA Section 106 regulatory compliance process consists of four primary stages: (1) initiation of the Section 106 process (36 CFR Section 800.3); (2) identification of historic properties (36 CFR Section 800.4), which includes identifying historic properties potentially affected by undertakings; (3) assessment of adverse effects (36 CFS Section 800.5), which determines whether the undertaking would affect historic properties and if effects to those properties might be averse; and (4) resolution of adverse effects (36 CFR Section 800.6) as agreed upon between consulting parties.

Fairchild AFB coordinates NEPA compliance with its NHPA responsibilities to ensure that historic properties and cultural resources are given adequate consideration during the preparation of environmental documents such as this EA.

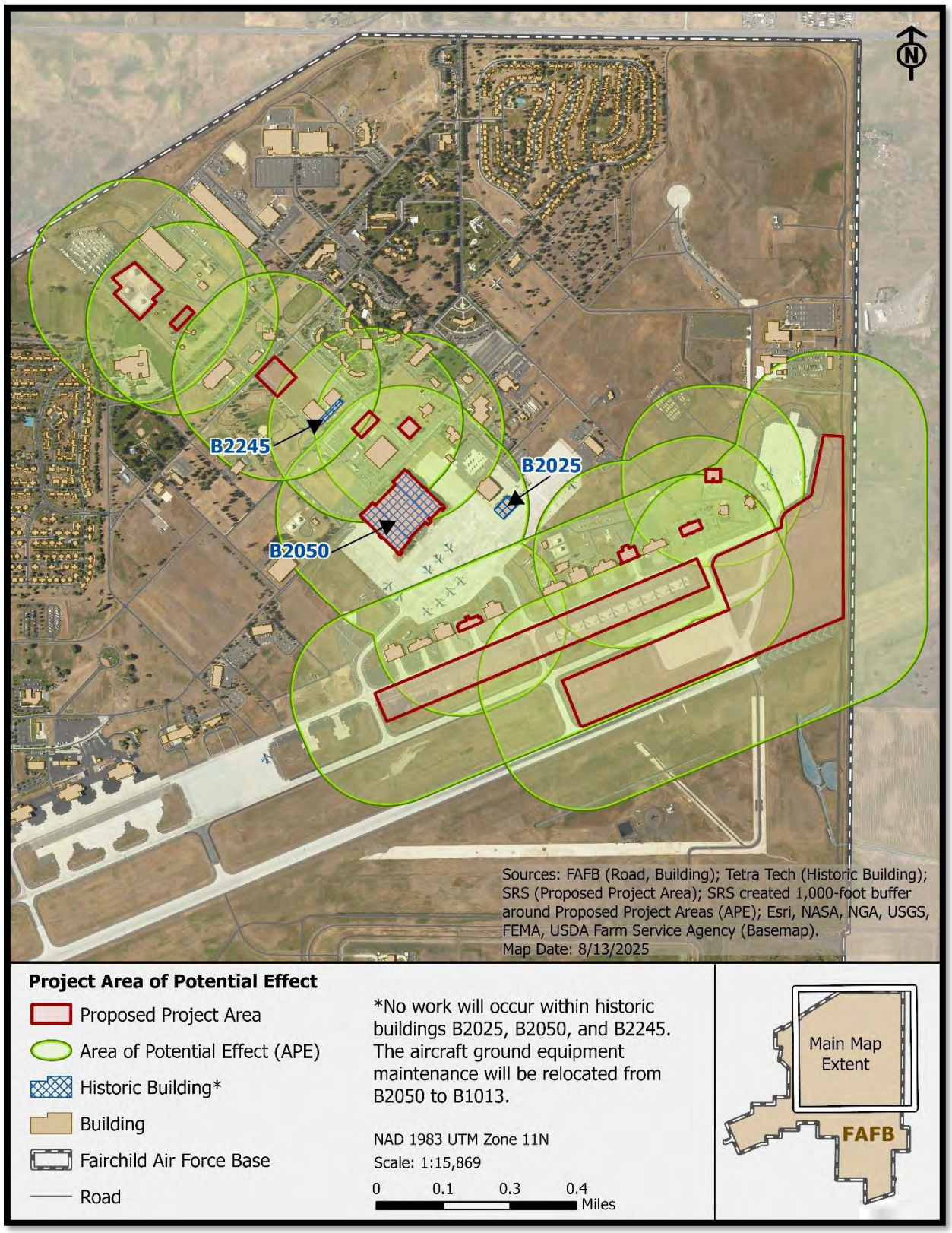
3.4.2 Existing Conditions

As defined under 36 CFR Section 800.16(d), the Area of Potential Effect (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking. For this analysis, the term APE is synonymous with ROI for cultural resources.

The Air Force has defined the APE for direct effects to historic properties as the specific footprint impacted by the 10 distinct projects located in the main base area, as shown in **Figure 3.4-1**.

The APE for indirect effects is defined as a 1,000-foot buffer around each individual project area. Given the auditory and visual environment of an active Air Force base, this buffer should capture all locations from which individual project construction or demolition activity may be visible or audible. Indirect effects to B2025, B2245, and B2050 from proposed project noise, visual impacts, and relocation of the AGE Maintenance from B2050 to B1013 would be temporary and would not affect integrity or characteristics that make the buildings eligible for inclusion on the NRHP.

Figure 3.4-1. Area of Potential Effect



As discussed below, there are three NRHP-eligible historic buildings, and no NRHP-eligible archaeological or sacred sites or locations of traditional cultural importance within the APE and Indirect APE.

Fairchild AFB facilitated installation-wide historic architectural surveys in 1990 and again in the mid-1990s, and architectural studies in 2005 and 2006 focused on the main base (e.g., e2M 2008, Heritage Consulting Group 2008, Fairchild AFB 2018a, Washington State Department of Archaeology and Historic Preservation 2019).

Three historic properties, buildings that have been found individually eligible for the NRHP, are located within the direct or indirect APE (Fairchild AFB 2018a). These are:

1. **B2025** – A 46,164 square-foot maintenance hangar built in 1943. It contains two bays with a closed flat gabled roof, in a standardized design known as “Air Corps Technical School Type TUH-2.”
2. **B2050** – A 468,220 square-foot “assembly and repair” hangar built in 1943 as a permanent repair structure according to a standardized plan known as “Air Corps A/C Relay 4 Bay).” It is the largest structure on base, located just north of the flightline.
3. **B2245** – a 45,880 square-foot administrative center built in 1943 in the center of the base north of B2050.

. The remainder of the buildings and structures within the APE are not historic properties (Fairchild AFB 2018a).

Fairchild AFB conducted various archaeological surveys of the main base in 1988 and 1989. Three historic-period archaeological sites associated with late 19th Century and early 20th Century Homesteading were identified. All of these were determined as not eligible for listing on the NRHP. None of these are located within the APE. A building survey in 1990 by the Spokane City/County Historic Preservation Office identified and evaluated an historic well that dates to 1889 and is associated with the homestead of Raymond Gee, located in the training district in the southwest corner of the base. The well was determined not eligible for the NRHP with SHPO concurrence (Fairchild AFB 2018a). Upon completion of their work, the Spokane City/County Historic Preservation Office determined that due to the high degree of modern development and ground disturbance, intact, NRHP-eligible resources were highly unlikely on Fairchild’s main base. They concluded that no additional archaeological surveys of the installation were warranted unless there was an inadvertent discovery (Fairchild AFB 2018a). Thus, four historic archaeological sites have been identified on the installation, none of which are eligible for listing in the NRHP. No known archaeological sites are within the APE.

A total of 4 federally recognized Tribes consult with Fairchild AFB and associated training areas. Given the various regions and lands Fairchild AFB operates in, consulting Tribes are organized by their geographically separate units and nearby training areas.

3.4.3 Environmental Consequences

This section addresses potential impacts to cultural resources within or adjacent to the ten individual proposed project areas.

Impacts to cultural resources can occur by physically altering, damaging, or destroying a resource or by altering characteristics of the surrounding environment that contribute to the resource's significance. To evaluate impacts, historic properties are subject to the criteria of adverse effect found at 36 CFR 800.5.

Direct impacts are typically caused by physical changes to a historic property. Indirect effects usually occur through increased use, visual disturbance, or noise. A significant impact or adverse effect to historic properties occurs when an undertaking or action alters, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP.

Adverse effects or significant impacts to historic properties can include: (1) physical destruction of or damage to all or part of the property; (2) alteration of a property, including restoration, rehabilitation, repair, maintenance, and stabilization; (3) removal of the property from its historic location; (4) change of character in the property's use or of physical features within the property's setting that contribute to its historic significance; and (5) introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.

If an undertaking directly or indirectly affects a property in a manner that does not permanently alter its integrity or NRHP eligibility, this effect is considered not adverse (i.e., not a significant impact).

3.4.3.1 Proposed Action Alternative

B2025, B2245, and B2050 are the only structures at Fairchild AFB eligible for listing on the NRHP. B2050 is within the direct effects of the APE for the proposed project, which entails relocating the AGE Maintenance from B2050 to B1013. The Proposed Action would remove AGE Maintenance equipment from the building and transfer it to B1013. No new structural modifications or ground-disturbing activities would occur within and around the structure. Accordingly, the Proposed Action would not impact the building's integrity of significant historic features, change the character of the building's use or physical features that contribute to historic significance, or alter setting, or ability to convey feeling or sense of historic importance. The relocation of the AGE Maintenance would not "diminish the integrity of the properties' significant historic features" (36 CFR Section 800.5(a)(2)(v)). Indirect effects to B2025, B2245, and B2050 from proposed project noise and visual impacts would be temporary and would not affect integrity or characteristics that make the buildings eligible for inclusion on the NRHP. Land use setting would remain consistent with the buildings' intended uses on a military facility for B2025 and B2245.

B2025 and B2245 are within the 1,000-foot indirect impacts APE for the following projects, Renovate/Relocate AGE Maintenance from B2050 to B1013, Construct Government Parking

Yard, Replace CDC, and Demolition of B2120; however, there would be no adverse indirect effects or significant indirect impacts. The proposed Renovate/Relocate AGE Maintenance from B2050 to B1013 project is within 750 feet from B2025. The proposed Construct Government Parking Yard, Replace CDC, and Demolition of B2120 projects are within 650 feet of B2245. The history of development at Fairchild AFB has changed each building's relationship with surrounding facilities and features. A flat-lying concrete parking yard associated with the proposed Government Parking Yard project would not significantly alter the viewshed from B2245. Due to the history of development within Fairfield AFB, indirect effects would not significantly alter the historic setting or viewshed from these properties. Given these factors, as well as the previous loss of integrity of setting, and that the locations are adjacent to an active flightline, it is unlikely that any indirect visual, atmospheric, or audible effects would be introduced that would further "diminish the integrity of the property's significant historic features" (36 CFR Section 800.5(a)(2)(v)).

None of the other structures involved with the Proposed Action, B2090, B2060, and B2120, are historic properties. The Proposed Action entails relocating LRS from B2090 to B1003. B2090 would be used as AMU space of MX group. B2060 and B2120 are slated to be demolished. These buildings have been evaluated and recommended not eligible for NRHP (Fairchild AFB 2018a). The direct and indirect APEs for the Bulk Fuel Storage Tank #3, Repairing Approach Lighting Electrical Vaults, New Government Parking Yard, Construction of MWD Training Area, new CDC, and Construction of Taxi Lane Pull-throughs and Parking Spots have been surveyed and assessed for archaeological and historic resources and do not contain any archaeological sites, historic structures, historic districts, cemeteries, sacred sites, TCPs, or other resources identified as eligible for listing on the NRHP (Fairchild AFB 2018a).

Fairchild AFB has conducted government-to-government consultation regarding the Proposed Actions with the following Native American Tribes: the Coeur d'Alene Tribe, the Confederated Tribes of the Colville Reservation, the Kalispel Tribe of Indians, and the Spokane Tribe of Indians. These four Tribes have been invited to comment on potential impacts to cultural resources from the proposed projects. All correspondence associated with tribal consultation is provided in Appendix A of this document.

For projects that would impact an NRHP-listed or -eligible historic property or district, the installation Cultural Resources Manager would follow the procedures contained in any relevant PAs or Program Comments applicable to the undertaking or resource to mitigate the impact. If no relevant PA or Program Comment exists, then the garrison would consult with the SHPO and other relevant consulting parties through the NHPA Section 106 process to identify possible adverse impacts on historic properties, modifications to the project to avoid or minimize those impacts and appropriate measures to mitigate the adverse impacts. The specific mitigation measures would be determined on a case-by-case basis and implementing them would be sufficient to reduce adverse impacts to below significant levels

In the case of inadvertent discovery of cultural resources, work on-site would cease and the discovery would be immediately reported to the Fairchild AFB cultural resources manager, who would initiate the Section 106 process. The archaeological discovery would be initially treated

as potentially eligible for listing on the NRHP. If further evaluation reveals that the site is not eligible for NRHP listing with Washington SHPO concurrence, then Air Force activity could resume.

3.4.3.2 No Action Alternative

Under the No Action Alternative, the proposed projects would not be implemented and, as a result, impacts to cultural resources would not be anticipated.

3.5 HAZARDOUS MATERIALS AND WASTE

3.5.1 Definition of the Resource

3.5.1.1 Hazardous Materials, Hazardous Waste, and Petroleum Products

Hazardous materials are defined by 49 CFR 171.8 as hazardous substances, hazardous waste, 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 Part 173. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA) at 42 USC Section 6903(5), as amended by the Hazardous and Solid Waste Amendments, as “a solid waste, or combination of solid waste, 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.”

Petroleum products include crude oil or any derivative thereof, such as gasoline, diesel, or propane. They are considered hazardous materials because they present health hazards to users in the event of incidental releases or extended exposure to their vapors. Evaluation of hazardous materials and waste focuses on the storage, transportation, handling, and use of hazardous materials, as well as the generation, storage, transportation, handling, and disposal of hazardous waste. In addition to being a threat to humans, the improper release or storage of hazardous materials, hazardous waste, and petroleum products can threaten the health and well-being of wildlife, habitats, soil systems, and water resources.

3.5.1.2 Toxic Substances

Special hazards are substances that might pose a risk to human health. They are addressed separately from hazardous materials and hazardous waste. Special hazards ACMs, lead-based paint (LBP), and polychlorinated biphenyls (PCBs) are typically found in older buildings and utility infrastructure. Asbestos is regulated by the USEPA under the CAA and Toxic Substances Control Act; however, the USEPA has given SRCAA the authority to regulate asbestos in Spokane County.

Any material containing more than 1 percent asbestos by weight is considered an ACM. ACMs are generally found in building materials such as floor tiles, mastic, roofing materials, pipe wrap,

and wall plaster. ACMs might be present in buildings and other structures on Fairchild AFB, and LBP is found in many surface coatings on the installation. PCBs are human-made chemicals that persist in the environment and were widely used in building materials (e.g., caulk and joint compound) and electrical products (ballasts) prior to 1979. Structures built prior to 1979 may include PCB-containing building materials.

3.5.1.3 Environmental Contamination

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) governs response or cleanup actions to address releases of hazardous substances, pollutants, and contaminants into the environment, including actions at federal facilities. Fairchild AFB is listed on the National Priorities List as a Superfund site, and cleanup actions throughout the installation are being performed. Section 120 of CERCLA pertains to cleanup actions at federal facilities. The 1990 Federal Facility Agreement for Fairchild AFB is an agreement between the USEPA, USAF, and WSDOE that establishes the procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at Fairchild AFB in accordance with CERCLA, the National Contingency Plan, Superfund guidance and policy, RCRA, and RCRA guidance and policy (USEPA et al. 1990).

The Defense Environmental Restoration Program was formally established (10 USC Sections 2700–2711) by Congress as part of the Superfund Amendments and Reauthorization Act of 1986 to provide for the cleanup of DoD property at active installations, Base Realignment and Closure installations, and formerly used defense sites throughout the U.S. and its territories. There are two restoration programs under the Defense Environmental Restoration Program: the Environmental Restoration Program (ERP) and the Military Munitions Response Program (MMRP). The ERP addresses contaminated sites, and the Military Munitions Response Program addresses nonoperational military ranges and other sites suspected or known to contain unexploded ordinance (UXO), discarded military munitions, or munitions constituents. Each site is investigated, and appropriate remedial actions are taken under the supervision of applicable federal and state regulatory programs. When no further remedial action is necessary for a given site, the site is closed, and it no longer represents a threat to human health or 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 sites on Fairchild AFB that involve contamination by petroleum, oils, and lubricants, cleanup is conducted under the state Voluntary Cleanup Program, administered by the WSDOE, and in accordance with the Model Toxics Control Act.

3.5.1.4 Radon

Radon is a naturally occurring odorless and colorless radioactive gas found in soils and rocks that can lead to the development of lung cancer. Radon tends to accumulate in enclosed spaces, usually those that are below ground and poorly ventilated (e.g., basements). USEPA has established a guidance radon level of 4 picocuries per liter (pCi/L) in indoor air for residences; radon levels above this amount are considered a health risk to occupants.

3.5.2 Existing Conditions

3.5.2.1 Hazardous Materials, Hazardous Waste, and Petroleum Products

Fairchild AFB uses hazardous materials and petroleum products such as liquid fuels, aircraft deicer, pesticides, and solvents for everyday operations. The use of these hazardous materials and petroleum products results in the generation and storage of hazardous waste and used petroleum products on the installation. Fairchild AFB is a RCRA Large Quantity Generator with facility identification number WA9571924647 (Fairchild AFB 2023a; Fairchild AFB 2023b). RCRA Large Quantity Generators generate 1,000 kilograms per month or more of hazardous waste or more than 1 kilogram per month of acutely hazardous waste.

Three of the ten proposed projects would include storage of hazardous materials and/or petroleum products. The construction of Bulk Fuel Storage Tank #3 includes installing a 20,000 barrel above-ground jet fuel storage tank that would contain petroleum products. The Renovate/Relocate building projects currently store hazardous materials and petroleum products in buildings B2090 and B2050. The renovated workspaces in buildings B1003 and B1013 would store hazardous materials and petroleum products from these buildings.

USAF installations manage hazardous materials and waste through AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*. Fairchild AFB has implemented installation-specific hazardous materials and hazardous waste management plans. These plans define roles and responsibilities, address record keeping requirements, and provide spill contingency and response requirements (Fairchild AFB 2023a; Fairchild AFB 2023b).

Fairchild AFB operates two Type III jet fuel hydrant systems on the aircraft parking ramp and uses multiple ASTs for the bulk storage of jet fuel. The total jet fuel storage capacity of Fairchild AFB is approximately 4.6 million gallons. The installation also operates four 12,000-gallon ASTs for the storage of deicing fluid. Fairchild AFB runs a laboratory, which distributes hazardous materials and collects hazardous waste from customers on the installation (Fairchild AFB 2014, DAF 2018).

3.5.2.2 Toxic Substances

Known ACMs on Fairchild AFB are managed in accordance with the installation's asbestos management plan and through a database that holds detailed information on surveys and abatement actions (Fairchild AFB 2024c). The plan provides documentation for all asbestos management efforts and procedures for overseeing the Fairchild AFB asbestos management program. The plan assigns responsibilities, establishes inspection and repair processes, and

provides personnel protection instructions. Known ACMs that do not require immediate abatement are managed in-place until conditions require their removal, or until renovation or demolition activities occur. All the facilities to be renovated or demolished could potentially contain asbestos and would require ACM surveys.

To protect USAF personnel and the public during management and disposal of LBP, Fairchild AFB assumes all building coatings are LBP and performs Toxicity Characteristic Leaching Procedure (TCLP) as a standard operating procedure on suspect materials and all construction debris. If heavy metal dust is encountered, the material is wipe-sampled to confirm the presence of LBP and potentially other heavy metals prior to renovation and demolition activities. Material containing LBP or toxic TCLP metal concentrations are managed and disposed of in accordance with federal, state, and local regulations. As an additional safeguard, Fairchild AFB has a blood testing program to monitor children living on the Base for potential lead exposure should this be of concern.

The buildings proposed for renovation and demolition have the potential to contain PCBs in older building material (e.g., caulk, joint compound). Older electrical infrastructure, such as ballasts, light fixtures, surge protectors, and hydraulic equipment within buildings manufactured before 1979 may contain PCBs. It is a standard operating procedure to check ballast labels for PCBs and any ballast not marked as PCB-free is assumed to be PCB containing and disposed of in accordance with local requirements.

3.5.2.3 Environmental Contamination

As of 2022, a total of 18 active ERP and three active MMRP sites occur on the installation (Fairchild AFB 2022b). There are five proposed project locations that intersect with an ERP site as shown on **Figure 3.5-1**. **Table 3.5-1** lists the ERP sites at the proposed project areas, along with their status and land use controls (LUCs). The following projects are located within or near ERP site locations, Construct Bulk Fuel Storage Tank #3, Renovate/Relocate LRS from B2090 to B1003; Renovate/Relocate AGE Maintenance from B2050 to B1013, Construct Taxi Lane Pull-Throughs and Six Parking Spots, and Demolition of B2120. None of the proposed projects intersect with MMRP sites.

Figure 3.5-1 Environmental Restoration Sites and Proposed Project Locations

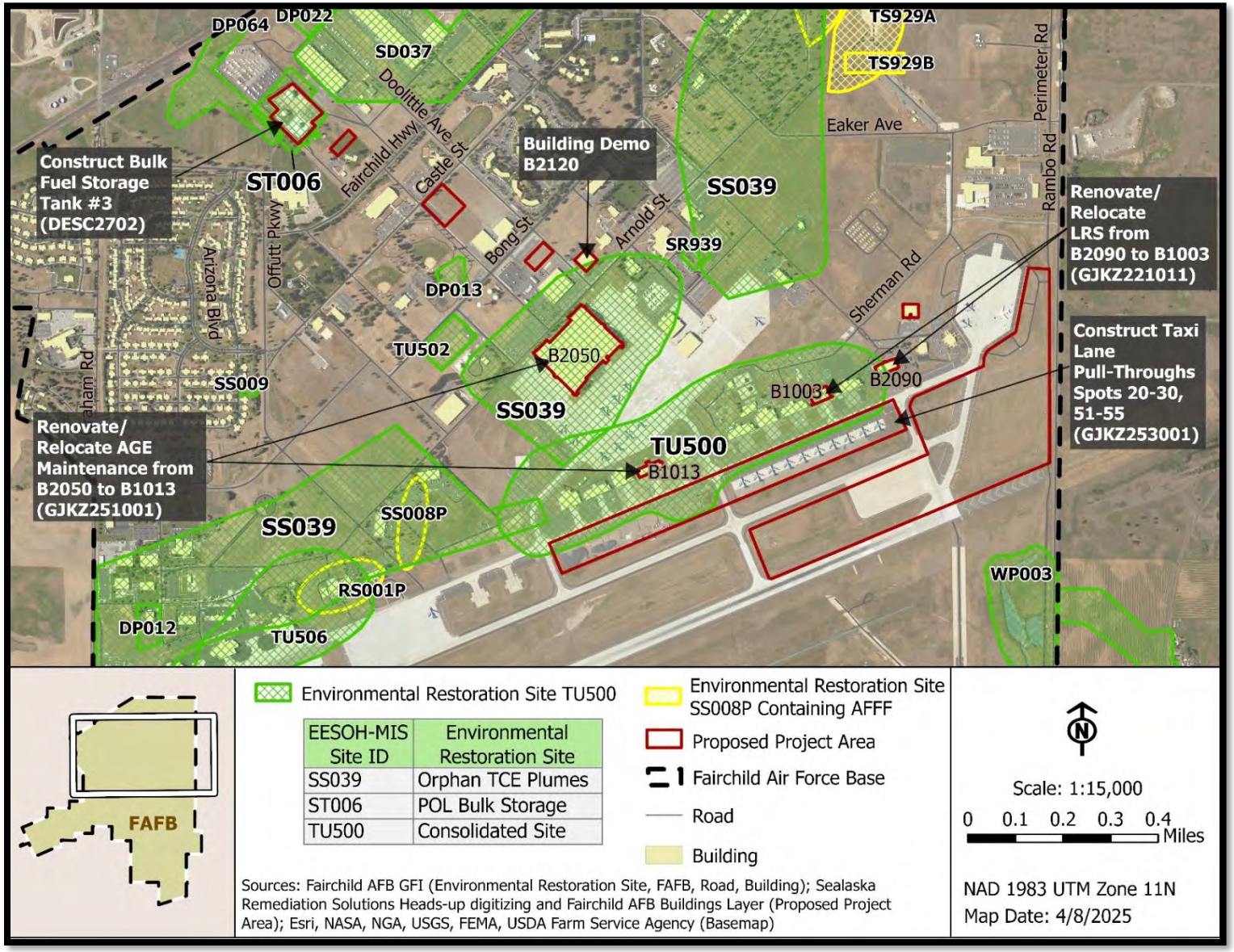


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Table 3.5-1 Projects Overlapping ERP Sites and LUCs

Project	ERP* Site	LUCs
Construct Bulk Fuel Storage Tank #3 (DESC2702)	ST006	Soil Exposure Prohibited
Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003 (GJKZ221011)	TU500	Soil Exposure Prohibited, Agricultural Groundwater Use Prohibited, Drinking Water Wells Prohibited, Human Groundwater Consumption Prohibited
Renovate/Relocate AGE Maintenance from B2050 to B1013 (GJKZ251001)	SS039, TU500	Soil Exposure Prohibited, Agricultural Groundwater Use Prohibited, Drinking Water Wells Prohibited, Human Groundwater Consumption Prohibited
Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55 (GJKZ253001)	TU500	Soil Exposure Prohibited, Agricultural Groundwater Use Prohibited, Drinking Water Wells Prohibited, Human Groundwater Consumption Prohibited
Demolition of B2120	SS039	Agricultural Groundwater Use Prohibited, Drinking Water Wells Prohibited, Human Groundwater Consumption Prohibited

ERP Site ST006 is the main bulk fuel storage facility located in the northwest portion of Fairchild AFB. The site consists of petroleum impacted soil that exceeds state cleanup standards (Fairchild AFB 2022b). Soil cannot be assessed until the tank farm is no longer in use. Hydrocarbon impacted groundwater contamination has been remediated to required cleanup standards. Groundwater monitoring indicated that existing soil contamination is not contributing to groundwater contamination. Future land use is expected to remain consistent with current LUCs and prohibit the exposure of hydrocarbon-affected soils (Fairchild AFB 2024b).

ERP Site SS039 consists of chlorinated solvent and hydrocarbon-contaminated groundwater plumes extending across the installation over an area approximately 3 miles long and 0.33-mile wide. In situ groundwater treatment has occurred, and the site is currently undergoing additional remedial action. Annual groundwater monitoring is performed (Fairchild AFB 2022b), and LUCs at the site prohibit the use of groundwater.

ERP Site TU500 consists of hydrocarbon and heavy metal-contaminated soil and groundwater that is located primarily within the eastern portion of the flightline. The area is composed of multiple sites that were previously investigated separately. Interim measures to clean-up contaminated soils at OW040 and OW042 are outlined in the 2019 Final Voluntary Cleanup Program Consolidated Site TU500 Interim Measure Work Plan (Fairchild AFB 2019). Currently, contamination at the remaining TU500 sites are being addressed under selected remedies that include natural attenuation and/or LUCs. LUCs that are applicable to each site prohibit contaminated soil exposure and groundwater use.

Perfluroroocatanoic acid (PFOA) and perfluroroocatanesulfonic acid (PFOS) resulting from the use of firefighting aqueous film forming foams (AFFF) have been detected in most monitoring wells across Fairchild AFB. The USEPA May 2025 maximum contaminant level (MCL) is 4 parts

per trillion for PFOA and PFOS. Groundwater beneath the Fairchild AFB may exceed the MCL in many of the proposed project areas.

Figure 3.5-1 shows previously mapped AFFF plumes known to contain PFOA/PFOS occurring within ERP Site SS039. Due to the widespread occurrence of PFOA and PFOS in groundwater, however, many of the proposed projects where groundwater is encountered would plan for the potential of managing this contamination in accordance with federal, state, and local requirements.

3.5.2.4 Radon

The USEPA rates Spokane County, Washington, as radon Zone 1. Counties in Zone 1 have a predicted average indoor radon screening level greater than 4 pCi/L (USEPA 2019a). The installation is a Medium-risk installation, which is 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 1 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 mitigated 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.

3.5.3 Environmental Consequences

The evaluation of impacts associated with hazardous materials and waste focuses on how and to what degree the proposed projects would affect hazardous materials usage and hazardous/solid waste generation and management, as well as how they would impact ERP sites.

A significant impact would occur if:

- The proposed projects resulted in the use of hazardous materials that are highly toxic or have potential to cause severe environmental damage (e.g., extremely hazardous substances as listed in the Superfund Amendments and Reauthorization Act Title III).

- The proposed activities were to generate hazardous/solid waste types or quantities that could not be accommodated by the current management system.
- A disturbance to an ERP site would result in a potential release of hazardous constituents, exacerbating the migration of existing hazardous constituents or would pose an elevated safety risk to workers due to exposure to these constituents.
- Disturbance of or interference with remedial activities at an ERP site, or violation of the LUCs designed to protect and ensure the effectiveness of the selected remedy at an ERP site were to occur.

3.5.3.1 Proposed Action Alternative

Hazardous Materials and Petroleum Products. The use of hazardous materials and petroleum products would result in less than significant, short-term but measurable impacts that are slight to noticeable. During facility demolition (B2060 and B2120), and renovation/relocation activities (B2050 to B1013 and B2090 to B1003), any hazardous materials or petroleum products present would be excessed or transferred to the new facilities prior to commencement of project activities. Construction, demolition, and renovation 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 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 AFMAN 32-7002, contractors would report use of hazardous materials to the Environmental Office via the contracting officer, including pertinent information (e.g., Safety Data Sheets) to mitigate any potential impacts associated with hazardous materials. Contractors would use environmental protection measures to prevent releases of hazardous materials and ensure any releases do not result in contamination.

Long-term, beneficial impacts associated with hazardous materials and petroleum products could occur from 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. The proposed Construct Bulk Fuel Storage Tank #3 project would build a new AST for jet fuel storage. The new system would be built to meet all applicable design standards to minimize the risk of potential leaks and spills.

Hazardous and Petroleum Waste. Less than significant short-term but measurable impacts that are slight to noticeable from the generation of hazardous and petroleum waste would be expected. During facility demolition and renovation activities, any hazardous and petroleum waste currently being stored at the facilities would be disposed of off-site or transferred to existing transportation, storage, and disposal facilities prior to commencement of project activities. The quantity of hazardous and petroleum waste 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 waste in accordance with federal, state, and local regulations. Contractors would also be required to comply with the installation's Hazardous Waste Management Plan (2024).

Less than significant, short-term but measurable impacts that are slight to noticeable could occur while implementing the Construct Bulk Fuel Storage Tank project. The project includes constructing a new AST within an area that previously housed a former bulk fuel storage tank. The existing surface and subsurface soils and bedrock would be removed, and a ground liner and concrete slab would be placed beneath the new AST. The soil/rock surface may be impacted by petroleum and require special handling for characterization and disposal. Work would be performed in accordance with required LUCs for ERP Site ST006. Long-term, beneficial impacts, however, would be expected following the removal of any petroleum impacted materials, installing the ground liner and constructing new petroleum storage and piping systems that are compliant with federal regulations.

Toxic Substances. Less than significant short-term but measurable impacts that are slight to noticeable would occur during facility demolition and renovation because these activities could disturb ACMs, LBP, and PCBs in the facilities, or facility components, to be renovated or removed. Projects where these toxic substances may be encountered include demolition of B2060 and B2120, and renovation activities of buildings B1013 and B1003. Surveys for toxic substances would be completed, as necessary, by a certified contractor prior to work activities to ensure appropriate measures are taken to reduce potential exposure to, and release of, these toxic substances. Contractors would wear appropriate personal protective equipment (PPE) and would be required to adhere to all federal, state, and local regulations as well as the installation's management plans. All ACM- and LBP-contaminated debris would be disposed at an USEPA-approved landfill. New building construction would not include the use of these toxic substances because federal policies and laws prevent their use and building materials that do not contain these substances are available. Long-term, beneficial impacts would occur from reducing the potential for future human exposure to these toxic substances by reducing the amount of ACMs, LBP, and PCBs at Fairchild AFB.

Radon. Less than significant short-term but measurable impacts that are slight to noticeable from radon could occur due to implementation of the proposed projects. Construction workers could be exposed to radon during subsurface construction activities; however, they would generally be in open air, which would greatly reduce the potential for exposure. Long-term, negligible, adverse impacts from radon would be expected due to the proposed projects. Based on the high potential for elevated indoor radon levels in Spokane County, the new buildings proposed for construction, the MWD Training Center and CDC, 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.

ERP. Less than significant short-term but measurable impacts that are slight to noticeable are expected. Five of the proposed project areas overlap or are located near existing ERP sites at Fairchild AFB, as shown in **Figure 3.5-1** and listed in **Table 3.5-1**. Based on a review of the proposed projects and information pertaining to the ERP sites at these project locations, none of

the proposed projects would disturb or interfere with cleanup actions at ERP sites or result in a need to revise the selected remedies at these sites. All projects would be designed and constructed to avoid impacts to monitoring and/or remediation wells or equipment associated with ERP sites.

Locations of the proposed Bulk Fuel Storage Tank, Taxi Lane Pull-Throughs and Parking Spots, demolition of B2120 and both Renovate/Relocate projects overlap ERP sites with LUCs that prohibit contaminated soil exposure and/or groundwater use as listed in **Table 3.5-1**. In these areas there would be the potential for inadvertent discovery of soil and groundwater contamination during construction and demolition activities. During the project review and permitting phase, if the Air Force Civil Engineer Center (AFCEC) ERP suspects potential soil and groundwater contamination beneath a project site (including areas outside current LUC boundaries) they would sample and characterize subsurface media prior to construction activities. If sampling results confirm contamination within the project area, all contaminated media removed would be managed per applicable federal, state, and local regulations. The proposed projects overlapping ERP sites are most likely projects to be affected (see Table 3.5-1). If contaminated soil or groundwater from nearby ERP sites were encountered during project activities, the contractor would be required to immediately stop work, report the discovery to the installation, and implement appropriate safety measures. Commencement of field activities would not continue in this area until the issue is investigated and resolved. Workers performing contaminated media removal within ERP sites would be required to have Occupational Safety and Health Administration (OSHA) 40-hour Hazardous Waste, Operations, and Emergency Response (HAZWOPER) training. 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.

Specific information pertaining to projects overlapping mapped ERP sites is provided below:

- The Construct Bulk Fuel Storage Tank #3 Project overlaps ERP site ST006 (petroleum impacted soil that exceeds state cleanup standards). There is the potential to expose contaminated soil/bedrock during earthwork activities necessary for constructing the tank foundation. Site LUC requirements would be followed for managing contaminated soil exposure during construction.
- The Renovate/Relocate LRS from B2090 to B1003 Project overlaps ERP site TU500 (hydrocarbon and heavy metal-contaminated soil and groundwater). Soil disturbance in this area would be limited to subsurface trenching for water, sewer, and electrical utilities and would not occur at a depth where impacted groundwater would be encountered. Site LUC requirements would be followed for managing contaminated soil and groundwater exposure if encountered during construction.
- The Renovate/Relocate AGE Maintenance from B2050 to B1013 Project overlaps ERP sites SS039 (chlorinated solvent and hydrocarbon contaminated groundwater) and TU500 (hydrocarbon and heavy metal-contaminated soil and groundwater). Project activities at B2050 located on ERP Site SS039 would not encounter impacted soil or groundwater as the scope does not include intrusive ground disturbance. Soil

disturbance beneath ERP site TU500 would be limited to subsurface trenching for water, sewer, and electrical utilities and would not occur at a depth where impacted groundwater would be encountered. Site LUC requirements would be followed for managing contaminated soil and groundwater exposure if encountered during construction.

- The Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55 Project overlaps ERP site TU500 (hydrocarbon and heavy metal-contaminated soil and groundwater). Soil disturbance beneath ERP site TU500 would be limited to subsurface trenching for water, sewer, and electrical utilities and would not occur at a depth where impacted groundwater would be encountered. Site LUC requirements would be followed for managing contaminated soil and groundwater exposure if encountered during construction.
- The Demolition of B2120 Project overlaps ERP site SS039 (chlorinated solvent and hydrocarbon contaminated groundwater). The demolition of B2050 would be limited to minor ground surface disturbance during building removal and capping utilities in place and should not encounter contaminated groundwater.
- The Repair Approach Lighting Electrical Vaults Project does not overlap an ERP site; however, the scope includes trenching and excavating around electrical vaults to repair or replace the vaults as well as possibly installing a slurry wall to prevent groundwater intrusion into the vaults. Should contaminated soil or groundwater be encountered the contractor would be required to immediately stop work, report the discovery to the installation, and implement appropriate safety measures, including using HAZWOPER-trained personnel, as previously discussed.

Because contractors would follow established plans and procedures to prevent exposures to hazardous materials and to dispose of solid and hazardous waste appropriately and in compliance with all pertinent regulations, monitoring and remediation wells would be protected, and the proposed projects could result in the removal of some hazardous materials from Fairchild AFB, no significant impacts associated with solid or hazardous materials or waste would occur.

3.5.3.2 No Action Alternative

Under the No Action Alternative, none of the proposed projects would be implemented. Baseline conditions for hazardous materials, hazardous waste, asbestos and LBP, ERP sites, and solid waste, as described in Section 3.5.2 Hazardous Materials and Waste, would remain unchanged. Therefore, no significant impacts would occur under the No Action Alternative.

3.6 INFRASTRUCTURE AND UTILITIES

3.6.1 Definition of the Resource

Site infrastructure refers to the physical assets and essential services required to sustain the long-term operational capabilities of Fairchild AFB. The utility infrastructure at Fairchild AFB

comprises systems for electrical power distribution, natural gas supply, fuel delivery, potable water supply, sanitary sewer, stormwater management, and telecommunications. The infrastructure also encompasses the on-base transportation network, including: (1) gate and access control systems; (2) internal vehicular transportation infrastructure; and (3) the airfield and associated support facilities. The affected environment is defined as the geographical area encompassing Fairchild AFB and the external utility providers that furnish services to the installation.

3.6.1 Existing Conditions

This section summarizes the existing conditions of infrastructure at Fairchild AFB, including utility systems, transportation networks, and airfield facilities, as relevant to the Proposed Action. **Table 3.6-1** provides a consolidated overview of the major utilities and infrastructure present on the installation.

Table 3.6-1 Fairchild AFB Primary Infrastructure and Utilities

Utility		Provider/Servicer	Demand	Notes
Electrical		Bonneville Power Administration via Avista Utilities	5.3 MW (average annual)	10.8 MW (estimated maximum peak demand)
Natural Gas		Avista Utilities	20.7 million cubic feet (average annual)	43.3 million cubic feet (maximum peak demand)
Fuel		Conoco/ Various Commercial	1.8 million gallons (storage demand)	480,000 (gpd) (maximum daily intake capacity)
Water	Potable	Fort George Wright Annex	1.6 mgd (average demand)	2.2 million gallons (on-base storage capacity)
	Wastewater	City of Spokane	0.51 mgd (average discharge)	Riverside Park Water Reclamation Facility treats 34 mgd (average)
	Stormwater	n/a	n/a	On-base stormwater system is divided into eight basins
Communications		n/a	n/a	Main switches are linked via a Synchronous Optical Network (SONET)
Transportation (on-base)		n/a	n/a	9.8 million square feet of roadway on-base

MW = megawatt; gpd = gallons per day; mgd = million gallons per day

3.6.1.1 Electricity

Fairchild AFB receives electrical power from the Bonneville Power Administration via Avista Utilities through two on-base 115-kilovolt (kV) substations (North and South), each equipped with three 13.2 kV feeder circuits. The electrical distribution network includes overhead and underground power lines, high-voltage switches, junction boxes, and transformers. Annual substation maintenance is performed by the Civil Engineer Maintenance Inspection and Repair Team to ensure system reliability. Backup power is provided by emergency diesel generators, supporting mission-critical and priority facilities per AFI 32-1062 and the base's contingency response plan.

The system supports current demands with a maximum peak load demand of 10 megawatts (MW) at the North substation transformer (12.5 MW with improved cooling) and 12 MW at the South substation transformer (16 MW with improved cooling). The North and South substations had peak demands at 8.8 MW in August 2023 and July 2022, respectively, with an average demand around 4-5 MW. Previous estimates indicate an average load of 7.02 MW (65 percent), leaving 3.78 MW of headroom. Avista's 2024 peak native load was 1,869 MW, with Fairchild's peak accounting for just 0.6 percent of available capacity. The system was deemed adequate by Headquarters Air Mobility Command (DAF 2023) in 2010 and remains sufficient for current operations. While not a constraint to future development, continued maintenance, upgrades, and energy efficiency measures are necessary to ensure long-term operational resilience (Avista 2025; DAF 2023; Fairchild AFB 2020a).

3.6.1.2 Natural Gas

The natural gas system at Fairchild AFB is privatized and operated by Avista Utilities, with the primary metering station located at Graham Gate. The distribution network consists of steel pipelines, originally installed around 1960 and protected by a cathodic protection system, alongside polyethylene piping installed within the past 20 years.

In FY 2021, the installation's average natural gas demand was approximately 20.7 million cubic feet, with a peak demand of 43.3 million cubic feet. Although total system capacity is unspecified, Avista Utilities has confirmed adequate supply capability based on historical system-wide delivery levels of approximately 7.5 billion cubic feet per month (DAF 2023; Fairchild AFB 2020a).

3.6.1.3 Fuel

The liquid fuel system at Fairchild AFB includes a filtration house, a bulk storage farm with three tanks and a transfer system, three hydrant refueling systems with operating storage tanks, a ground products storage system, and two government-owned vehicle service stations. Fuel is received via commercial pipeline and tank trucks, with jet fuel pumped from bulk storage in the northwest portion of the installation and from tanks near the airfield to hydrants serving all aircraft parking areas. The system has a total storage capacity of approximately 4.6 million gallons, with a storage demand of 1.8 million gallons, resulting in 61 percent available capacity. The distribution infrastructure can receive up to 480,000 gpd, with an average daily demand of 360,000 gpd. The fuel system remains capable of supporting current operational requirements (DAF 2023; Fairchild AFB 2020a).

3.6.1.4 Water

Fairchild AFB is serviced by three distinct water systems: potable water, wastewater, and stormwater. Existing conditions and infrastructure associated with each system are described in the following sections.

Potable Water. Potable water at Fairchild AFB is supplied by the Fort George Wright Annex well complex, which consists of five wells drawing from the Spokane Valley-Rathdrum Prairie Aquifer and Latah (Hangman) Creek Aquifer. The complex has a total capacity of 6.4 mgd and supplies

water to the Geiger Reservoir. Water is then conveyed to the installation via a 16-inch transmission line owned by the AFB with easements in place, allowing maintenance to the line.

The base has a total storage capacity of 1.725 million gallons, consisting of three elevated and two ground storage tanks. If demand exceeds capacity, one backup source off base, an emergency intertie with the City of Spokane that can provide an additional 4.6 mgd. In FY 2021, average potable water demand was 1.6 mgd, with a peak of 3.1 mgd in July. As of 2022, the water supply met all USEPA and Washington State drinking water standards (DAF 2023, Fairchild AFB 2020a).

Wastewater. The sanitary sewer system at Fairchild AFB comprises 284,190 linear feet of collection mains, 605 manholes, lateral lines from buildings, and multiple lift stations. Most wastewater is conveyed to the City of Spokane's Riverside Park Water Reclamation Facility, located approximately 9 miles northeast of the installation, which treats around 34 mgd, or 23% of its 150 mgd peak capacity. Fairchild AFB operates two mounded drain field systems on the southern portion of the base as exceptions.

The installation holds Wastewater Discharge Permit #SIU-4581-01, authorizing a discharge limit of 2 mgd with no surcharges for exceedance. Between 2013 and 2017, average discharge was 0.51 mgd, with a peak of 1.99 mgd, which is 99% of the permit allowance. The system includes a Sanitary Sewer Operations and Maintenance Manual and a General Sewer Plan to meet regulatory requirements under Washington Administrative Code 173-240-050. The sewer system is currently adequate for mission needs, though inflow and infiltration issues have been identified and require mitigation. (DAF 2023, Fairchild AFB 2020a).

Stormwater. The stormwater drainage system at Fairchild AFB consists of catch basins, drywells, collection piping, lagoons, ditches, and related conveyances, divided into eight drainage basins. The central and flightline areas are served by a primary conveyance system, while the southern Survival, Evasion, Resistance, and Escape (SERE) School campus has a separate system. Remaining developed areas manage stormwater through sheet flow into open ditches. Drainage Basin 1 discharges to two small attenuation ponds before off-base flow. Perched groundwater is common, resulting in localized flooding or ponding, particularly during spring.

Stormwater management at Fairchild AFB is regulated under the USEPA's National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) and a Stormwater Pollution Prevention Plan (SWPPP). The MSGP does not cover construction-related discharges; thus, a separate Notice of Intent and project-specific SWPPP are required for any construction disturbing one or more acres (DAF 2023, Fairchild AFB 2020a).

3.6.1.5 Communications

The communications infrastructure at Fairchild AFB supports voice, data, video, wireless, land mobile radio, aircraft communications, and security systems. Distribution is facilitated by a manhole/duct system, with direct-buried lines in remote areas. The backbone network is predominantly copper and aging, but fiber optic lines are installed during facility upgrades or

new construction. Three main switches, located in Buildings 1304, 2248, and 9000, are linked via a Synchronous Optical Network (SONET) backbone (DAF 2023; Fairchild AFB 2020a).

3.6.1.6 Transportation Network

The transportation network at Fairchild AFB is evaluated in the sections below. Off-base transportation systems are not analyzed because they fall outside the scope of this assessment.

Gates/Access. Fairchild AFB is accessed via three primary gates: the 24-hour Main Gate on Mitchell Street off U.S. Highway 2; the Rambo Gate on South Rambo Road, which is open to commercial vehicles from 6 a.m. to 6 p.m. Monday through Friday and to DoD badge holders during morning and evening peak hours; and the Thorpe Gate, which serves the southern portion of the base and nearby communities, is open for DoD badge holders during the same peak hours. With five access lanes and a maximum processing capacity of 134 vehicles per lane per hour, the gates can handle 668 vehicles per hour and occasionally exceed that during peak times. Additional contingency gates, McFarland and Graham, exist on the west side of the installation, and unimproved roads such as Welcome and Bartholomew Roads offer emergency access (DAF 2023; Fairchild AFB 2020a).

On-Base Transportation. The base transportation network includes 9.8 million square feet of roadway, anchored by the following primary arterials, Mitchell Drive (which becomes Bong Street), Arnold Street, Fairchild Highway, Rambo Road, and Eaker Avenue. Secondary roads include Strategic Air Command Boulevard, West Castle Street, and O'Malley Avenue. Arnold Street provides direct flightline access. Pedestrian and bicycle movement is supported by sidewalks and crosswalks throughout the installation. While there are no dedicated transit facilities on base, a shuttle service to Spokane International Airport is available on request. Parking is generally considered adequate near all facilities. The 2008 Transportation Plan guides ongoing and future improvements, some of which have already been implemented (DAF 2023; Fairchild AFB 2020a).

Airfield. Airfield infrastructure comprises a network of runway(s), taxiways, and aprons designed to facilitate efficient aircraft movement and parking. Taxiways connect the runway to various operational areas, including maintenance hangars and aircraft parking aprons. The aprons provide ample space for aircraft staging, refueling, and maintenance activities.

Fairchild AFB's airfield infrastructure consists of a single primary runway (05/23), measuring 13,899 feet long by 200 feet wide, surfaced with grooved concrete and rated Pavement Classification Number (PCN) 88/R/B/W/T1 to support heavy military aircraft. The runway is equipped with high-intensity edge and centerline lighting, precision markings, and 4-light Precision Approach Path Indicator systems on the left side of each end. Approach lighting includes Approach Lighting System with Sequenced Flashing Lights (ALSF) Model-2 on Runway 05 and ALSF-1 on Runway 23, each with 2,400-foot high-intensity lighting and

[1] PCN 88/R/B/W/T stands for Pavement Classification Number 88, indicating the pavement's load-bearing capacity. The designation include R for rigid pavement (e.g., concrete), B for medium subgrade strength, W for support of aircraft with high tire pressure, and T indicating that the rating was determined through a technical evaluation.

sequenced centerline flashers. Taxiways link the runway to maintenance hangars and aircraft parking aprons, which provide space for aircraft staging, refueling, and maintenance. The layout is structured to support safe, efficient ground movements for a variety of aircraft in line with the installation's operational requirements (92d/141st Air Refueling Wing Safety Office 2023).

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action Alternative

Implementation of the Proposed Action would result in beneficial impacts to infrastructure and utilities. Five of the proposed projects involve the replacement, modification, or repair of existing or previously existing facilities or infrastructure. Two projects are limited to the demolition of existing structures with no associated new construction. The remaining three projects involve new construction activities, specifically development of a 1-acre parking yard, construction of MWD training facility, and expansion of aviation infrastructure to include additional taxi lane pull-throughs and six aircraft parking positions.

Fairchild AFB is traversed by a network of existing underground and surface utilities, including electrical distribution systems (both above and below ground), conduit and duct bank systems, communications infrastructure, natural gas lines, potable and firewater lines, sanitary sewer lines, and an integrated system of paved roadways and airfield surfaces. The proposed projects would utilize existing utility infrastructure, which has been intentionally oversized to accommodate future expansion. The current utility systems possess sufficient capacity to support the implementation of the Proposed Action. As the majority of the Proposed Action consists of replacement or demolition projects, no adverse impacts to existing infrastructure are anticipated. Furthermore, the remaining new construction projects are limited in scope and scale, and consistent with the ongoing development of a dynamic military installation such as Fairchild AFB. Accordingly, the Proposed Action is not expected to result in any significant effects on existing infrastructure. Impacts to each individual utility system are analyzed in the paragraphs below.

Electricity. Electric distribution infrastructure is located within 500 feet of all proposed facility and infrastructure project sites, ensuring readily accessible connections to support future development. The rehabilitation of the airfield approach lighting system would have beneficial effects to on-base electrical reliability, and no impact to demand. The remaining proposed projects, whether involving replacement of existing assets or new construction, are not expected to result in an appreciable increase in overall electrical demand across the installation. As a result, no impact to electrical demand is expected.

Natural Gas. Natural gas distribution infrastructure is located within 1,500 feet of all proposed facility and infrastructure project sites, ensuring readily accessible connections to support future development. The proposed projects, whether involving replacement of existing assets or new construction, are not anticipated to result in any appreciable increase in overall natural gas demand across the installation; no impacts to natural gas demand are expected.

Fuel. Construction of a 20,000-barrel F-24 bulk fuel storage tank would occur within the existing bulk fuel storage farm at Fairchild AFB. The tank would be integrated into the existing fuel distribution network through installation of above-ground and below-ground piping within the project footprint, enabling direct connectivity with existing tanks. The project would be beneficial to overall mission resiliency through enhanced on-site storage capacity, distribution efficiency, and redundancy. None of the other proposed projects would result in impacts to on-base fuel infrastructure or demands.

Water. Water infrastructure, potable and wastewater, is located within 1,500 feet of all proposed facility and infrastructure project sites, ensuring readily accessible connections to support future development. The proposed projects, whether involving replacement of existing assets or new construction, are not anticipated to result in any appreciable increase in overall water demand across the installation; no impacts to potable demand or wastewater generation are expected.

Construction of the Government Parking Yard and taxi lane pull-throughs and aircraft parking spots would increase impervious surface area on base. This increase in impervious surface would reduce natural infiltration and increase stormwater runoff volume and velocity, potentially placing additional demand on the existing stormwater conveyance system. However, given the capacity of the current stormwater infrastructure and compliance with stormwater management best practices outlined in the installation's SWPPP, these impacts are expected to be mitigated through appropriate design and engineering controls.

Communications. No changes to the installation's communication network are proposed.

Transportation Network. The Proposed Action would not impact the existing gate/access control network. Construction of a vehicle parking yard would result in direct impacts, which are anticipated to be beneficial by increasing available on-base parking capacity and supporting vehicle circulation efficiency. Construction of the taxi lane pull-throughs and six additional aircraft parking positions would have beneficial impacts on airfield operations by increasing aircraft staging capacity, reducing congestion, and enhancing overall airfield throughput and operational flexibility.

3.6.2.2 No Action Alternative

Under the No Action Alternative, long-term, less-than-significant adverse impacts on overall site infrastructure would be expected. Without implementation of the proposed construction, demolition, and renovation projects, existing infrastructure would remain in its current state, and necessary improvements to maintain system reliability, efficiency, and compliance with evolving mission requirements would not occur. As infrastructure continues to age, the risk of system degradation, inefficiencies, and increased maintenance demands would incrementally rise over time.

3.7 LAND USE

3.7.1 Definition of the Resource

Land use generally refers to the management and use of land by people. The attributes of land use include general land use patterns, land ownership, land management plans, and special use areas. General land use patterns characterize the types of uses within a particular area. Specific uses of land typically include residential, commercial, industrial, agricultural, military, and recreational. Land use also includes areas set aside for preservation or protection of natural resources, wildlife habitat, vegetation, or unique features. Management plans, policies, ordinances, and regulations determine the types of uses that protect specially designated or environmentally sensitive uses.

Impacts on land use would be considered significant if the proposed action violated an applicable federal, state, or local land use or zoning regulation, or created an environment incompatible with the existing land use to the extent that public health or safety is threatened.

3.7.2 Existing Conditions

The 2014 Installation Development Plan (IDP; Fairchild AFB 2014) is the primary document that future development and programming decisions at Fairchild AFB are based. As such, it identifies existing land use and presents a Future Land Use Plan to provide a general direction for future development. The IDP identifies 11 land use categories on Fairchild AFB. **Table 3.7-1** lists each category and the typical facilities associated with each.

Table 3.7-1 Fairchild AFB Land Use Categories

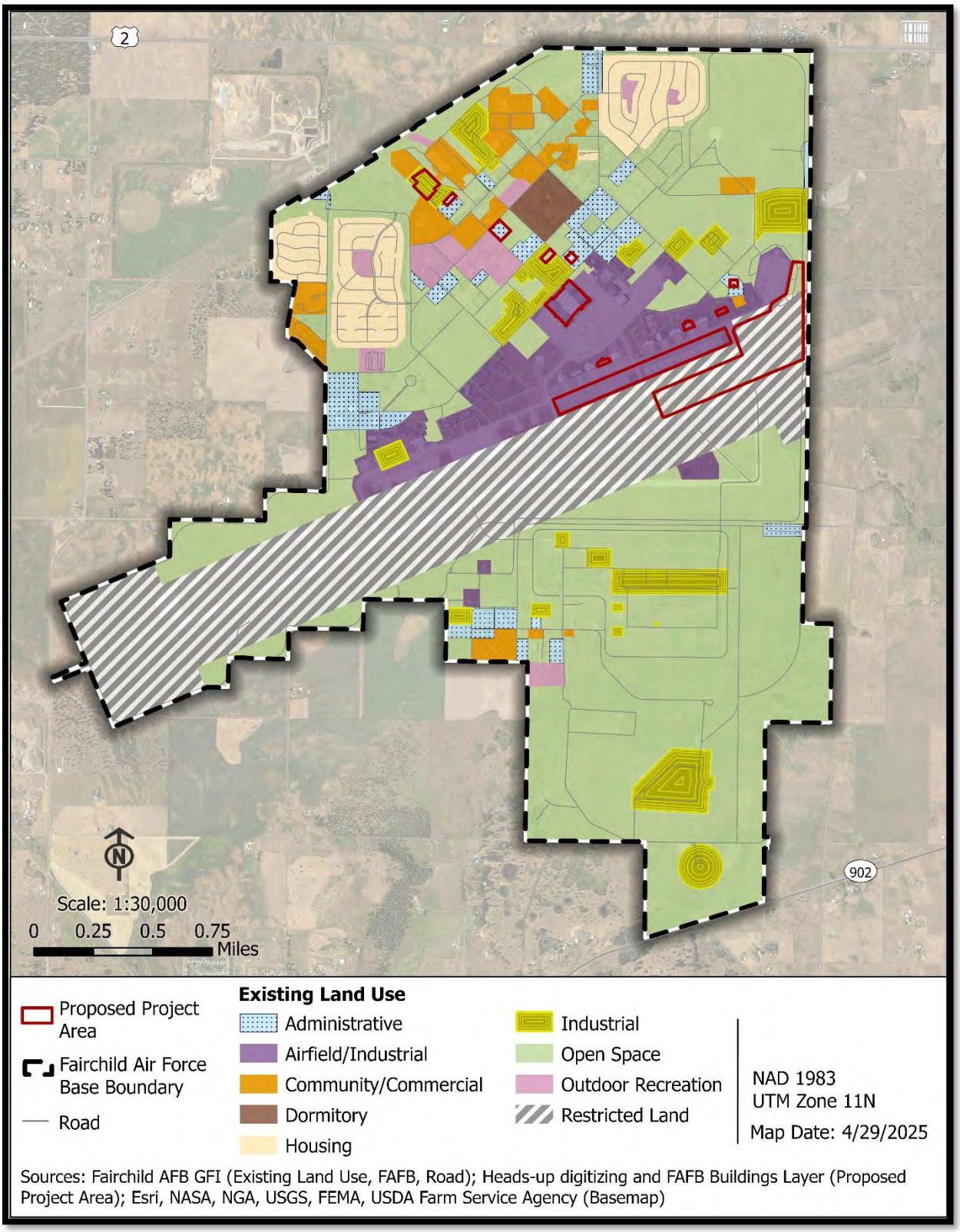
Land Use Category	Typical Facilities/Features
Administrative	Headquarters, security operations, offices
Aircraft Operations and Maintenance	Hangars, AMUs, squadron operations, tower, fire station
Community Commercial	Commissary, base exchange, club, dining facility
Community Service	Gym/recreation center, theater
Housing - accompanied	Family housing (privatized)
Housing - unaccompanied	Airman housing, visitor housing – visitor quarters, temporary lodging facilities
Industrial	Base engineering, maintenance shops, warehousing
Medical/Dental	Hospital, clinic, pharmacy
Open Space	Conservation area, buffer space
Outdoor Recreation	Outdoor courts, athletic fields, golf course, ranges

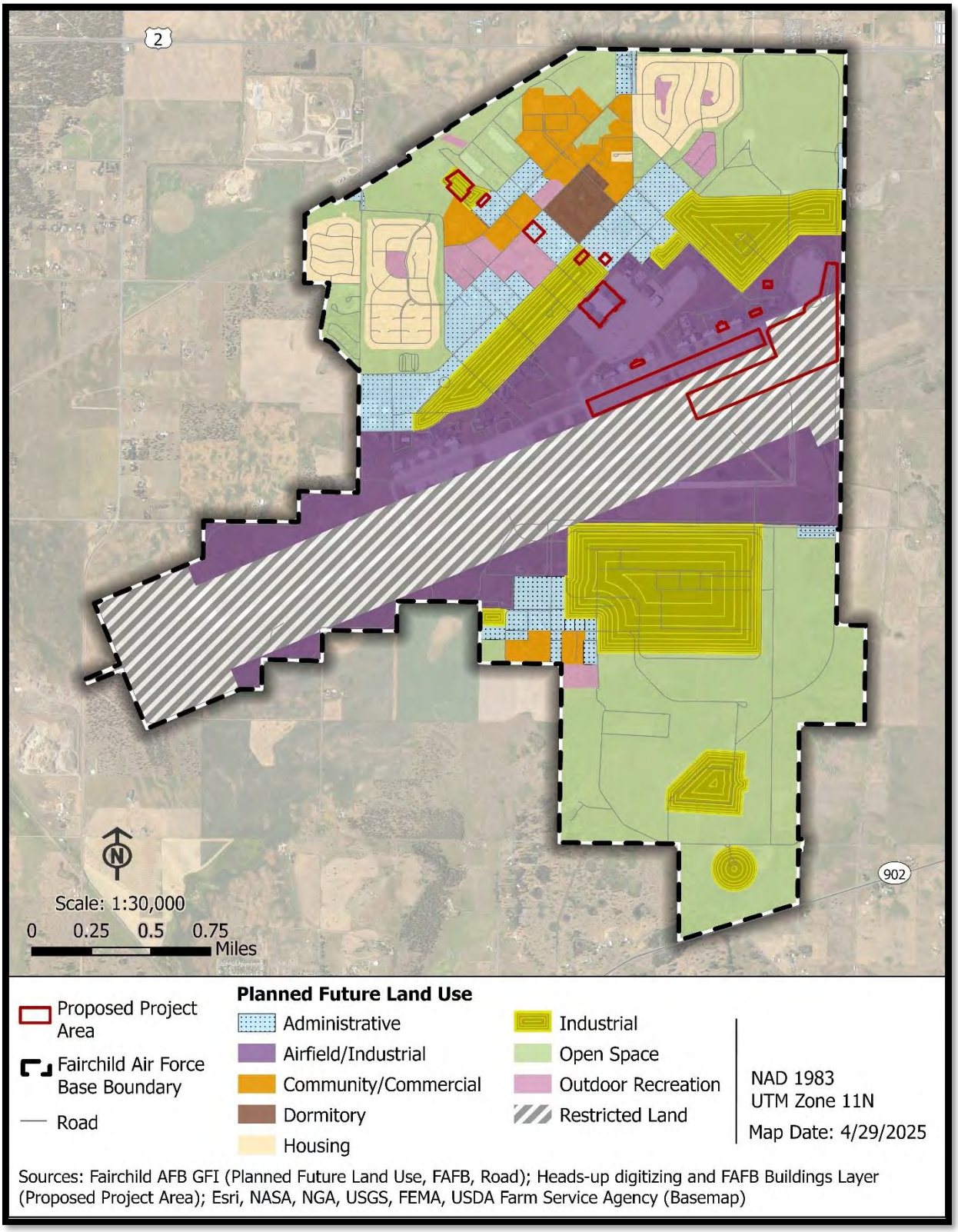
Locations north of the airfield include housing, administrative, aircraft operations and maintenance, community, and outdoor recreation areas. Locations south of the airfield are primarily designated as industrial and open space areas (**Figure 3.7-1**). According to the Future Land Use Plan (**Figure 3.7-2**), the total acreage of each land use category would increase, accept open space, which would decrease by approximately 1,100 acres (Fairchild AFB 2014). **Table 3.7-2** identifies the existing and planned future land use for each project location.

Table 3.7-2 Location of Proposed Projects in Existing and Planned Land Use Categories.

Proposed Project	Existing Land Use Category	Planned Future Land Use Category
Construct Bulk Fuel Storage Tank #3	Industrial	Industrial
Repair Approach Lighting Electrical Vaults	Restricted/Airfield and Open Space.	Restricted/Airfield and Airfield Operations and Maintenance
Renovate/Relocate LRS from B2090 to B1003	Airfield Operations and Maintenance	Airfield Operations and Maintenance
Construct Government Parking Yard	Industrial	Industrial
Renovate B1013 and Relocate AGE Maintenance from B2050	Airfield Operations and Maintenance	Airfield Operations and Maintenance
Construct an All-Weather MWD Training Area	Administrative	Administrative
Construct new CDC	Administrative	Administrative
Construct Taxi Lane Pull-Throughs and Six Parking Spots	Airfield Operations and Maintenance	Airfield Operations and Maintenance
Demolition of B2060	Administrative	Airfield Operations and Maintenance
Demolition of B2120	Administrative	Administrative

Figure 3.7-1. Existing Fairchild AFB Land Use




2
902
N
Scale: 1:30,000
0 0.25 0.5 0.75
Miles
Proposed Project Area
Fairchild Air Force Base Boundary
Road
Planned Future Land Use
Administrative
Airfield/Industrial
Community/Commercial
Dormitory
Housing
Industrial
Open Space
Outdoor Recreation
Restricted Land
NAD 1983
UTM Zone 11N
Map Date: 4/29/2025
Sources: Fairchild AFB GFI (Planned Future Land Use, FAFB, Road); Heads-up digitizing and FAFB Buildings Layer (Proposed Project Area); Esri, NASA, NGA, USGS, FEMA, USDA Farm Service Agency (Basemap)

3.7.3 Environmental Consequences

Potential impacts on land use are based on the level of sensitivity in areas potentially affected by a proposed action as well as compatibility of the action with existing conditions. In general, land use impact would be considered adverse if it includes one of the following:

- Inconsistent or noncompliant with existing land use plans or policies.
- Precludes the viability of existing land use.
- Precludes continued use or occupation of an area.
- Incompatible with adjacent land use to the extent that public health or safety is threatened.
- Conflicts with planning criteria established to ensure the safety and protection of human life and property.

3.7.3.1 Proposed Action Alternative

The proposed projects would comply and be consistent with existing and future land use plans and policies. None of the projects require a change in land use designation. They would have no effect on existing land use, either because the project would be a demolition or alteration of an existing facility with no change in use; or the project would be compatible with the existing land use designation.

The existing land use category for 7 of the proposed projects is not planned to change in the future (**Table 3.7-2**). However, the northeast section of the Repair Approach Lighting Electrical Vaults Project is currently designated as open space and is planned to be converted to Airfield Operations and Maintenance. Repairing the approach lighting electrical vaults would have no effect on the future land use designation of this area.

The existing land use category for the B2060 Demolition project area is Administrative (**Figure 3.7-1**). The planned future land use category for this area is Airfield Operations and Maintenance (**Figure 3.7-2**). However, B2060 is proposed for demolition; therefore, no impacts are expected. Additionally, the proposed site for the new CDC occurs within an Administrative land use category, which is compatible with the future planned land use category of Community (Fairchild 2014).

3.7.3.1 No Action Alternative

Under the No Action Alternative, the 10 proposed projects would not be constructed. As a result, no effects to land use would occur.

3.8 NOISE

3.8.1 Definition of the Resource

Fairchild AFB and off-base, adjacent areas would comprise the ROI for noise. Effects would be considered significant if noise from construction and operations activities violated a federal,

state, or local noise ordinance; created a noise environment incompatible with an existing land use; or produced sound that could harm people wearing safety equipment.

Sound is a physical phenomenon consisting of vibrations traveling through a medium such as air that are sensed by the human ear. Undesirable sound is noise. Noise interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities essential to a community's quality of life, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The decibel is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz are used to quantify sound frequency. The human ear responds differently to different frequencies. "A-weighing," measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of sound by humans. **Table 3.8-1** lists sounds encountered in daily life and their A-weighted decibel levels.

Table 3.8-1 Common Sounds and their Levels

Outdoor Sound	Sound Level (dBA)	Indoor Sound
Jet flyover at 1,000 ft	100	Rock band
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator

Source: Harris 1998.

The A-weighted decibel noise metric describes steady noise levels, although very few noises are, in fact, constant. Therefore, A-weighted day-night sound level (DNL) has been developed. DNL is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because it (1) averages ongoing yet intermittent noise and (2) measures total sound energy over a 24-hour period. In addition, equivalent sound level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in decibels. The Noise Control Act of 1972 directs federal agencies to comply with applicable federal, state, and local noise control regulations. In 1974, USEPA provided information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses, such as residences, schools, churches, and hospitals.

3.8.2 Existing Conditions

Maximum permissible environmental sound levels for sound sources in Spokane County are established by the WAC. Under WAC 173-60, no sound is permitted to exceed the maximum permissible exterior sound levels.

Table 3.8-2 Maximum Permissible Sound Levels

Noise Source	Receiving Property		
	Class A* (dBA)	Class B** (dBA)	Class C*** (dBA)
Class A	55	57	60
Class B	57	60	65
Class C	60	65	70

*Class A = Residential Zones: **Class B = Commercial, Office, Retail Zones; Class C = Industrial Zones;
Note: WAC 173-60

Construction and maintenance activities are generally exempt from the provisions of WAC 173-60-040, except when occurring in Class A environments between the hours of 10:00 p.m. and 7:00 a.m. Additionally, sounds from temporary construction sites resulting from construction activity are exempt. According to the Spokane Valley Municipal Code (2025), short-term construction noise is also exempt if the noise-generating activity is located more than 1,000 feet from any residence where people live and sleep, between the hours of 7:00 a.m. and 10:00.

The primary source of noise at Fairchild AFB is activities at the airfield. Notably, the Noise Control Act exempts aircraft noise from all state and local noise regulations. Other sources of noise include operation of civilian and military vehicles, lawn and landscape equipment, construction activities, and vehicle maintenance operations.

Background noise levels without airport operations (L_{eq} and DNL) were estimated for the surrounding areas using the techniques specified in the American National Standard Institute (ANSI) S12.9-2013/Part 3, *Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-Term Measurements with an Observer Present*. **Table 3.8-3** outlines the land use categories and the estimated background noise levels for nearby noise-sensitive areas. Most environments include near-constant, long-term sound sources that create a background sound level and intermittent, intrusive sources that create sound peaks that are noticeably higher than the background levels. In suburban areas, human activities make up the background sound level. The extent to which an intrusive sound affects a given receptor in the environment depends upon the degree to which it exceeds the background sound level. Both background and intrusive sound may affect the quality of life in a particular environment.

Table 3.8-3 Estimated Background Noise Levels

Land Use Category	DNL	L_{eq} (dBA)	
		Daytime	Nighttime
Suburban residential (4 people per acre)	52	53	47
Quiet commercial, industrial, and normal urban residential (20 people per acre)	59	58	52

Sources: ANSI S12.9-2013/Part 3.

The affected environment for noise comprises the areas immediately surrounding the project sites. Sensitive receptors, such as lodging facilities administrative buildings, are located at varying distances from the proposed project sites.

3.8.3 Environmental Consequences

3.8.3.1 Proposed Action Alternative

Less-than-significant effects would be expected from construction and operation of the Proposed Action, which would generate short- and long-term noise. All activities would occur on-base; therefore, noise would effect on-base personnel, facilities, and sensitive receptors.

Construction. Construction activities would generate temporary noise associated with heavy equipment operation, demolition, and general activities impacting the noise environment near work zones. Construction noise levels at the identified receptors were estimated by combining the contributions of multiple pieces of heavy construction equipment operating simultaneously with sound power levels and usage factors derived from the Federal Highway Administration's Roadway Construction Noise Model. Indoor sound levels were estimated by applying a 25-dBA reduction to account for typical building attenuation. This approach provides a reasonable approximation of expected noise conditions and allows for the evaluation of potential construction noise impacts.

Table 3.8.4 presents the estimated maximum sound levels (L_{max}) for each of the receptors during construction activities. For receptors associated with primarily indoor activities such as housing, public areas, and academic centers. indoor noise levels are the primary concern due to their potential to interfere with daily operations. Indoor noise levels for these receptors range from 35.8 dBA to 50.9 dBA at distances of 550–6,000 ft from the closest projects. At those levels, indoor environments could experience mild-to-moderate disruptions depending on the nature of the activities. Due to the nature of this type of project it was assumed all 10 projects would happen at the same time, operating 69 noise emission sources for a full analysis. Noise emission sources were tabulated from ACAM reports.

Table 3.8-4 Estimated Noise Worse Case Levels Associated with Outdoor Construction

Noise-Sensitive Receptor	Closest Project			Furthest Project		
	Distance (ft)	L_{max} (dBA)		Distance (ft)	L_{max} (dBA)	
		Outdoor	Indoor		Outdoor	Indoor
Michael Anderson Elementary	550	77.4	52.4	4,900	58.6	33.6
Residential Housing	1,330	69.9	44.9	4,100	60.1	35.1
HQ Group	750	74.8	49.8	5,560	57.5	32.5
Youth Center	923	73.0	48.0	4,200	59.9	34.9
Gymnasium	660	75.9	50.9	4,000	60.4	35.4

Source: Harris 1998.

Of the 10 proposed projects, eight have been excluded from further analysis because they are not expected to impact indoor noise quality.

The MWD Training Area and Bulk Fuel Storage Tank projects were identified for further analysis due to their closer proximity to potential receptors, including residential housing. These projects would undergo additional evaluation, particularly with regard to potential outdoor noise impacts.

Table 3.8.5 illustrates that while several buildings fall within the modeled arc of outdoor noise impacts, the expected indoor noise levels remain within acceptable limits. Furthermore, none of the buildings within this area are occupied as residences where people live and sleep, as defined by the Spokane Valley Municipal Code (2025). Residential housing units are located outside the 1,000-foot threshold and are therefore excluded from further noise impact analysis. Supporting figures and detailed acoustic modeling can be found in Appendix E.

Table 3.8-5 Estimated Noise Levels Associated with Outdoor Construction

Noise-Sensitive Receptor	Closest Project			Furthest Project		
	Distance (ft)	L_{max} (dBA)		Distance (ft)	L_{max} (dBA)	
		Outdoor	Indoor		Outdoor	Indoor
Michael Anderson Elementary	550	73.2	48.2	4,900	46.4	21.4
Residential Housing	1,330	65.6	40.6	4,100	46.4	21.4
HQ Group	750	70.5	45.5	5,560	46.4	21.4
Youth Center	923	68.8	43.8	4,200	46.4	21.4
Gymnasium	660	71.6	46.6	4,000	46.4	21.4

Source: Harris 1998.

Operations. Would have negligible effects from operational noise levels. New facility operations and support activities, such as increased vehicular traffic and maintenance, would generate operation noise. The noise from operational facilities is expected to be relatively low compared to construction noise, as the new facilities under the Proposed Action would not involve high-noise activities. They include residential and administrative buildings, training centers, and maintenance shops, generally producing low-to-moderate noise levels consistent with typical indoor environments (50–65 dBA) (ANSI S12.9-2013/Part 3). Primary noise sources may include the following:

- Mechanical equipment: Heating, ventilation, and air conditioning (HVAC) systems and backup generators.
- Indoor operations: Activities within training and administrative spaces that produce minimal external noise, with anticipated sound levels well within the range of ordinary office environments.
- Backup generators: In operation for all facilities, could produce noise levels between 65 dBA and 75 dBA at 50 ft. Given their intermittent use, backup generators would not continuously contribute to the noise environment. Facilities would likely operate the generators only during power interruptions or scheduled testing, typically limited to a few hours monthly. Where necessary, acoustic enclosures or sound-dampening materials could help reduce noise during generator operation.

- Traffic and maintenance: Slight increases in on-base traffic due to the relocation of personnel, primarily during peak operational hours. Traffic increases, however, are expected to be minimal from the less than 200 personnel. Maintenance activities for new facilities, such as landscaping and HVAC upkeep, would produce minor localized noise like existing operations on-base.

3.8.3.2 No Action Alternative

No effects on the noise environment would be expected under the No Action Alternative. The Proposed Action would not be implemented, and the overall noise environment would remain unchanged compared to existing conditions.

3.9 PROTECTION OF CHILDREN

3.9.1 Definition of the Resource

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, seeks to protect children from disproportionately incurring environmental health or safety risks that might arise as a result of federal policies, programs, activities, or standards. It recognizes scientific knowledge that demonstrates children might suffer disproportionately from environmental health and safety risks. Those risks arise because children's bodily systems are not fully developed; children breathe, drink, and eat more in proportion to their body weight than adults; their size and weight might diminish protection from standard safety features; and their behavior patterns might make them more susceptible to accidents than adults.

All of the 10 proposed projects would take place on the base. The land directly adjacent to the base boundary is largely vacant, open space. This protection of children analysis, therefore, focuses on child populations on Fairchild AFB.

3.9.2 Existing Conditions

The U.S. Census Bureau reports that Fairchild AFB, as of 2023, had a child population of 921. This represents 31 percent of the base's population, which is a higher percentage of children compared to Washington state and the United States where children account for 22 percent of the total population (**Table 3.9-1**). This reflects the number of military families that live on Fairchild AFB in the base's military family housing.

Table 3.9-1 People Under 18 Years of Age

Location	Total Population (2023)	Number of People Under Age 18	Percent of people Under Age 18
United States	332,387,540	73,645,238	22%
Washington	7,740,984	1,675,898	22%
Fairchild AFB	3,016	921	31%

Source: USCB 2023.

Children are present on Fairchild AFB as residents and visitors. Fairchild AFB has 641 privatized military family housing units located in four neighborhoods on base, with an occupancy rate of 98 to 99 percent (DAF 2023). The neighborhoods are located in the northeast and northwest corners of the base. The Michael Anderson Elementary School, part of the Medical Lake School District, is on Fairchild AFB adjacent to a family housing area in the northwest portion of the base. It serves students in kindergarten through grade 5 and had 498 students enrolled as of the 2023 – 2024 school year (NCES 2024). Fairchild AFB also operates a CDC (for children aged 6 weeks through kindergarten), and a youth center for pre-teens and teens. The base has playgrounds, an aquatic/fitness center, library, running track and field, sports fields and courts, and a theater (DAF 2023). The DAF takes precaution for child safety through using fencing and signage, limiting access to certain areas, and requiring adult supervision. The base perimeter is secured by a fence with base access limited to the controlled entry gates.

The Bulk Fuel Storage Tank and MWD Training Area projects are near the elementary school. The CDC project site is bordered by the aquatic/fitness center, baseball fields, tennis courts to the west, and the youth center and a running track and field to the north.

3.9.3 Environmental Consequences

3.9.3.1 Proposed Action Alternative

Short-term, less-than-significant adverse effects on children could occur from increased air emissions, noise, safety concerns, and traffic associated with the proposed construction, demolition, and renovation activities. The proposed Bulk Fuel Storage Tank, MWD Training Area, and CDC would occur near facilities where children typically are present. The Bulk Fuel Storage Tank and MWD Training Area, however, are already in fenced locations where access is restricted to military and DoD civilian personnel. In addition, the DAF construction contractor would be required to implement standard construction safety BMPs around all construction sites (e.g., fencing or other barriers, “No Trespassing” signs placed around the perimeter of construction sites, securing or removing construction vehicles and equipment when not in use). The contractors also would be responsible for applying dust control measures, noise control measures, and water protection measures in compliance with DAF, OSHA, and local air, noise, and water regulations. These measures would keep potential risk to on-base populations to minimal levels.

Operation of the new or renovated facilities would have no effect on the protection of children. The proposed installation development projects would be placed within discrete areas of Fairchild AFB in land uses that are functionally related to the proposed project. The new CDC would be in a compatible land use area and adjacent to compatible facilities: the youth center, athletic facilities and fields, Airmen dormitories and dining hall, and a base administrative building. Operation of the proposed facilities would have less-than-significant effects on air quality, hazardous waste and materials, noise, safety, and water resources. As discussed in Section 3.5, *Hazardous Waste and Materials*, radon is common in Spokane County, therefore, radon testing at the new CDC site is recommended and radon mitigation systems would be

installed if needed. No disproportionate adverse effects, therefore, would be expected on the protection of children.

3.9.3.2 No Action Alternative

Long-term, less-than-significant adverse effects would be expected on the protection of children. Long-term adverse effects would result from continued operation of a CDC facility that does not meet current UFCs and the 01 10 10 Design Requirements. Dependents of Airmen and Fairchild AFB civilian personnel, as well as the CDC staff, would continue to use an obsolete facility that is geographically separated from other compatible facilities on base, like the athletic fields and the youth center. Adverse effects would be expected on quality of life for Airmen and their dependents and CDC staff. CDC personnel morale, productivity, and retention could be adversely affected. The cost of maintaining the aging CDC would increase. The No Action Alternative would not meet DAF goals for mission capability, modernization, readiness, and sustainability.

3.10 SAFETY AND OCCUPATIONAL HEALTH

3.10.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for serious bodily injury or illness, death, or property damage. Safety addresses the well-being, safety, and health of members of the public, contractors, and USAF personnel during the demolition activities and facilities construction, and during subsequent operations of those facilities.

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. Hazardous activities can include construction, demolition, and many military activities.

3.10.1.1 Construction Safety

Contractors performing construction activities on USAF installations are responsible for following Air Force Occupational Safety and Health (AFOSH) standards identified within DAF Instruction 91-202 (DAF 2025a) and DAFMAN 91-203 (DAF 2025b). AFOSH standards follow OSHA regulations and activities are required to be conducted in a manner that does not increase risk to workers or the public. OSHA regulations address the health and safety of people at work and cover potential exposure to a wide range of chemical, physical, and biological hazards, and ergonomic stressors. Examples of activities that can be hazardous include transportation, maintenance and repairs, and the creation of extremely noisy environments. The regulations are designed to control these hazards by eliminating exposure to the hazards via administrative or engineering controls, substitution, use of PPE, and availability of Safety Data Sheets.

Occupational health and safety is the responsibility of each employer, as applicable. Employer responsibilities are to review potentially hazardous workplace conditions; monitor exposure to

workplace chemical (e.g., asbestos, lead, hazardous substances), physical (e.g., noise propagation, falls), and biological (e.g., infectious waste, wildlife, poisonous plants) agents, and ergonomic stressors; and recommend and evaluate controls (e.g., prevention, administrative, engineering, PPE) to ensure exposure to personnel is eliminated or adequately controlled.

Additionally, employers are responsible for ensuring a medical surveillance program is in place to perform occupational health physicals for those workers subject to the use of respiratory protection or engaged in work that involves hazardous waste, asbestos, or lead, or other work requiring medical monitoring.

3.10.1.2 Mission Safety

Mission safety on USAF installations is maintained through adherence to DoD and USAF safety policies and plans. The USAF safety program ensures the safety of personnel and the public on the installation by regulating mission activities. DAF Instruction 91-202, *The DAF Mishap Prevention Program*, implements DAF Policy Directive 91-2, *Safety Programs*, and provides guidance for implementing the safety program for all activities that occur on USAF installations.

Fairchild AFB is a secure military installation with access limited to military personnel, civilian employees, military dependents, and approved visitors. Operations and maintenance activities conducted on the installation are performed in accordance with applicable USAF safety regulations, published USAF Technical Orders, and standards prescribed by USAF occupational safety and health requirements. Adherence to industrial-type safety procedures and directives ensures safe working conditions.

Safety constraints such as explosive safety quantity-distance (ESQD) arcs and UXO probability areas (known munitions test/training areas) partially determine the suitability of areas for various land uses and, therefore, minimize safety hazards associated with mission activities. Although exposure of susceptible populations to safety hazards outside the safety constraints is unlikely, these constraints do not guarantee an absolute absence of risk. ESQD arcs are buffers around facilities that contain high-explosive munitions or flammable elements. The size and shape of an ESQD arc depends on the facility and the net explosive weight of the munitions being housed. Separations set by ESQD arcs establish the minimum distances necessary to prevent the exposure of USAF personnel and the public to potential safety hazards. The USAF protects personnel from the risks associated with UXO by controlling access to areas of concern; managing programs to remove UXO; and maintaining records of expenditures, range clearance operations, explosive ordnance disposal incidents, and areas of known or suspected UXO.

3.10.2 Existing Conditions

3.10.2.1 Construction Safety

Construction contractors at Fairchild AFB follow standard OSHA and AFOSH standards. For activities with the potential for construction workers to encounter contamination from ERP sites, it is recommended that a health and safety plan be prepared in accordance with OSHA requirements prior to commencement of construction activities. Workers performing contaminated media removal activities within ERP sites are required to have OSHA 40-hour

HAZWOPER training. In addition to this training, supervisors are required to have an OSHA Site Supervisor certification. Should contamination be encountered, all 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 hazardous waste cleanup sites are discussed in 29 CFR 1910.120 and 29 CFR Part 1926.

3.10.2.2 Mission Safety

ESQD arcs cover a substantial portion of Fairchild AFB, primarily on land that is already undevelopable because of its location within primary airfield surfaces or CZs. Areas constrained by ESQD arcs or CZs are associated with the Alert Area, Explosive Combat Aircraft parking, the Munition Storage Area (MSA), and the ends of the main runway. Fairchild AFB aggressively manages its development program to ensure that it meets explosive safety requirements (Fairchild AFB 2014). There are no electromagnetic radiation safety zones, antenna look-angles, or security CZs that affect development on Fairchild AFB (Fairchild AFB 2012a).

Range sites on Fairchild AFB contain various munitions, UXO, and Chemical Agent Identification Sets (CAIS). Although most surface occurrences have been removed, munitions, UXO, and CAIS can still be found below the ground surface.

The 92d Civil Engineer Squadron Fire and Emergency Services Flight provides 24-hour crash, structural, and emergency medical first response; technical rescue; hazardous material and weapons-of-mass-destruction incident response; and fire prevention, safety, and training/education services to Fairchild AFB.

3.10.3 Environmental Consequences

Any increase in safety risks would be considered an adverse impact on safety. Impacts associated with health and safety would be considered significant if the proposed projects were to:

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

3.10.3.1 Proposed Action Alternative

Less than significant impacts that are short-term but measurable and slight to noticeable on contractor health and safety could occur from implementation of the proposed projects. The short-term risk associated with work performed by demolition and construction contractors would slightly increase at Fairchild AFB during the normal workday, as construction and demolition activity levels would increase. However, all contractors would be required to follow and implement AFOSH safety standards to establish and maintain safety procedures. The

proposed projects would not pose new or unacceptable safety risks to installation personnel or activities at the installation but 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 resulting from an ERP site or previously unknown soil or groundwater contamination. Section 3.10.2 describes recommendations regarding workers and health and safety procedures. All structures planned for demolition and 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, and local regulations, and Fairchild AFB management plans, would result in negligible impacts on safety during implementation of the proposed projects. 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 proposed construction and demolition activities would be conducted in accordance with federal, state, and local regulations to minimize safety hazards associated with hazardous materials, waste, and substances.

Explosives and Munitions Safety

Less than significant impacts that are short-term but measurable and slight to noticeable could occur during construction and demolition activities that take place within existing QD arcs. Construction activities associated with repairing the approach lighting electrical vaults and the Taxi Lane Pull-Throughs are within a QD arc located at the southeast portion of the main runway. Contractors working within a QD arc could be exposed to an increased risk of potential explosions. To avoid potential impacts on construction workers and the installation mission, both projects should be coordinated with the installation's Safety Office to ensure no handling or transportation of materials would occur within the QD arc while construction workers are within this area. This precaution would minimize explosive safety risks to construction workers. All project areas within established QD arcs would be mission-necessary and consistent with current land uses. A waiver would be obtained from Headquarters Air Mobility Command for any projects located within QD arcs prior to commencement of the project activities.

The MWD Training Area would be constructed in the grass yard currently used for training. Construction activities would need to be coordinated with the installation Safety Office to ensure that training and project activities don't conflict with one another.

Mission Safety

Several of the proposed projects would improve mission safety on Fairchild AFB. Construction of the Bulk Fuel Storage Tank is necessary to increase fuel storage for the additional 19 aircraft added to the Fairchild AFB fleet over the past seven years. Repairing the approach lighting electrical vaults is necessary to improve the approach lighting system which floods annually and is labor intensive to maintain. The Government Parking Yard would provide a more adaptive and resilient operation and provide better combat readiness. It would enhance both the capacity and

the capability of the current mission by providing the space needed to handle all vehicle needs in a secure manner. The additional taxi lane pull-throughs would improve flight safety by eliminating current towing and pushing of aircrafts necessary for parking, which increases mission response times and causes additional wear and tear on the aircraft. Together, these projects would have a moderate beneficial impact on mission safety.

Because there would be measures in place to protect worker safety during construction, and because none of the proposed projects would hinder the ability to respond to an emergency or introduce a new health or safety risk to Fairchild AFB, no significant impacts to safety or occupational health would occur.

3.10.3.2 No Action Alternative

Under the No Action Alternative, the proposed construction projects would not occur and there would be no associated impacts to human health or safety. No facility construction, demolition, or renovation would occur, and there would be no changes in aircraft operations. However, without implementation of several of the projects, the beneficial impacts to human health and safety discussed in the preceding section would not occur.

3.11 WATER RESOURCES

3.11.1 Definition of the Resource

The ROI for water resources includes the watersheds, state-designated stream segments, groundwater aquifers, U.S. Army Corps of Engineers jurisdictional Waters of the United States and wetlands, and Federal Emergency Management Agency-designated floodplains in the area.

Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Stormwater flows, which may be exacerbated by high proportions of impervious surfaces (e.g., buildings, roads, and parking lots), are important to the management of surface water. Stormwater is also important to surface water quality because of its potential to introduce sediments and other contaminants into lakes, rivers, and streams. Groundwater consists of subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically may be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

EO 11988, *Floodplain Management*, as amended by EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, defines a floodplain as the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands. Federal, state, and local regulations generally limit development in floodplains to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

The Clean Water Act (CWA) defines a wetland as areas inundated or saturated by surface or ground water 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" (40 CFR 232.2(r)). Additionally, EO 11990 defines wetlands as areas inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.

Wetlands are of value to the sustainable management of military lands because of the ecological functions they provide in addition to training realism. Three wetland functions applicable to sustainable management are flood attenuation, groundwater recharge, and improvement of water quality by filtering sediment, nutrients, and pollutants.

The National Wetlands Inventory of the USFWS has identified and mapped most of the known wetlands in the conterminous United States, including those on military installations. DoD Instruction 4715.3 states that installations would manage for "no net loss" of wetlands. To manage wetlands properly, installations have used the National Wetlands Inventory and have conducted planning level surveys to determine the extent and location of wetlands across their installation. By identifying wetlands early in the NEPA process and utilizing a "Go/No-Go" approach where avoidance is preferred to adverse impacts, installations can avoid costly mitigation and potential delays in implementation of the Proposed Action.

3.11.2 Existing Conditions

3.11.2.1 Ground Water

Several regional aquifers supply water to the Fairchild AFB area, including the Spokane Valley-Rathdrum Prairie Aquifer, the Latah (Hangman) Creek Aquifer, and the West Plains aquifer. Shallow aquifers below Fairchild AFB are correlated with bedrock fractures filled with gravel or deep deposits of stratified sands and gravels. Groundwater monitoring suggests that the overall trend for groundwater movement is easterly and northeasterly from the base (Fairchild AFB 2024a).

Fairchild AFB sources potable water from the Fort George Wright Annex, located northeast of Spokane International Airport. The wells tap into groundwater from both the Spokane Valley-Rathdrum Prairie Aquifer and the Latah (Hangman) Creek Aquifer and feed the Geiger Reservoir. If water demand is not met by the Fort George Wright well complex, there are two backup groundwater sources for potable water supply, including an intertie with the City of Spokane (Fairchild AFB 2014). Fairchild AFB operates a potable water storage and distribution system that provides water for various uses at all the facilities on the installation (see Section 3.6.1 for a description of installation water infrastructure).

3.11.2.2 Surface Water

No floodplains occur within the boundaries of Fairchild AFB, which is located within Lower Spokane watershed and the Palouse watershed (WSDOE 2025b). The far west and northernmost portions of the installation are within the Lower Spokane watershed and the rest of the installation is within the Palouse watershed (WSDOE 2025b; Fairchild AFB 2024a). The

base is predominantly located within the Deep Creek, Upper Hog Canyon Creek, and Headwaters Deep Creek hydrologic unit code 12 watersheds, with a very small portion of the installation along South Rambo Road within the Nine Mile Reservoir-Spokane River watershed (USEPA 2019a).

There are no defined, natural stream courses on Fairchild AFB; however, there are wetlands with seasonal or persistent ponding and stormwater catchments or conveyances (Fairchild AFB 2012a). Surface hydrology on Fairchild AFB can generally be described as isolated from free-flowing surface waters within the watersheds; the nearest substantial water bodies to the installation are the Spokane River, approximately 13 miles to the east, and several lakes (Medical, West Medical, Silver, Clear, Otter, and Granite) immediately south of the installation (Fairchild AFB 2014).

The Fairchild AFB Stormwater Pollution Prevention Plan has mapped eight drainage basins on the installation and ensures that industrial activities on Fairchild do not pollute local waters (Fairchild AFB 2022a). According to USEPA, surface water bodies listed as impaired under Section 303(d) of the CWA are found approximately 4 miles south of Fairchild AFB (USEPA 2019b). No surface water occurs within the 10 project sites.

3.11.2.3 Wetlands

There are approximately 156 acres of mapped wetlands on the installation, most of which are disturbed and depressional. Ninety-six of the mapped wetlands have been delineated and occur almost exclusively in the southern portion of the installation (USFWS 2024). Extensive pavement and excavated drainages on Fairchild AFB provide some wetlands with perennial flows, while other wetlands have remained undisturbed, natural, and in varying ecological conditions (USFWS 2024). In disturbed wetlands, the area has been filled, drained, land has been graded, surface runoff has been altered, and vegetation has been altered by actions that occurred prior to the existence of Fairchild AFB (Fairchild AFB 2024a).

There are no wetlands within the 10 proposed project sites. However, there is a poor quality depressional wetland approximately 150 feet northeast of the Bulk Storage Tank #3 project area, located in a parking lot drainage ditch on the east side of POL Road (USFWS 2024). Additionally, there are two poor quality, depressional wetlands south of the runaway approximately 600 and 900 feet from the Repair Approach Lighting Electrical Vault locations.

3.11.3 Environmental Consequences

Impacts to water resources would be considered significant if the Proposed Action resulted in any of the following:

- Reduction in water availability or supply to existing users.
- Degradation of water quality or endangerment of public health by contributing pollutants to surface water or groundwater.
- Alteration of unique hydrologic characteristics.

- Permanent (unmitigated) loss of wetlands.
- Adverse effects to high-value wetlands or degradation of buffers around high-value wetlands.
- Violation of established laws or regulations that have been adopted to protect or manage water resources of the area.

3.11.3.1 Proposed Action Alternative

Groundwater. Short-term negligible adverse impacts on groundwater could occur during construction of the Proposed Action. During demolition and construction activities, accidental spills or leaks of substances such as fuels, oils, and other lubricants could result in contamination of groundwater and the shallow aquifers beneath Fairchild AFB. Risks for such spills would be reduced by standard procedures of maintaining all equipment according to manufacturer's specifications and proper storage, containment, and handling of all fuels and other potentially hazardous materials. Additionally, use of secondary containment for temporary storage of any hazardous materials and other project-specific BMPs would minimize the risk for spills or leaks.

The slight increase in impervious surface associated with the Proposed Action would cause a localized reduction in water infiltration to soil and bedrock. However, runoff would discharge into established collection points and no reduction in groundwater recharge would occur. The projects are not associated with an increase in on-base population or water usage so would have no effect on depletion rates of regional aquifers.

Surface Water. Short-term, negligible, adverse impacts on water quality could occur during construction of the Proposed Action. The Proposed Action would temporarily increase ground disturbances and exposed soils; therefore, have potential to increase sedimentation in nearby drainage ditches and depressional wetlands from storm water runoff. However, proper implementation of BMPs and adherence to the SWPPP as part of the project design would prevent adverse impacts on nearby wetlands or drainage ditches. A site-specific SWPPP would be developed in accordance with USEPA construction storm water permit regulations for construction activities that would minimize adverse impacts on water resources. No construction activities are expected to occur within or near the boundaries of existing surface waters.

The slight increase in impervious surface would result in an increase is surface runoff. However, stormwater features would be included in project design to incorporate runoff into the installation's stormwater system.

In accordance with the requirements of Section 438 of the Energy Independence and Security Act, Fairchild AFB would incorporate design elements that maintain or restore predevelopment site hydrology to the maximum extent practical, with regard to rate, volume, and duration of discharge from the site (USEPA 2009). Stormwater controls and BMPs would be incorporated into the SWPPP and a CWA Section 401 Water Quality Certification, if required, would avoid potential adverse impacts on surface waters. Additionally, based on the installation's distance

from free-flowing surface waters, it is unlikely that stormwater discharges from Fairchild AFB would reach any impaired water bodies.

Wetlands. The Proposed Action is not expected to result in adverse impacts to wetlands. The projects have been planned to avoid wetlands; the closest wetland is approximately 150 feet away from the Bulk Fuel Storage Tank #3 area. In addition, impacts to wetlands would be avoided through compliance with the requirements of the NPDES permit, project-specific SWPPP, and Erosion Sediment and Control Plan. BMPs would be used to prevent erosion and control stormwater flow and bare soils would be seeded and mulched to establish preconstruction conditions.

3.11.3.2 No Action Alternative

Under the No Action Alternative, no facility construction, demolition, or renovation would occur; therefore, no impacts to water resources would occur.

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4 CUMULATIVE EFFECTS

Cumulative effects refer to the incremental impact from an action on the environment when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time.

For the purposes of this analysis, the temporal span of the Proposed Action is assumed to be 5 years. For most resources, the spatial area for consideration of cumulative effects is Fairchild AFB, except for air quality, which considers Spokane County as the ROI.

Past activities within the geographic scope of cumulative effects have shaped the current environmental conditions of the project area. 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.

Past, present, and reasonably foreseeable future Fairchild AFB projects relevant to the cumulative effects analyses include those involving demolition, site preparation, facility/ infrastructure construction, maintenance, repair, and noise-generating activities within or near Fairchild AFB. Additionally, relevant state and county projects have also been considered for the air quality cumulative effects section. See **Table 4.1** for a full list of projects included in the analysis.

Information on future projects on Fairchild AFB was compiled based on information available at the time of this EA; however, it is anticipated that other similar types of installation development projects (construction, infrastructure, transportation, and airfield projects) will occur at Fairchild AFB over the medium- and long-range that have not yet been identified. As funding becomes available, there may be opportunities to upgrade, renovate, or expand existing mission activities or new programs.

Table 3.11 Past, Present, and Reasonably Foreseeable Projects

Fiscal Year	Project Name and Description
Fairchild AFB Construction Projects	
2027	Construct Potable Water Intertie With City Of Spokane
2028	KC-135 ADAL Aircraft Parts Warehouse, B2045
2027	Add Storm Drainage for Airfield Approach Lighting Electric Vaults
2029	Potable Water System PFAS Mitigation
2030	Air Traffic Control Tower, B1204
2028	Construct ECF, Alert Aircraft Area
2030	Replace CE and CONS Facility B2451
2029	Add Briefing/Training/Certification Space, Wing XP/Intel
2029	Install Electrical Loop Feeds
2032	KC-135 ADAL Fitness Center, B2379
2029	Enlisted Dormitory
2030	Construct Covered Refueling Area
2031	Extend Taxiways Juliet and Alpha

Fiscal Year	Project Name and Description
2030	Create New Storage Compound for DRMO
2031	West End Hangar and Alert Facility
2031	Construct New Airfield Storm Drainage Culverts
2028	Water Survival Training Facility
2029	SERE Resistance Training Complex
2026	ADAL Hydrant Fueling System, Spots 29-38
2031	ADD CDC Gross Motor Bldg; B2500
Fairchild AFB Demolition Projects	
2026	Demo Vacant Multi-Cubicle Magazine, B1448
2027	Demo Vacant Water Supply Building and Storage Tank, B1231
2028	Demo Vacant Multi-Cubicle Magazine, B1467
2029	Repair, Cnsld-Demo, Mission Support Complex B2245/8/9, Ph2 (Demo B9010)
Fairchild AFB Maintenance Projects	
2026	FY26 Maintain Airfield Striping
Fairchild AFB Repair Projects	
2028	Repair Heavy Duty and Light Duty Maintenance Apron Slabs
2028	Repair Dormitory, B2276
2027	CR-Repair Dormitory, B2276
2029	Repair Main Water Transmission Pipeline, Geiger Reservoir to Base
2029	Repair AETC Tech Training HVAC and Roof, B1256
2029	Repair, Cnsld-Demo, Mission Support Complex B2245/8/9, Ph2 (Demo B9010)
2030	Repair, Cnsld-Demo Aircraft Maintenance Complex B2050, 5 Phase Umbrella
2030	Repair, Cnsld-Demo, Aircraft Maintenance Complex B2050, Ph1 (Exterior)
2032	Repair, Cnsld-Demo, Aircraft Maintenance Complex B2050, Ph2 (1 of 2 Annexes)
2033	Repair, Cnsld-Demo, Aircraft Maintenance Complex B2050, Ph3 (2 of 2 Annexes)
2035	Repair, Cnsld-Demo, Aircraft Maintenance Complex B2050, Ph4 (Low Bay)
2030	Repair Taxiway Hotel
2031	Repair Main Water Transmission Pipeline, Ft Wright Wells to Geiger Reservoir
	Repair Windows, Doors, Vestiubles, B2451 Bay A
2031	Repair Ross DFAC, B1258
	Geiger Overflow Repair/Replacement
2028	Repair SERE Water Survival Pool, B2379
2032	Repair, Cnsld-Demo, Base Civil Engineering and CONS B2451
2033	Repair, Bury Electrical at MSA and Drop Zone
2027	Repair Dormitory, B2278
2028	Repair Dormitory, B2279
2033	Repair Security Forces B2071
2035	Repair Taxiways A, C, F
2030	Repair Rightsize Twy P from Twy A to TW C
2027	Renovate Thorpe-Rambo Gate
2030	Renovate BDOC into Combined ECC, B2071
2033	Renovate Vehicle Wash rack, B2115
2028	Install Water Main Utility Vaults and Study Condition
Fairchild AFB Service Projects	
2027	Clear Lake Boundary Survey
2026	AE Support/Survey - Water Main Leak Detection (Geiger Reservoir to Base)
2028	AE Fitness Pool Area
Fairchild AFB – Other Projects	
2027	Outdoor Rec Service Counter, B2447
2027	PCR - Water Survival Training Facility

Fiscal Year	Project Name and Description
2027	Maintain Fairchild Highway Storm Drainage 15700
2028	Craig Road Boundary Survey
2028	Mitigate PFAS in Drinking Water
Relevant State and Local Projects	
Present	North Spokane Corridor Project - This project will create a 60-mile per hour, 10.5-mile-long north/south limited access facility along US 395 that will connect US 2 to the north with I-90 to the south.
Present	Spokane International Airport Construction Projects • Upgrades to the Spokane International Airport include: • TREX Program: Concourse C Expansion Project, • West Terminal Ramp Expansion & New Parallel Taxi lane Project, • Flint Road Intersection Improvements, and • C Concourse Lot Expansion.
2025-2028	S. Barker Road, Appleway to Sprague Project - This project will construct a three-lane urban section with bike lanes, sidewalks, and storm water facilities.
2025-2028	US 195 and Meadow Lane Intersection Improvement Project - The project will construct a J-turn at the north end, relocate the west leg of the Meadow Lane intersection to be in line with Eagle Ridge Boulevard, and add a southbound right turn lane and a southbound acceleration lane at the new Eagle Ridge intersection.
2025-2028	Garfield Road/US 2 Roundabout Project - A dual lane roundabout will be constructed at the intersection of US 2 and Garfield Road to multimodal enhancements and ADA upgrades.
2025-2028	N. Colville Reconstruction Project - includes a full roadway reconstruction and widening of driving surface, bike lane and on street parking, sidewalks to ADA Standards, storm water disposal upgrades and street lighting improvements
2025-2028	Wellesley Avenue, Freya to Havana - This is a full reconstruction project that includes roadway widening for turn lanes, new sidewalk, ADA ramps, lighting, drainage improvements, and bike facilities
2025-2028	US 395/NSC Sprague Ave to Spokane River (Phase 2 and 3) - This project provides for the improvement of the North Spokane Corridor from Milepost 158.03 to Ermina Ave by constructing two lanes in each direction by grading, drainage, paving, structures, erosion control, traffic control, site preparation and other work

4.1 AIR QUALITY

The State of Washington accounts for impacts of all past, present, and reasonably foreseeable future emissions during the development of the State Implementation Plan (STIP). The state accounts for all significant stationary, area, and mobile emission sources in the development of the STIP. Emissions generated by the Proposed Action would occur within an attainment area. Additionally, the construction, demolition, maintenance, and repair activities associated with the Proposed Action and projects listed in **Table 4.1** would result in short-term, intermittent increases in air pollutant levels during construction. Given the size of the individual planned projects and the short-term nature of construction, significant effects to air quality are not anticipated, even when considered cumulatively.

4.2 BIOLOGICAL RESOURCES

The Proposed Action would result in short-term negligible impacts to biological resources and is therefore not expected to contribute to long-term cumulative effects to biological resources when combined with the projects listed in **Table 4.1**.

4.3 CULTURAL RESOURCES

The Proposed Action would not result in adverse effects to cultural resources and therefore, is not expected to contribute to long-term cumulative effects to when combined with the projects listed in **Table 4.1**. Past projects at the installation have been conducted in accordance with Section 106 of the NHPA to mitigate adverse effects. Any present and/or future actions at the installation would also require implementation and completion of the Section 106 process. By adhering to the Section 106 process for all actions, no cumulative impacts would be expected.

4.4 HAZARDOUS MATERIALS AND WASTE

For all projects included in **Table 4.1**, the quantity of hazardous materials used during construction and demolition activities would be minimal and their use would be short term. Contractors would be responsible for the management of hazardous waste, which would be handled in accordance with federal, state, and USAF regulations. They would be required to use environmental protection measures to prevent the release of hazardous materials, ensure a potential release does not result in soil or groundwater contamination, and follow appropriate procedures for handling, storage, transportation, and disposal of hazardous substances in accordance with applicable federal, state, and local regulations. With these protocols in place, risks associated with hazardous materials and waste and subsequent environmental contamination would be minimized.

The projects in **Table 4.1** would be designed to avoid disturbance or interference with cleanup actions and impacts to monitoring and/or remediation wells/equipment at contaminated sites. Additionally, the Proposed Action would remove ACM, LBP, and PCB-contaminated materials from the AFB and result in minor long-term, beneficial effects. Therefore, the Proposed Action, when combined with the projects listed in **Table 4.1** is not expected to contribute to long-term cumulative effects from hazardous materials and waste

4.5 INFRASTRUCTURE AND UTILITIES

The Proposed Action would result in beneficial effects associated with the construction of new, efficient facilities; the demolition of old, inefficient facilities; and the addition of the Bulk Fuel Storage Tank. As a result, it is not expected to contribute to long-term cumulative effects when combined with the projects listed in **Table 4.1**.

4.6 LAND USE

The Proposed Action would not result in impacts to existing and planned land use on Fairchild AFB and is therefore not expected to contribute to long-term cumulative effects when combined with the projects listed in **Table 4.1**.

4.7 NOISE

The Proposed Action would result in short-term, less than significant impacts during construction and negligible impacts during operations and is therefore not expected to contribute to long-term cumulative effects when combined with the projects listed in **Table 4.1**.

4.8 PROTECTION OF CHILDREN

The projects listed in **Table 4.1** could result in cumulative increases in air emissions, noise, traffic, and erosion and runoff into surface waters. However, these projects, along with the Proposed Action, would be required to comply with applicable federal and state air quality, noise, and water quality regulations and established industry-accepted safety practices to protect workers and the public. Therefore, significant cumulative effects on the protection of children are not anticipated.

4.9 SAFETY AND OCCUPATIONAL HEALTH

For all projects listed in **Table 4.1** that occur within the ESQD arcs and UXO probability areas, safety risks would be minimized through coordination with the installation Safety Office. With established protocols in place, health and safety risks from all planned projects, even when considered cumulatively, would be reduced to acceptable levels. The removal of ACM, LBP, and PCB-contaminated materials, and other planned actions that improve safety would result in a long-term, beneficial impact on safety and occupational health for personnel and residents at Fairchild AFB, which would offset some health and safety risks associated with past and present actions on the installation. Therefore, no significant cumulative impacts to safety and occupational health are anticipated.

4.10 WATER RESOURCES

The Proposed Action would result in short-term negligible impacts to ground and surface water; however, no impacts to wetlands would occur. All projects listed in **Table 4.1** would be required to comply with Sections 401 and 404 of the CWA and other federal, state and AF regulations pertaining to water resources. Therefore, the Proposed Action is not expected to contribute to long-term cumulative effects when combined with the projects listed in **Table 4.1**.

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LjA.#eyJhcHBpZCI6NzAsInN0ZXBzIjpbMSwyOSwyNSwzMSwyNiwyNywzMF0sImRhdGEiOltbIlRhYmxlSWQiLCI1MzMiXSxbIk1ham9yX0FyZWEiLCI1Il0sWyJTdGF0ZSIsWyI1Il1dLFsiQXJlYSIsWyI0NDA2MCJdXSxbIlN0YXRpc3RpYyIsWyItMSJdXSxbIlVuaXRfb2ZfbWVhc3VyZSIsIkxldmVscyJdLFsiWWVhciIsWyIyMDIzIl1dLFsiWWVhckJlZ2luIiwiLTEiXSxbIlIYXJfRW5kIiwiLTEiXV19.

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Fairchild Air Force Base	Energy Manager	Trae Martin
Fairchild Air Force Base	Public Affairs Chief	Lieutenant Sidney Walters
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Air Force Civil Engineer Center, Fairchild Air Force Base	Remedial Project Manager	Mark Henry
Fairchild Air Force Base	Bioenvironmental Engineering Flight Commander	Major Cason Watkins

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APPENDIX A
Public Notification

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PUBLIC NOTICE

NOTICE OF AVAILABILITY

DRAFT ENVIRONMENTAL ASSESSMENT AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT FOR INSTALLATION DEVELOPMENT AT FAIRCHILD AIR FORCE BASE (AFB), WASHINGTON

An Environmental Assessment (EA) has been prepared to analyze the potential impacts of implementing ten planned installation development projects at Fairchild AFB. The purpose of the projects is to provide infrastructure and functionality improvements necessary to support the mission of the 92nd Air Refueling Wing and Fairchild AFB mission partners. The proposed projects include construction of new facilities and infrastructure, facility renovations, infrastructure improvements, and building demolition.

The EA, prepared in accordance with the National Environmental Policy Act (NEPA), as amended, evaluates potential impacts of the alternative actions on the environment, including the No Action Alternative. Based on this analysis, the Air Force has prepared a proposed Finding of No Significant Impact (FONSI).

The Draft EA and proposed FONSI, dated September 2025, are available for review on the Fairchild AFB website at: https://www.fairchild.af.mil/Information/Environmental-Hub/

You are encouraged to submit comments through October 14, 2005. Comments should be provided to 92 ARW Public Affairs, 1 East Bong Street, Suite 28, Fairchild AFB, WA 99011, or by email to: 92arw.pa@us.af.mil

PRIVACY ADVISORY NOTICE

Public comments on this Draft EA are requested pursuant to NEPA, 42 United States Code 4321, et seq. All written comments received during the comment period will be made available to the public and considered during the final EA preparation. Providing private address information with your comment is voluntary and such personal information will be kept confidential unless release is required by law. However, address information will be used to compile the project mailing list and failure to provide it will result in your name not being included on the mailing list.

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APPENDIX B
Air Conformity Applicability Model Results

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:

Base: FAIRCHILD AFB
State: Washington
County(s): Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: 92nd Air Refueling Wing at Fairchild Air Force Base (AFB)

c. Project Number/s (if applicable): Several

d. Projected Action Start Date: 1 / 2026

e. Action Description:

The Purpose of implementing the ten installation improvement projects (Proposed Action) is to provide infrastructure and functionality improvements required to support the missions of the 92 Air Refueling Wing and Fairchild AFB mission partners.

DESC2702 Construct Bulk Fuel Storage Tank #3 48,138 1 48,138 9,628 12,035 4,814 74,614
GJKZ231001 Repair Approach Lighting Electrical Vaults 750,000 1 750,000 150,000 75,000 90,000
GJKZ2210111 Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003 31,378.00 1.00 31378.00 2400.00 3000.00 1200.00 37978.00
GJKZ251005 Add Government Parking Yard, B2115 12,000 1 12,000 2,400 3,000 1,200 18,600
GJKZ251001 Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013 30000 1 30,000 6,000 7,500 3,000 46,500
GJKZ241009 Construct All Weather Military Working Dog (MWD) Training Area 10000 1 10,000 2,000 3,000 2,500 1,000 18,500
GJKZ223003 Replace Child Development Center (CDC) B2500 40,000 1 40,000 8,000 12,000 10,000 4,000 74,000
GJKZ253001 Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55 518,000 1 518,000 103,600 129,500 51,800 802,900
GJKZ253xxx Demolition of B2060 14,575 1 14,575 2,915 3,644 1,458 22,591
GJKZ253xxx Demolition of B2120 34,168 2 17,084 3,417 4,271 1,708 26,480

f. Point of Contact:

Name: Dewey Cooper
Title: Sr
Organization: Tetra Tech
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving “steady state” (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action’s potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action’s net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	12.925	250	No
NOx	16.194	250	No
CO	14.252	250	No
SOx	0.031	250	No
PM 10	216.239	250	No
PM 2.5	0.534	250	No
Pb	0.000	25	No
NH3	0.224	250	No

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.418	250	No
NOx	1.294	250	No
CO	0.414	250	No
SOx	0.017	250	No
PM 10	0.048	250	No
PM 2.5	0.048	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2028 - (Steady State)

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.418	250	No
NOx	1.294	250	No
CO	0.414	250	No
SOx	0.017	250	No
PM 10	0.048	250	No
PM 2.5	0.048	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Sr — Mar 27 2025

Name, Title — **Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to estimate GHG emissions associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the GHG emissions analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:

Base: FAIRCHILD AFB
State: Washington
County(s): Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: 92nd Air Refueling Wing at Fairchild Air Force Base (AFB)

c. Project Number/s (if applicable): Several

d. Projected Action Start Date: 1 / 2026

e. Action Description:

The Purpose of implementing the ten installation improvement projects (Proposed Action) is to provide infrastructure and functionality improvements required to support the missions of the 92 Air Refueling Wing and Fairchild AFB mission partners.

DESC2702 Construct Bulk Fuel Storage Tank #3 48,138 1 48,138 9,628 12,035 4,814 74,614
GJKZ231001 Repair Approach Lighting Electrical Vaults 750,000 1 750,000 150,000 75,000 90,000
GJKZ2210111 Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003 31,378.00 1.00 31378.00 2400.00 3000.00 1200.00 37978.00
GJKZ251005 Add Government Parking Yard, B2115 12,000 1 12,000 2,400 3,000 1,200 18,600
GJKZ251001 Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013 30000 1 30,000 6,000 7,500 3,000 46,500
GJKZ241009 Construct All Weather Military Working Dog (MWD) Training Area 10000 1 10,000 2,000 3,000 2,500 1,000 18,500
GJKZ223003 Replace Child Development Center (CDC) B2500 40,000 1 40,000 8,000 12,000 10,000 4,000 74,000
GJKZ253001 Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55 518,000 1 518,000 103,600 129,500 51,800 802,900
GJKZ253xxx Demolition of B2060 14,575 1 14,575 2,915 3,644 1,458 22,591
GJKZ253xxx Demolition of B2120 34,168 2 17,084 3,417 4,271 1,708 26,480

f. Point of Contact:

Name: Dewey Cooper
Title: Sr
Organization: Tetra Tech
Email:
Phone Number:

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action's start through the action's "steady state" (SS, net gain/loss in emission stabilized and the action is fully implemented) of emissions.

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GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected steady state of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2026	5,440	0.16795774	0.492365	5,575	68,039	No
2027	482	0.00921733	0.00094725	484	68,039	No
2028 [SS Year]	482	0.00921733	0.00094725	484	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2026	70,941,434	267,825	20,264	83,810,437
2027	70,941,434	267,825	20,264	83,810,437
2028 [SS Year]	70,941,434	267,825	20,264	83,810,437

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2026	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2027	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2028 [SS Year]	5,136,454,179	25,626,912	1,500,708	6,251,695,230

GHG Relative Significance Assessment:

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A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (Rtba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where the action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2026-2028	State Total	212,824,302	803,474	60,791	251,431,312
2026-2028	U.S. Total	15,409,362,537	76,880,735	4,502,123	18,755,085,689
2026-2028	Action	6,404	0.186392	0.494259	6,543
Percent of State Totals		0.00300923%	0.00002320%	0.00081304%	0.00260211%
Percent of U.S. Totals		0.00004156%	0.00000024%	0.00001098%	0.00003488%

From a global context, the action's total GHG percentage of total global GHG for the same time period is: 0.00000467%.*

* Global value based on the U.S. emitting 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, https://www.c2es.org/content/international-emissions).

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: FAIRCHILD AFB
State: Washington
County(s): Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: 92nd Air Refueling Wing at Fairchild Air Force Base (AFB)

- Project Number/s (if applicable): Several

- Projected Action Start Date: 1 / 2026

- Action Purpose and Need:

Construct Bulk Fuel Storage Tank #3,
Repair Approach Lighting Electrical Vaults
Renovate/Relocate Logistics Readiness Squadron (LRS) from Building (B) 2090 to 8 B1003
Add Government Parking Yard,
Renovate/Relocate Aircraft Ground Equipment (AGE) Maintenance from B2050 to 11 B1013
Construct All Weather Military Working Dog (MWD) Training Area,
Replace Child Development Center (CDC) B2500,
Construct Taxi Lane Pull-Throughs and Six Parking Spots
Demolition of B2060,
Demolitions of B2120.

- Action Description:

The Purpose of implementing the ten installation improvement projects (Proposed Action) is to provide infrastructure and functionality improvements required to support the missions of the 92 Air Refueling Wing and Fairchild AFB mission partners.

DESC2702 Construct Bulk Fuel Storage Tank #3 48,138 1 48,138 9,628 12,035 4,814 74,614
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GJKZ251005 Add Government Parking Yard, B2115 12,000 1 12,000 2,400 3,000 1,200 18,600
GJKZ251001 Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013 30000 1 30,000 6,000 7,500 3,000 46,500
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- Point of Contact

Name: Dewey Cooper
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DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Report generated with ACAM version: 5.0.24a

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Cumlative Affect all Projects Combined
3.	Heating	Heating
4.	Emergency Generator	Gensets
5.	Tanks	Tank New Dog Training
6.	Tanks	Child Center Tank
7.	Tanks	Bulk Fuels

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Cumlative Affect all Projects Combined

- Activity Description:
See assumption Spreadsheet

- Activity Start Date
Start Month: 1
Start Month: 2026

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2026

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	12.924503
SO_x	0.031357
NO_x	16.194449
CO	14.252263

Pollutant	Total Emissions (TONs)
PM 10	216.238503
PM 2.5	0.533645
Pb	0.000000
NH_3	0.224124

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.185142
N_2O	0.542739

Pollutant	Total Emissions (TONs)
CO_2	5996.362054
CO_2e	6145.369940

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

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- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2026

- Phase Duration
Number of Month: 3
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 7874300
Height of Building to be demolished (ft): 30

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Excavators Composite	3	8
Rubber Tired Dozers Composite	2	8
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.41257	0.00743	3.52633	4.31513	0.08509	0.07828
Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.39317	0.00542	3.40690	4.22083	0.09860	0.09071
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.35280	0.00491	3.22260	2.72624	0.14205	0.13069

Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02330	0.00466	574.35707	576.32812
Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02381	0.00476	587.02896	589.04350
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02160	0.00432	532.54993	534.37751
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02149	0.00430	529.70686	531.52468

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.26748	0.00229	0.13208	3.80816	0.02252	0.00768	0.04964
LDGT	0.22882	0.00289	0.19258	3.56975	0.02342	0.00873	0.04201
HDGV	0.69676	0.00628	0.63694	9.50200	0.04929	0.02435	0.08690
LDDV	0.13616	0.00123	0.17006	5.22067	0.02273	0.00765	0.01627
LDDT	0.19724	0.00125	0.31278	3.72671	0.02265	0.00884	0.01614
HDDV	0.13228	0.00431	2.66820	1.55432	0.15758	0.07776	0.06656
MC	2.19206	0.00293	0.72516	11.71757	0.03096	0.02102	0.05464

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01650	0.00495	314.31804	316.09285
LDGT	0.01729	0.00710	398.04127	400.40735
HDGV	0.04851	0.02424	863.02608	870.80820
LDDV	0.05976	0.00067	364.44097	366.29135
LDDT	0.03867	0.00098	372.50759	373.84924
HDDV	0.03373	0.16413	1282.06602	1326.50423
MC	0.10002	0.00289	395.00197	398.56837

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment

WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2026

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- Phase Duration
Number of Month: 12
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 1244000
Amount of Material to be Hauled On-Site (yd^3): 10000
Amount of Material to be Hauled Off-Site (yd^3): 5000

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.39317	0.00542	3.40690	4.22083	0.09860	0.09071
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.31292	0.00490	2.52757	3.39734	0.14041	0.12918
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.28160	0.00487	2.73375	3.50416	0.15811	0.14546
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.35280	0.00491	3.22260	2.72624	0.14205	0.13069
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19606	0.00488	1.74061	1.53912	0.06788	0.06245
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02381	0.00476	587.02896	589.04350
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02153	0.00431	530.81500	532.63663
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.54121	529.35159
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.54993	534.37751
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02145	0.00429	528.85412	530.66901
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.70686	531.52468

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.26748	0.00229	0.13208	3.80816	0.02252	0.00768	0.04964
LDGT	0.22882	0.00289	0.19258	3.56975	0.02342	0.00873	0.04201
HDGV	0.69676	0.00628	0.63694	9.50200	0.04929	0.02435	0.08690
LDDV	0.13616	0.00123	0.17006	5.22067	0.02273	0.00765	0.01627
LDDT	0.19724	0.00125	0.31278	3.72671	0.02265	0.00884	0.01614
HDDV	0.13228	0.00431	2.66820	1.55432	0.15758	0.07776	0.06656
MC	2.19206	0.00293	0.72516	11.71757	0.03096	0.02102	0.05464

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01650	0.00495	314.31804	316.09285
LDGT	0.01729	0.00710	398.04127	400.40735
HDGV	0.04851	0.02424	863.02608	870.80820
LDDV	0.05976	0.00067	364.44097	366.29135
LDDT	0.03867	0.00098	372.50759	373.84924
HDDV	0.03373	0.16413	1282.06602	1326.50423
MC	0.10002	0.00289	395.00197	398.56837

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD}$ = (20 * ACRE * WD) / 2000

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2026

- Phase Duration
Number of Month: 12
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 145000
Amount of Material to be Hauled On-Site (yd^3): 1000
Amount of Material to be Hauled Off-Site (yd^3): 500

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.39317	0.00542	3.40690	4.22083	0.09860	0.09071
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.45335	0.00542	3.58824	4.59368	0.11309	0.10404
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02381	0.00476	587.02896	589.04350
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02385	0.00477	587.87714	589.89459
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.70686	531.52468

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.26748	0.00229	0.13208	3.80816	0.02252	0.00768	0.04964
LDGT	0.22882	0.00289	0.19258	3.56975	0.02342	0.00873	0.04201
HDGV	0.69676	0.00628	0.63694	9.50200	0.04929	0.02435	0.08690
LDDV	0.13616	0.00123	0.17006	5.22067	0.02273	0.00765	0.01627
LDDT	0.19724	0.00125	0.31278	3.72671	0.02265	0.00884	0.01614
HDDV	0.13228	0.00431	2.66820	1.55432	0.15758	0.07776	0.06656
MC	2.19206	0.00293	0.72516	11.71757	0.03096	0.02102	0.05464

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01650	0.00495	314.31804	316.09285
LDGT	0.01729	0.00710	398.04127	400.40735
HDGV	0.04851	0.02424	863.02608	870.80820
LDDV	0.05976	0.00067	364.44097	366.29135
LDDT	0.03867	0.00098	372.50759	373.84924
HDDV	0.03373	0.16413	1282.06602	1326.50423
MC	0.10002	0.00289	395.00197	398.56837

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2026

- Phase Duration

Number of Month: 12

Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information

Building Category: Office or Industrial
Area of Building (ft^2): 1473000
Height of Building (ft): 30
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.19758	0.00487	1.83652	1.63713	0.07527	0.06925
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.24594	0.00487	2.34179	3.57902	0.11182	0.10287
Generator Sets Composite [HP: 14] [LF: 0.74]						

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.53947	0.00793	4.32399	2.85973	0.17412	0.16019
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.46472	0.00735	3.57020	4.49314	0.09550	0.08786

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.46069	529.27080
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.09717	528.90603
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.32694	570.27730
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.70686	531.52468
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.29068	570.24091

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.26748	0.00229	0.13208	3.80816	0.02252	0.00768	0.04964
LDGT	0.22882	0.00289	0.19258	3.56975	0.02342	0.00873	0.04201
HDGV	0.69676	0.00628	0.63694	9.50200	0.04929	0.02435	0.08690
LDDV	0.13616	0.00123	0.17006	5.22067	0.02273	0.00765	0.01627
LDDT	0.19724	0.00125	0.31278	3.72671	0.02265	0.00884	0.01614
HDDV	0.13228	0.00431	2.66820	1.55432	0.15758	0.07776	0.06656
MC	2.19206	0.00293	0.72516	11.71757	0.03096	0.02102	0.05464

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01650	0.00495	314.31804	316.09285
LDGT	0.01729	0.00710	398.04127	400.40735
HDGV	0.04851	0.02424	863.02608	870.80820
LDDV	0.05976	0.00067	364.44097	366.29135
LDDT	0.03867	0.00098	372.50759	373.84924
HDDV	0.03373	0.16413	1282.06602	1326.50423
MC	0.10002	0.00289	395.00197	398.56837

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2026

- Phase Duration
Number of Month: 12
Number of Days: 0

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 1000000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.26748	0.00229	0.13208	3.80816	0.02252	0.00768	0.04964
LDGT	0.22882	0.00289	0.19258	3.56975	0.02342	0.00873	0.04201
HDGV	0.69676	0.00628	0.63694	9.50200	0.04929	0.02435	0.08690
LDDV	0.13616	0.00123	0.17006	5.22067	0.02273	0.00765	0.01627
LDDT	0.19724	0.00125	0.31278	3.72671	0.02265	0.00884	0.01614
HDDV	0.13228	0.00431	2.66820	1.55432	0.15758	0.07776	0.06656
MC	2.19206	0.00293	0.72516	11.71757	0.03096	0.02102	0.05464

- Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01650	0.00495	314.31804	316.09285
LDGT	0.01729	0.00710	398.04127	400.40735
HDGV	0.04851	0.02424	863.02608	870.80820

LDDV	0.05976	0.00067	364.44097	366.29135
LDDT	0.03867	0.00098	372.50759	373.84924
HDDV	0.03373	0.16413	1282.06602	1326.50423
MC	0.10002	0.00289	395.00197	398.56837

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2026

- Phase Duration
Number of Month: 12
Number of Days: 0

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 15000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.55280	0.00854	4.19778	3.25481	0.16332	0.15025
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.23717	0.00486	2.53335	3.43109	0.12904	0.11872
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.54202	0.00541	3.61396	4.09268	0.15387	0.14156
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02313	0.00463	570.16326	572.11992
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02133	0.00427	525.80405	527.60847
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02381	0.00476	586.91372	588.92786
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.70686	531.52468

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.26748	0.00229	0.13208	3.80816	0.02252	0.00768	0.04964
LDGT	0.22882	0.00289	0.19258	3.56975	0.02342	0.00873	0.04201
HDGV	0.69676	0.00628	0.63694	9.50200	0.04929	0.02435	0.08690
LDDV	0.13616	0.00123	0.17006	5.22067	0.02273	0.00765	0.01627
LDDT	0.19724	0.00125	0.31278	3.72671	0.02265	0.00884	0.01614
HDDV	0.13228	0.00431	2.66820	1.55432	0.15758	0.07776	0.06656
MC	2.19206	0.00293	0.72516	11.71757	0.03096	0.02102	0.05464

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01650	0.00495	314.31804	316.09285
LDGT	0.01729	0.00710	398.04127	400.40735
HDGV	0.04851	0.02424	863.02608	870.80820
LDDV	0.05976	0.00067	364.44097	366.29135
LDDT	0.03867	0.00098	372.50759	373.84924
HDDV	0.03373	0.16413	1282.06602	1326.50423
MC	0.10002	0.00289	395.00197	398.56837

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
VOC_P = (2.62 * PA) / 43560 / 2000

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)
2000: Conversion Factor square pounds to TONs (2000 lb / TON)

3. Heating

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Heating

- Activity Description:
Heating

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

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Pollutant	Emissions Per Year (TONs)
VOC	0.024042
SO_x	0.002623
NO_x	1.223960
CO	0.367188

Pollutant	Emissions Per Year (TONs)
PM 10	0.033222
PM 2.5	0.033222
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.009879
N_2O	0.000988

Pollutant	Emissions Per Year (TONs)
CO_2	524.637340
CO_2e	525.175751

3.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 111000
Type of fuel: Natural Gas
Type of boiler/furnace: Heavy Industrial (100 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0827

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

3.3 Heating Emission Factor(s)

- Heating Criteria Pollutant Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
5.5	0.6	280	84	7.6	7.6		

- Heating Greenhouse Gasses Pollutant Emission Factors (lb/1000000 scf)

CH_4	N_2O	CO_2	CO_2e
2.26	0.226	120019	120143

3.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
$FC_{HER} = HA * EI / HV / 1000000$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year
$HE_{POL} = FC * EF_{POL} / 2000$

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption

EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Gensets

- Activity Description:
3 Gents for the new buildings only assuming that other building have exsisting Gemsets

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.016949
SO_x	0.014276
NO_x	0.069863
CO	0.046656

Pollutant	Emissions Per Year (TONs)
PM 10	0.015248
PM 2.5	0.015248
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000281
N_2O	0.000056

Pollutant	Emissions Per Year (TONs)
CO_2	6.986250
CO_2e	8.079750

4.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 3

- Default Settings Used: Yes

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135 (default)
Average Operating Hours Per Year (hours): 30 (default)

4.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

4.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

5. Tanks

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Tank New Dog Training

- Activity Description:
Tank New Dog Training

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.000950
SO_x	0.000000
NO_x	0.000000
CO	0.000000

Pollutant	Emissions Per Year (TONs)
PM 10	0.000000
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000000

Pollutant	Emissions Per Year (TONs)
CO_2	0.000000

N_2O	0.000000		CO_2e	0.000000

5.2 Tanks Assumptions

- Chemical

Chemical Name:	Fuel oil no. 2
Chemical Category:	Petroleum Distillates
Chemical Density:	7.1
Vapor Molecular Weight (lb/lb-mole):	130
Stock Vapor Density (lb/ft^3):	0.000129553551395334
Vapor Pressure:	0.0055
Vapor Space Expansion Factor (dimensionless):	0.068

- Tank

Type of Tank:	Horizontal Tank
Tank Length (ft):	10
Tank Diameter (ft):	10
Annual Net Throughput (gallon/year):	2000

5.3 Tank Formula(s)

- Vapor Space Volume

$VSV = (PI / 4) * D^2 * L / 2$

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)
2: Convertion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

$VVSF = 1 / (1 + (0.053 * VP * L / 2))$

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
L: Tank Length (ft)

- Standing Storage Loss per Year

$SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000$

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

$NT = (7.48 * ANT) / ((PI / 4.0) * D * L)$

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput

PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)

- Working Loss Turnover (Saturation) Factor per Year
WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year
WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

6. Tanks

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Child Center Tank

- Activity Description:
Genset Tank

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.000950
SO_x	0.000000
NO_x	0.000000
CO	0.000000

Pollutant	Emissions Per Year (TONs)
PM 10	0.000000
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

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Pollutant	Emissions Per Year (TONs)
CH_4	0.000000
N_2O	0.000000

Pollutant	Emissions Per Year (TONs)
CO_2	0.000000
CO_2e	0.000000

6.2 Tanks Assumptions

- Chemical

Chemical Name: Fuel oil no. 2
Chemical Category: Petroleum Distillates
Chemical Density: 7.1
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000129553551395334
Vapor Pressure: 0.0055
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank

Type of Tank: Horizontal Tank
Tank Length (ft): 10
Tank Diameter (ft): 10
Annual Net Throughput (gallon/year): 2000

6.3 Tank Formula(s)

- Vapor Space Volume

$VSV = (PI / 4) * D^2 * L / 2$

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)
2: Convertion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

$VVSF = 1 / (1 + (0.053 * VP * L / 2))$

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
L: Tank Length (ft)

- Standing Storage Loss per Year

$SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000$

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

$NT = (7.48 * ANT) / ((PI / 4.0) * D * L)$

NT: Number of Turnovers per Year

7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)

- Working Loss Turnover (Saturation) Factor per Year
WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year
WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

7. Tanks

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Spokane
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Bulk Fuels

- Activity Description:
Bulk Fuels

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.375425
SO_x	0.000000
NO_x	0.000000
CO	0.000000

Pollutant	Emissions Per Year (TONs)
PM 10	0.000000
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000

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- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000000
N_2O	0.000000

Pollutant	Emissions Per Year (TONs)
CO_2	0.000000
CO_2e	0.000000

7.2 Tanks Assumptions

- Chemical

Chemical Name: Jet kerosene (JP-5, JP-8 or Jet-A)
Chemical Category: Petroleum Distillates
Chemical Density: 7
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000170775135930213
Vapor Pressure: 0.00725
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank

Type of Tank: Vertical Tank
Tank Height (ft): 60
Tank Diameter (ft): 40
Annual Net Throughput (gallon/year): 3000000

7.3 Tank Formula(s)

- Vapor Space Volume

$VSV = (PI / 4) * D^2 * H / 2$

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)
2: Convertion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

$VVSF = 1 / (1 + (0.053 * VP * H / 2))$

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
H: Tank Height (ft)

- Standing Storage Loss per Year

$SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000$

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

$NT = (7.48 * ANT) / ((PI / 4.0) * D * H)$

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)

- Working Loss Turnover (Saturation) Factor per Year

WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year

WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

APPENDIX C
GHG Analysis

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C.1 AIR CONFORMITY ANALYSIS

This section provides the Air Conformity Applicability Model (ACAM) report and record of air analysis (ROAA).

The Air Force's ACAM was used to analyze a net change in emissions to assess the potential air quality impacts associated with the Proposed Action. The analysis was performed in accordance with Air Force Manual (AFMAN) 32-7002, *Environmental Compliance and Pollution Prevention*; the Air Force Environmental Impact Analysis Process (EIAP) (Title 32 of the Code of Federal Regulations (CFR) Part 989); and the General Conformity Rule (GCR) (40 CFR §§ 93.150–93.165). This report provides a summary of the ACAM analysis.

C.1.1 Air Impact Analysis

Based on the attainment status at the action locations, the requirements of the GCR are not applicable. Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady-state" emissions (i.e., no net gain/loss in emission stabilized and the action is fully implemented). The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in *Air Emissions Guide for Air Force Stationary Sources*, the *Air Emissions Guide for Air Force Mobile Sources*, and *Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance indicators" were used in the analysis to provide an indication of the significance of the Proposed Action's potential impacts on local air quality. The insignificant indicators are trivial (*de minimis*) rate thresholds that have been demonstrated to have little-to-no impact on air quality. The insignificance indicators are the 250-ton per year (-tpy) Prevention of Significant Deterioration (PSD) major source threshold and 25 tpy for lead (Pb) for actions occurring in areas that are in attainment (not exceeding any of the National Ambient Air Quality Standards (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to use in identifying actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance of any NAAQS.

C.1.2 Air Impact Analysis Results Summary

None of the estimated annual net emissions associated with the Proposed Action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more of the NAAQS and will have an insignificant impact on air quality. No further air assessment is needed. The action's net emissions for every year through achieving steady state were compared against the insignificance indicators and are summarized in Tables C-1 and C-3. ACAM input is presented in table C-1.

Table C-1: ACAM Report ROAA Summary–Assumptions

EA Project #, Project #	Project Name	Construction SF	Time Frame for Completion	Footprint SF	Staging Area SF	Parking SF	Landscaping	Utilities	Total Ground Disturbance SF
DESC2702	Construct Bulk Fuel Storage Tank #3	48,138	12 months	48,138	9,628	Existing	12,035	4,814	74,614
GJKZ231001	Repair Approach Lighting Electrical Vaults	750,000	12 months	750,000	150,000	Existing		75,000	90,000
GJKZ2210111	Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003	31,378	12 months	31,378.00	2400.00	Existing	3000.00	1200.00	37978.00
GJKZ251005	Add Government Parking Yard, B2115	12,000	12 months	12,000	2,400	Existing	3,000	1,200	18,600
GJKZ251001	Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013	30,000	12 months	30,000	6,000	Existing	7,500	3,000	46,500
GJKZ241009	Construct All Weather Military Working Dog (MWD) Training Area	10000	12 months	10,000	2,000	3,000	2,500	1,000	18,500
GJKZ223003	Replace Child Development Center (CDC) B2500	40,000	12 months	40,000	8,000	12,000	10,000	4,000	74,000
GJKZ253001	Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55	518,000	12 months	518,000	103,600	Existing	129,500	51,800	802,900
Combined	Demolition of B2060	14,575	12 months	14,575	2,915	N/A	3,644	1,458	22,591
	Demolition of B2120	34,168		17,084	3,417	N/A	4,271	1,708	26,480

Notes**:** Estimated Using Soil Disturbance Area in Cost Estimates (UFC 1-200-01, UFC 1-200-02), Army Cost Analysis Manual 2020; and Independent Government Cost Estimate (IGCE) Handbook Feb 2023. Building Footprint: The area directly occupied by the building itself. This is calculated as total square footage (SF) divided by the number of stories, resulting in the footprint square footage. Construction Staging Areas: Staging areas are where materials, equipment, and site offices are placed during construction. A standard estimate for these areas ranges from 10% to 30% of the building's footprint. In this case, the average value of 20% is used. Parking and Access Roads: Parking spaces generally require 300–350 square feet each, accounting for the stall, drive aisles, and space between cars (UFC 1-200-01). Alternatively, parking and access roads can be estimated at 30% of the total construction area. Landscaping and Grading: This includes any additional area disturbed for landscaping or site preparation beyond the building footprint. Landscaping areas are typically estimated between 10% to 30% of the building's footprint, with an average value of 25% used here. Onsite Utility Installation Areas: This accounts for space required for trenching and installing utilities, such as electricity, water, and sewage lines. Utility areas are generally estimated between 10% and 30% of the building's footprint. The lowest estimate of 10% is used for this calculation.

Table C-2: ACAM Report ROAA Summary–Construction Emissions

EA Project Number Project Number	Project Name	Action Emissions (tpy)								
		VOC	NOx	CO	SOx	PM 10	PM 2.5	Pb	NH3	Exceedance
DESC2702	Construct Bulk Fuel Storage Tank #3	0.594	1.465	1.884	0.003	3.187	0.052	0.000	0.004	No
GJKZ231001	Repair Approach Lighting Electrical Vaults	0.523	2.002	2.551	0.004	6.268	0.081	0.000	0.003	No
GJKZ2210111	Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003	0.495	1.802	2.192	0.003	4.985	0.075	0.000	0.003	No
GJKZ251005	Add Government Parking Yard, B2115	0.483	1.647	2.001	0.003	2.347	0.070	0.00	0.002	No
GJKZ251001	Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013	0.519	1.995	2.498	0.004	1.087	0.082	0.000	0.004	No
GJKZ241009	Construct All Weather Military Working Dog (MWD) Training Area	0.517	1.968	2.483	0.004	2.659	0.081	0.000	0.003	No
GJKZ223003	Replace Child Development Center (CDC) B2500	1.097	1.890	2.434	0.004	4.676	0.068	0.000	0.005	No
GJKZ253001	Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55	0.696	6.094	7.051	0.014	98.980	0.227	0.000	0.0011	No
	Demolition of B2060 and B2120	0.197	1.727	2.083	0.003	6.243	0.071	0.000	0.003	No

Notes: CO = carbon monoxide; NH_3 = ammonia; NO_x = nitrogen oxides; $PM_{2.5}$ = fine inhalable particulate matter with a diameter generally 2.5 micrometers (µm) or smaller; PM_{10} = inhalable particulate matter with a diameter generally 10 µm or smaller; SO_x = sulfur oxides; VOC = volatile organic compound.

Table C-3: ACAM Report ROAA Summary–Operations–Direct

EA Project Number Project Number	Project Name	Action Emissions (tpy)								
		VOC	NOx	CO	SOx	PM 10	PM 2.5	Pb	NH3	Exceedance
DESC2702	Construct Bulk Fuel Storage Tank #3	0.013	0.109	0.143	0.000	0.004	0.004	0.00	0.00	No
GJKZ231001	Repair Approach Lighting Electrical Vaults	NO NET CHANGE								
GJKZ2210111	Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003	NO NET CHANGE								
GJKZ251005	Add Government Parking Yard, B2115	NO NET CHANGE								
GJKZ251001	Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013	NO NET CHANGE								
GJKZ241009	Construct All Weather Military Working Dog (MWD) Training Area	0.517	1.968	2.483	0.004	2.659	0.081	0.000	0.003	No
GJKZ223003	Replace Child Development Center (CDC) B2500	1.097	1.890	2.434	0.004	4.676	0.068	0.000	0.005	No
GJKZ253001	Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55	NO NET CHANGE								
	Demolition of B2060 and B2120	NO NET CHANGE								

Notes: CO = carbon monoxide; NH_3 = ammonia; NO_x = nitrogen oxides; $PM_{2.5}$ = fine inhalable particulate with a diameter generally 2.5 µm or smaller; PM_{10} = inhalable particulate with a diameter generally 10 µm or smaller; SOx= sulfur oxides; VOC = volatile organic compound.

[a] Emergency generator size was assumed to be 135 horsepower and assumed to operated 160 hours for each project. Only the air traffic control emergency generator was identified in the programming documents. Indirect emissions would be from other sources of power generation contributing to new infrastructure.

C.2 CLIMATE AND GHG EMISSIONS ANALYSIS

ACAM also was used to estimate GHG emissions associated with the Proposed Action. The analysis was performed in accordance with the AFMAN 32-7002, EIAP) (32 CFR 989), and the DAF Air Quality EIAP Guide. This report provides a summary of GHG emissions and SC-GHG analysis.

C.2.1 GHG Emissions Analysis

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected steady state of the action.

Table C-4: Action-Related Annual GHG Emissions (mtpy)

	Action-Related Annual GHG Emissions (mton/yr)						
Project	**YEAR**	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003	2026	351	0.01403975	0.00540341	352	68,039	No
	SS Year	0	0	0	0	68,039	No
Replace Child Development Center (CDC) B2500	2026	383	0.01529992	0.00660298	385	68,039	No
	SS Year	146	0.00279527	0.00272	147	68,039	No
Demolition of B2060 and B2120	2026	323	0.0129	0.0049	325	68,039	No
	SS Year	0	0	0	0	68,039	No
Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013	2026	397	0.0159	0.00587	399	68,039	No
	SS Year	0	0	0	0	68,039	No
Construct All Weather Military Working Dog (MWD) Training Area	2026	385	0.0156	0.004380	387	68,039	No
	SS Year	49	0.0009	0.000903	50	68,039	No
Construct Bulk Fuel Storage Tank #3	2026	303	0.012	0.00599	305	68,039	No
	SS Year	24	0.00095	0.000604	25	68,039	No
Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55	2026	1,455	0.05832073	0.02082853	1,463	68,039	No
	SS Year	0	0	0	0	68,039	No
Repair Approach Lighting Electrical Vaults	2026	385	0.01569718	0.00381861	387	68,039	No
	SS Year	0	0	0	0	68,039	No
Add Government Parking Yard, B2115	2026	297	0.01213007	0.00266063	298	68,039	No
	SS Year	0	0	0	0	68,039	No

Note: SS = steady state.

C.2.2 GHG Relative Significance Assessment

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, on a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where the action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Table C-4: Total GHG Relatives Significance (mton)

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2026-2031	State Total	212,824,302	803,474	60,791	251,431,312
2026-2031	U.S. Total	15,409,362,537	76,880,735	4,502,123	18,755,085,689
2026-2031	Action	3,516	0.109078	0.135344	3,556
Percent of State Totals		0.00165189%	0.00001358%	0.00022264%	0.00141450%
Percent of U.S. Totals		0.00002281%	0.00000014%	0.00000301%	0.00001896%

***Notes*: From a global context, the Proposed Action's total SC-GHG percentage of total global SC-GHG for the same period is 0.00000021%. Global value based on the U.S. emits 1.4% of all global GHG annual emissions (CCES 2018).**

References

CCES (Center for Climate and Energy Solutions). 2018. *2018 Emissions Data*. Accessed July 6, 2023. https://www.c2es.org/content/international-emissions

DAF (Department of the Air Force). 2023 Department of the Air Force Climate Campaign Plan. Office of the Assistant Secretary for Energy, Installations, and Environment, Washington, DC.

DAF (Department of the Air Force). 2024 Air Emissions Guide for Air Force Stationary Sources, the Air Emissions Guide for Air Force Mobile Sources.

DAF (Department of the Air Force). April 2023 Level II, Air Quality Quantitative Assessment, Insignificance Indicators

DAF (Department of the Air Force). 2020 Department *Air Emissions Guide for Air Force Transitory Sources*

USEPA (U.S. Environmental Protection Agency). 2022. Facility Level Information on Greenhouse Gases Tool (FLIGHT) 2022 Greenhouse Gas Emissions from Large Facilities, Madison County, Alabama. Accessed February 2024. EPA Facility Level GHG Emissions Data.

APPENDIX D
USFWS IPaC Species List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405

In Reply Refer To: 04/21/2025 17:27:52 UTC
Project Code: 2025-0085924
Project Name: Fairchild AFB

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

PROJECT SUMMARY

Project Code: 2025-0085924
Project Name: Fairchild AFB
Project Type: Airport - Maintenance/Modification
Project Description: EA - New construction and airfield lighting upgrades
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@47.60650915,-117.65880287370557,14z

Counties: Spokane County, Washington

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

FISHES

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., coterminous, lower 48 states There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Suckley's Cuckoo Bumble Bee *Bombus suckleyi* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10885	Proposed Endangered

FLOWERING PLANTS

NAME	STATUS
Spalding's Catchfly *Silene spaldingii* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/3681	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Rachel Glover
Address: 101 Maluniu Ave APT 102
City: Kailua
State: HI
Zip: 96734
Email rachel.glover@sealaska.com
Phone: 9162040822

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Air Force

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APPENDIX E
Noise Analysis

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E.1 Noise Analysis

This appendix documents the noise analysis for the ten proposed actions in the Installation Development Plan. Predictive modeling was conducted using the FHWA's Roadway Construction Noise Model (RCNM), accounting for distance attenuation and receptor proximity (FHWA 2006). The tool identified the worst-case noise hour for construction equipment.

E.1.1 Noise Impact

Predictive modeling was conducted using the FHWA's Roadway Construction Noise Model (RCNM), accounting for distance attenuation and receptor proximity (FHWA 2006). The tool identified the worst-case noise hour for construction equipment.

The proposed construction is expected to cause temporary noise increases; however, impacts would be minimal due to the short duration, predominantly daytime work hours (0700–1700), and distance from noise-sensitive areas. The site is already influenced by ambient noise from traffic and base operations, and modeling shows projected levels remain within acceptable limits. No long-term noise sources would be introduced. Standard construction equipment would be used with mufflers and noise suppression devices. Given the short-term nature and noise-reducing practices in place, the project poses no significant risk to human health or the environment and requires no mitigation beyond routine controls.

Table E-1 shows the maximum sound levels (Lmax) at various receptors during construction. For primarily indoor receptors—such as housing, public areas, and academic centers—indoor noise levels are the main concern due to potential operational disruptions. These levels range from 35.8 to 50.9 dBA at distances of 550 to 6,000 feet from the nearest project site, suggesting mild to moderate disruption depending on activity type. The analysis assumed all 10 projects would occur concurrently over four years, with 69 noise sources identified.

Table E-1 Estimated Noise Associated with Outdoor Construction

	Closest Project			Furthest Project		
	Distance	Lmax (dBA)		Distance	Lmax (dBA)	
Noise-Sensitive Receptor	(ft)	Outdoor	Indoor	(ft)	Outdoor	Indoor
Michael Anderson Elementary	550	77.4	52.4	4,900	58.6	33.6
Residential Housing	1,330	69.9	44.9	4,100	60.1	35.1
HQ Group	750	74.8	49.8	5,560	57.5	32.5
Youth Center	923	73.0	48.0	4,200	59.9	34.9
Gymnasium	660	75.9	50.9	4,000	60.4	35.4

Source: FHWA 2006 and Harris 1998.

Table E-2 summarizes two projects—All-Weather MWD Training Area and Bulk Fuel Storage Tank #3—using 22 pieces of construction equipment. These sites were selected for further analysis due to their proximity to potential receptors, including residential housing. While some buildings fall within the modeled outdoor noise impact zone, indoor noise levels are expected to remain within acceptable limits. Additional assessments confirmed that projected indoor noise levels during construction and operation remain below thresholds requiring mitigation, indicating no anticipated adverse impacts.

Table E-2 Estimated Noise Levels Associated with Two Construction Projects

Noise-Sensitive Receptor	Closest Project	Furthest Project

	Distance (ft)	Lmax (dBA)		Distance (ft)	Lmax (dBA)	
		Outdoor	Indoor		Outdoor	Indoor
Michael Anderson Elementary	550	73.2	48.2	4,900	46.4	21.4
Residential Housing	1,330	65.6	40.6	4,100	46.4	21.4
HQ Group	750	70.5	45.5	5,560	46.4	21.4
Youth Center	923	68.8	43.8	4,200	46.4	21.4
Gymnasium	660	71.6	46.6	4,000	46.4	21.4

Source: FHWA 2006 and Harris 1998.

Table E-3 covers two projects—demolition of Building 2120 and replacement of the Child Development Center (Building 2500)—using 22 pieces of construction equipment. Due to their location and scope, nearby facilities such as Stratofortress Hall, Huey Hall, Flying Fortress Hall, Starlifter Hall, Stratotanker Hall, and Peacemaker Hall were evaluated further because of their proximity to sensitive residential areas. While some buildings fall within the modeled outdoor noise impact zone, additional assessments confirmed that projected indoor noise levels remain below mitigation thresholds, with no adverse impacts expected during construction or operation.

Table E-3 Estimated Further Noise Levels Associated with Two Construction Projects

	Closest Project			Furthest Project		
Noise-Sensitive Receptor	Distance (ft)	Lmax (dBA)		Distance (ft)	Lmax (dBA)	
		Outdoor	Indoor		Outdoor	Indoor
Stratofortress Hall	673	71.3	46.3	3,000	58.5	33.5
Huey Hall	990	68.0	43.0	4,100	55.8	30.8
Flying Fortress Hall	677	71.3	46.3	5,560	53.1	28.1
Star lifter Hall	1,100	67.1	42.1	4,200	55.6	30.6
Stratotanker Hall	935	68.5	43.5	4,200	55.6	30.6
Peacemaker Hall	935	68.5	43.5	4,200	55.6	30.6
Atlas Hall	1,000	67.9	42.9	4,000	56.0	31.0

Source: FHWA 2006 and Harris 1998.

Operations. **Table E-4** There would be negligible effects from operational noise levels. New facility operations and support activities, such as increased vehicular traffic and maintenance, would generate operation noise. The noise from operational facilities is expected to be relatively low compared to construction noise, as the new facilities under the proposed action would not involve high-noise activities. They include residential and administrative buildings, training centers, and maintenance shops, generally producing low-to-moderate noise levels consistent with typical indoor environments (50–65 dBA) (ANSI S12.9-2013/Part 3). Primary noise sources may include the following:

- Mechanical equipment: Heating, ventilation, and air conditioning (HVAC) systems and backup generators.
- Indoor operations: Activities within training and administrative spaces producing minimal external noise, with anticipated sound levels well within the range of ordinary office environments.

- Backup generators: In operation for all facilities, could produce noise levels between 65 dBA and 75 dBA at 50 ft. Given their intermittent use, backup generators would not continuously contribute to the noise environment. Facilities would likely operate the generators only during power interruptions or scheduled testing, typically limited to a few hours monthly. Where necessary, acoustic enclosures or sound-dampening materials could help reduce noise during generator operation.
- Traffic and maintenance: Slight increases in on-base traffic due to the relocation of personnel, primarily during peak operational hours. Traffic increases, however, are expected to be minimal from the less than 200 personnel. Maintenance activities for new facilities, such as landscaping and HVAC upkeep, would produce minor localized noise like existing operations on-base.

Table E-4: Summary–Operations–Direct

EA Project Number Project Number	Project Name	
DESC2702	Construct Bulk Fuel Storage Tank #3	NO NET CHANGE
GJKZ231001	Repair Approach Lighting Electrical Vaults	NO NET CHANGE
GJKZ2210111	Renovate/Relocate Logistics Readiness Squadron from B2090 to B1003	NO NET CHANGE
GJKZ251005	Add Government Parking Yard, B2115	NO NET CHANGE
GJKZ251001	Renovate/Relocate Aircraft Ground Equipment Maintenance from B2050 to B1013	NO NET CHANGE
GJKZ241009	Construct All Weather Military Working Dog (MWD) Training Area	NO NET CHANGE
GJKZ223003	Replace Child Development Center (CDC) B2500	NO NET CHANGE
GJKZ253001	Construct Taxi Lane Pull-Throughs for Spots 20-30, 51-55	NO NET CHANGE
	Demolition of B2060 and B2120	NO NET CHANGE

References

FHWA (Federal Highway Agency) 2006 Highway Construction Noise Handbook North Anna COL SDEIS Chapter 4 Reference National Highway Traffic Safety Administration Main Page.

FHWA (Federal Highway Agency) 2002 Entering the Quiet Zone: Noise Compatible Land Use Planning FHWA-EP-02-005

DAF (Department of the Air Force). 2024 **Air Force Instruction 32-1015** Integrated Installation Environmental Planning

.DAF (Department of the Air Force). 2020 Air Force Instruction 48-101, Aerospace Medicine Enterprise

DAF (Department of the Air Force). 2023 Air Force Instruction AFI 32-1023, Designing and Constructing Military Construction Projects,

DAF (Department of the Air Force). 2022 Air Force Instruction AFM 90-801, Environment, Safety, and Occupational Health (ESOH)

Unified Facilities Criteria (UFC) 2022, 3-450-01, Noise and Vibration Control

Harris, C.M. 1998. Handbook of Acoustical Measurements and Noise Control. American Institute of Physics, New York.

USEPA (U.S. Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. USEPA, Washington, DC.

ANSI S12.9-2013/Part 3: Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present

Washington Administrative Code (WAC) 173-60 – Maximum Environmental Noise Levels

Spokane Valley Municipal Code (SVMC) Section 7.05.040(K)(4). This section outlines exemptions to noise disturbances,