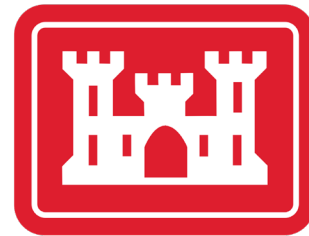


PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR STATIONING AND FIELDING THE INDIRECT FIRE PROTECTION CAPABILITY WEAPON SYSTEM AT MULTIPLE INSTALLATIONS

Prepared for:
**Headquarters,
Department of the Army**



Prepared by:
**US Army Corps of Engineers,
Tulsa District**



March 2026

DISTRIBUTION A

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Technical assistance provided by:

Leisnoi-KEMRON 8(a) Joint Venture, LLC
Tetra Tech, Inc.

Note: The Council on Environmental Quality issued a final rule to remove National Environmental Policy Act (NEPA) implementing regulations (Title 40 of the *Code of Federal Regulations* 1500–1508) on February 25, 2025. The Department of Defense (DoD) subsequently rescinded Air Force, Army, and Navy NEPA implementing regulations and issued DoD NEPA Implementing Procedures applicable to all DoD branches on June 30, 2025 (90 FR 27857). DoD NEPA Implementing Procedures Part 1.5(d)(1) reads: "The text of stand-alone EAIs strictly prohibited from exceeding 75 pages, not including citations or appendices." This PEA meets the DoD NEPA Implementing Procedures page requirement; the total number of pages excluding section 6 (References) and the appendices is 54 pages.

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ACRONYMS AND ABBREVIATIONS

AAF	Army Airfield
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ADA	Air Defense Artillery
ADEC	Alaska Department of Environmental Conservation
AFB	Air Force Base
AMD	Air and Missile Defense
AMPV	Armored Multi-Purpose Vehicle
AMS	Army Modernization Strategy
AQCR	Air Quality Control Region
AR	Army Regulation
Army	US Army
ARNG	Army National Guard
BDE	Brigade
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
BN	Battalion
BTRY	Battery
C-sUAS	counter-small unmanned aircraft system
CAA	Clean Air Act
CATCD	category code
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CRM	Cultural Resources Manager
CRP	Cultural Resources Program
CUA	Controlled Use Area
DMR	Dillingham Military Reservation
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DPTMS	Directorate of Plans, Training, Mobilization, and Security
DPW	Directorate of Public Works
EA	Environmental Assessment
ED	Environmental Division
EIS	Environmental Impact Statement
EMD	Environmental Management Division
EMS	Environmental Management System
EO	Executive Order
ERCA	Extended Range Cannon Artillery
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FBTC	Fort Bliss Training Complex
FONSI	Finding of No Significant Impact
FSC	Forward Support Company
FS-HAAF	Fort Stewart and Hunter Army Airfield
FS-LIDS	Fixed Site-Low, Slow, Small Unmanned Aerial Vehicle Integrated Defeat System
GCR	General Conformity Rule
GIS	geographic information system
HAP	hazardous air pollutant
HMMP	Hazardous Material Management Plan
HMMWV	high-mobility multipurpose wheeled vehicle

HP-DE	high power directed energy
ICRMP	Integrated Cultural Resources Management Plan
ID	Infantry Division
IDDS-A	Iron Dome Defense System-Army
IFPC	Indirect Fire Protection Capability
INRMP	Integrated Natural Resources Management Plan
ITAM	Integrated Training Area Management
JAX	Jacksonville, FL
JBER	Joint Base Elmendorf-Richardson
JBLM	Joint Base Lewis-McChord
LRHW	Long-Range Hypersonic Weapon
LUA	Limited Use Area
M10 Booker	M10 Booker Combat Vehicle
M-LIDS	Mobile-Low, Slow, Small Unmanned Aircraft Integrated Defeat System
MADE/SAMS	Military Airspace Data Entry/Special Use Airspace Management System
MBTA	Migratory Bird Treaty Act
MDO	multi-domain operation
MDTF	Multi-Domain Task Force
mm	millimeter
MMPA	Marine Mammal Protection Act
MRC	Mid-Range Capability
N ₂ O	nitrous oxide
NAA	nonattainment area
NAAQS	National Ambient Air Quality Standard
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHO	Native Hawaiian Organization
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRHP	National Register of Historic Places
NRM	Natural Resources Manager
O ₃	ozone
OLA	Off-Limits Area
PCMS	Piñon Canyon Maneuver Site
PEA	Programmatic Environmental Assessment
PLT	platoon
PM	particulate matter
PM ₁₀	particulate matter with diameter less than or equal to 10 microns
PM _{2.5}	particulate matter with diameter less than or equal to 2.5 microns
POL	petroleum, oil, and lubricants
ppb	parts per billion
ppm	parts per million
RCW	red-cockaded woodpecker
REC	Record of Environmental Consideration
ROI	region of influence
SBMR	Schofield Barracks Military Reservation
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SOP	standard operating procedure
SPCC	spill prevention, control, and countermeasure
SRP	Sustainable Range Program
TFR	temporary flight restriction
tpy	tons per year
UAS	Unmanned Aircraft System
US	United States

USAG	US Army Garrison
USC	United States Code
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
WSMR	White Sands Missile Range

EXECUTIVE SUMMARY

This Programmatic Environmental Assessment (PEA) analyzes the potential effects of implementing actions to field and station the Indirect Fire Protection Capability (IFPC) weapon system at the following Department of the Army (Army) and joint base installations: Fort Bliss, Fort Campbell, Fort Carson, Fort Hood (formerly known as Fort Cavazos), Fort Drum, Fort Knox, Fort Bragg (formerly known as Fort Liberty), Fort Riley, Fort Sill, Fort Stewart, Joint Base Elmendorf-Richardson, Joint Base Lewis-McChord, US Army Garrison (USAG) Alaska, Fort Wainwright (Fort Wainwright), and USAG Hawaii. Additional training locations were assessed at Fort Bliss (White Sands Missile Range), Fort Carson (Piñon Canyon Maneuver Site), Joint Base Lewis-McChord (Yakima Training Center), and Joint Base Elmendorf-Richardson and USAG Alaska (Donnelly Training Area). The IFPC weapon system is intended to provide defense of designated joint force command assets at the strategic and operational levels hosted at each installation. Each IFPC battalion (BN) and battery (BTRY) would be incorporated into the chain of command of an Air Defense Artillery (ADA) Brigade or a multi-domain task force full configuration.

The Army has prepared this PEA in compliance with the National Environmental Policy Act of 1969 (Title 42 of the *United States Code* § 4321 *et seq.*) (NEPA); US Department of Defense (DoD) NEPA Implementing Procedures issued 30 June 2025; Army Regulation 200-1, *Environmental Protection and Enhancement*; and applicable Army NEPA guidance.

Purpose and Need

The purpose of the proposed action is to field and station IFPC BNs and/or IFPC BTRYs at a selection of the 14 installations within the United States proposed to receive them to support Air and Missile Defense (AMD) modernization. The IFPC weapon system is needed to provide a defensive capability by intercepting cruise missiles, unmanned aircraft systems (UAS), and large-caliber rockets and would enhance short-range AMD. Because US competitors have invested heavily in their indirect fire and missile capabilities, the United States also must modernize its AMD capabilities. The equipment and weapons supported by the IFPC weapon system are intended to provide an enhanced coverage area for ground forces and infrastructure and to defend joint forces from attack.

Proposed Action and Alternatives

The Army's proposed action is to field and station IFPC BNs and BTRYs at multiple Army and joint base installations within the United States to support AMD modernization. In support of that priority, the Army proposes to field and station up to nine IFPC BNs and up to nine IFPC BTRYs across a selection of installations within the United States and its territories. Each IFPC BN and BTRY would be in the chain of command of an ADA Brigade or multi-domain task force full configuration, although it might not be collocated with those command assets. IFPC BNs and BTRYs would be fielded and stationed at installations that can support the equipment, soldiers, and training. The current requirements for facilities are subject to change based upon organizational structure, but a headquarters facility, company or BTRY operations

facilities, a tactical equipment maintenance facility, and storage spaces would be the minimum makeup of an IFPC BN and associated BTRYS.

This PEA assesses the following alternatives for implementing the proposed action:

- **Alternative 1.** Field and station both an IFPC BTRY within a Maneuver-Short-Range Air Defense Capability BN assigned to an Army Division together with an IFPC BN at one or more of the installations listed in section 1.3. The planned IFPC BN structure is a headquarters and headquarters BTRY, a forward support company (FSC), three IFPC BTRYS, and a counter-small UAS BTRY. Approximately 735 personnel would be stationed with an IFPC BN, with 105 in the headquarters BTRY, 150 in the FSC, 125 in each IFPC BTRY, and 105 in the counter-small UAS BTRY. The headquarters and headquarters BTRY would provide command, administrative, intelligence, and medical support to the BN. The FSC would provide maintenance, logistics, and sustainment for all fielded systems, equipment, and personnel of the BN.

The IFPC BTRY organization would be like that of existing ADA BTRYS, consisting of a small headquarters platoon (PLT), a launcher PLT, a fire control/radar PLT, and a system support section. The IFPC BTRYS would initially field with kinetic weapons in a missile and launcher configuration. Primary mission equipment in each IFPC BTRY would be an Engagement Operations Center equipped with the Army Integrated AMD Battle Command System for command and control; a Sentinel radar for search, track, and targeting; and a launcher and an interceptor in an all-up-round¹ magazine configuration firing the AIM-9X Sidewinder missile.

- **Alternative 2.** Field and station up to nine IFPC BNs at up to nine installations.
- **Alternative 3.** Field and station up to nine IFPC BTRYS at up to nine installations.
- **No Action Alternative.** Under the No Action Alternative, the Army would not implement the proposed action. No IFPC BNs or BTRYS would be fielded to any installation and the Army would continue to rely on existing air defense assets to complete military operations. The No Action Alternative would not meet the purpose of and need for the proposed action. The No Action Alternative serves as a benchmark against which federal actions can be evaluated. The PEA includes an analysis of a No Action Alternative in accordance with the requirements of the Department of Defense NEPA Implementing Procedures published on 30 June 2025.

Environmental Consequences

The PEA evaluates the environmental effects of implementing the assessed alternatives programmatically for the 14 installations proposed to receive the IFPC BNs and BTRYS. Resource areas considered for analysis in this PEA were air quality, airspace use,

¹ An all-up-round (AUR) is a missile that is delivered as a fully assembled weapon, ready to be launched.

biological resources, cultural resources, electromagnetic spectrum, geological resources and soils, hazardous and toxic materials and waste, human health and safety, land use, noise, socioeconomics (including protection of children), transportation and traffic, utilities and infrastructure, water resources, and aesthetics and visual resources. Based on what is known about how the IFPC weapon system would be used at an installation, the Army analyzed the weapon system's use for potential effects on each resource area. The Army preliminarily determined which resource areas would not likely be affected by implementing the proposed action and could be dismissed from further analysis of potential effects in the PEA, which ones required limited analysis, and which ones required detailed analysis. The resource area of air quality is analyzed in detail. The four resource areas of airspace use, biological resources, cultural resources, and hazardous and toxic materials and waste are analyzed to a limited extent. Other resource areas were dismissed from further analysis.

Effects of implementing alternatives 1, 2, or 3 are expected to be less than significant. All resource area effects are expected to be less than significant and no mitigation would be needed to reduce environmental consequences to below a level of significance. The effects of implementing the alternatives are summarized below.

- **Alternative 1.** No effects to less-than-significant adverse effects would be expected from implementing Alternative 1. By resource area, the expected effects would be long-term, less-than-significant adverse effects on air quality; no effects to less-than-significant adverse effects on airspace use; no effects to long-term, less-than-significant adverse effects on biological resources; no effects on cultural resources; and long-term, less-than-significant adverse effects on hazardous and toxic materials and waste.
- **Alternative 2.** No effects to less-than-significant adverse effects would be expected from implementing Alternative 2. Effects of implementing Alternative 2 would be expected to have effects similar to but less than those of Alternative 1. Fielding and stationing an IFPC BN, rather than an IFPC BN and BTRY, at an installation would involve fewer personnel and less equipment. Effects on any resource area, therefore, would be expected to be less than the effects under Alternative 1.
- **Alternative 3.** No effects to less-than-significant adverse effects would be expected from implementing Alternative 3. Implementing Alternative 3 would be expected to have effects similar to but less than those of alternatives 1 or 2. Fielding and stationing an IFPC BTRY, rather than an IFPC BN and BTRY (as under Alternative 1) or an IFPC BN (as under Alternative 2), at an installation would involve the fewest number of personnel and the least amount of equipment of the three alternatives. Effects on any resource area, therefore, would be expected to be less than effects under alternatives 1 and 2.
- **No Action Alternative.** No effects would be expected under the No Action Alternative. No changes to existing conditions would result at any installation. The IFPC weapon system would not be fielded or stationed, no additional personnel would be stationed at any installation, and no additional training would occur.

SECTION 1 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The United States (US²) has experienced arms races in the past, especially related to the Soviet Union from the end of World War II until its collapse in 1991. Since the collapse of the former Soviet Union, weapons proliferation has continued to be a reality in the world with US competitors and potential competitors (e.g., Russia, China, Iran, and proxies). In the *2021 Army Modernization Strategy: Investing in the Future*, the US Army (Army) provides a framework for realigning funding towards the Army's top priorities and reducing administrative burdens to enable modernization efforts.

US near-peer competitors such as China and Russia are seeking to achieve their aims by using multiple systems across all domains of war—land, sea, air, space, and cyberspace—to separate the US forces and US allies from each other in time, geography, and capability. They hope to deny the United States the ability to project combat power, thereby creating de facto spheres of influence. US competitors will do this through a combination of long-, mid-, and short-range weapon systems; conventional forces; integrated air defenses; electronic warfare and jamming; cyberattacks; and denial of space-based capabilities, such as reconnaissance, navigation, and communications, as well as an array of political and informational weapons.

The nature of war has changed significantly, and the Army, along with its joint service partners, must be ready to deploy and fight in a high-intensity environment where all domains will be challenged. To prepare for the battlefield of the future, the Army must be ready to fight in a very different operational environment (i.e., across all five domains at once) than that in which it has fought previously.

Modernization is a continuous process requiring collaboration across the entire US military. The US Army Futures Command, under the strategic direction of Headquarters, Department of the Army, brings unity of effort to the Army's modernization approach by developing and delivering future concepts, requirements, and organizational designs based on its assessment of future operating environments. As the Army continuously updates its doctrine and training to conduct operations as a multi-domain force, it is pursuing new capabilities and weapons platforms to adapt to the evolving environment.

The Army Modernization Strategy (AMS) describes the Army's approach to transforming into a multi-domain force by 2035. The primary end state of the 2021 AMS is a modernized Army ready to conduct multi-domain operations (MDO) as part of an integrated Joint Force.³ In support of the AMS and its MDO capability, the Army has established six modernization priorities driving development to rebuild readiness and modernization of its force:

- Long-range precision fires

² Abbreviation "US" used only as an adjective.

³ The Joint Force include the US Air Force, US Army, US Navy, US Marines, US Space Force, and US allies.

- Next-generation combat vehicles
- Future vertical lift
- Network technology
- Air and Missile Defense (AMD)
- Soldier lethality

The MDO concept describes how the Army will support the Joint Force in the rapid and continuous integration of all domains of warfare—land, sea, air, space, and cyberspace—to deter and prevail as the United States competes short of conflict, and fights and wins if deterrence fails (US Army 2022b).

1.2 Purpose and Need

The purpose of the proposed action is to field and station⁴ Indirect Fire Protection Capability (IFPC) battalions (BNs) and/or IFPC batteries (BTRYs) at a subset of the 14 installations proposed to receive them within the United States to support AMD modernization. The new units would be equipped with systems and weapons that would keep pace with adversary threats and maintain mission readiness. Implementing this action would provide soldiers and units with the modernized equipment and capabilities they will need to be effective in contemporary and future operating environments.

Army forces require equipment and weapons that can compete and overcome the aerial threats of US near-peer competitors.

The IFPC weapon system is needed to provide an improved defensive capability by intercepting cruise missiles, unmanned aircraft systems (UAS), and large-caliber rockets and would enhance short-range AMD. Because US competitors have heavily invested in their indirect fire and missile capabilities, the United States also must modernize its AMD capabilities. The equipment and weapons supported by the IFPC weapon system are intended to provide an enhanced coverage area to ground forces and infrastructure and to defend joint forces from attack.

1.3 Proposed Action

The Army's proposed action is to field and station IFPC BNs and BTRYs at multiple Army and joint base installations within the United States to support AMD modernization. The IFPC weapon system is a key component of AMD modernization. The Army has been developing the IFPC system in multiple increments for several years. It is a ground-based weapon system intended to defend fixed and semi-fixed sites, such as airfields and forward operating bases. Other systems fulfilling this capability include the Land Based Phalanx Weapon System and the Iron Dome Defense System – Army (US Army 2021a,b).

In support of the AMD priority, the Army intends to station and field multiple IFPC BNs and BTRYs at installations within the United States and its territories. The IFPC system

⁴ Materiel fielding is the process of planning, coordinating, and executing the deployment of a materiel system and its support. Military stationing involves the distribution of military forces to designated locations where they can operate and carry out their missions effectively.

is intended to provide defense of designated Joint Force command assets at the strategic and operational levels hosted at the installations. Each IFPC BN and BTRY is intended to be in the chain of command of an Air Defense Artillery (ADA) Brigade (BDE) or a Multi-Domain Task Force (MDTF) full configuration, although it might not be collocated with those command assets. Fielding and stationing might occur at installations that can support the equipment, soldiers, and training. The current requirements for facilities are subject to change based upon organizational structure, but a headquarters facility, company or BTRY operations facilities, tactical equipment maintenance facility, and storage spaces are a minimum makeup of an IFPC BN and associated BTRYs. The total footprint space of these facilities at a minimum would be approximately 190,000 square feet. Section 2.1.1, *Cantonment Area Support Facilities*, explains how installations could meet this space requirement.

The Army proposes to station and field up to nine IFPC BNs and up to nine IFPC BTRYs across a selection of the installations listed below (**Figure 1-1**).

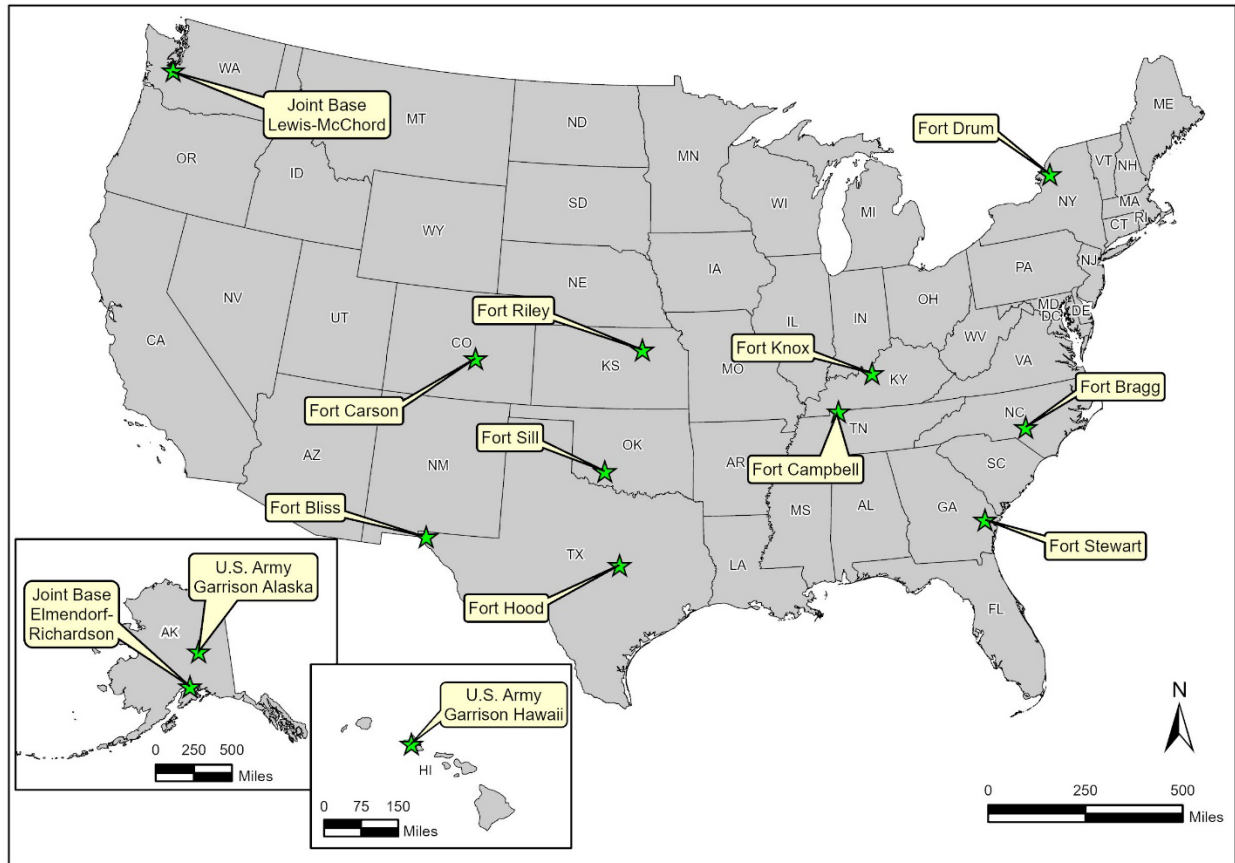


Figure 1-1. Installations considered for IFPC BTRY and BN Fielding

- Fort Bliss, Texas (including White Sands Missile Range)
- Fort Campbell, Kentucky
- Fort Carson, Colorado (including Piñon Canyon Maneuver Site)
- Fort Hood, Texas (formerly known as Fort Cavazos)
- Fort Drum, New York
- Fort Knox, Kentucky

- Fort Bragg, North Carolina (formerly known as Fort Liberty)
- Fort Riley, Kansas
- Fort Sill, Oklahoma
- Fort Stewart, Georgia
- Joint Base Elmendorf-Richardson (JBER), Alaska (including Donnelly Training Area)
- Joint Base Lewis-McChord (JBLM), Washington (including Yakima Training Center)
- US Army Garrison Alaska, Fort Wainwright (Fort Wainwright) (including Donnelly Training Area)
- US Army Garrison Hawaii

The planned IFPC BN structure is a headquarters and headquarters BTRY, a forward support company (FSC), three IFPC BTRYs, and a counter-small UAS (C-sUAS) BTRY. The total number of personnel would be approximately 735, with 105 in the headquarters BTRY, 150 in the FSC, 125 in each IFPC BTRY, and 105 in the C-sUAS BTRY. The headquarters and headquarters BTRY would provide command, administrative, intelligence, and medical support to the BN. The FSC would provide maintenance, logistics, and sustainment for all fielded systems and equipment of the BN.

The IFPC BTRY organization would be like that of current ADA BTRYs, consisting of a small headquarters PLT, a launcher PLT, a fire control/radar PLT, and a system support section. The IFPC BNs and BTRYs would initially field with kinetic weapons in a missile and launcher configuration. Primary mission equipment in each IFPC BTRY would be an Engagement Operations Center equipped with the Army Integrated AMD Battle Command System for command and control; a Sentinel radar for search, track, and targeting; and launcher and interceptors in an all-up-round magazine⁵ configuration firing the AIM-9X Sidewinder missile.

The addition of a C-sUAS BTRY is an update to the previous IFPC system configuration to provide better protection of assets against a rapidly emerging threat. Adversary small UAS represent a rapidly proliferating; low-cost, high-reward; and potentially lethal and damaging capability against US personnel, critical assets, and interests. The C-sUAS BTRY would be organized with a headquarters PLT and teams to operate the systems fielded. Each C-sUAS BTRY would be capable of operating multiple systems as shown in **Table 1-1** that can detect, track, identify, and defeat sUAS by non-kinetic (electromagnetic) or kinetic (guns or tube-launched anti-UAS weapon) effectors.⁶ Systems could be fixed site or mobile (mounted or dismounted) to cover the spectrum of threats.

⁵ An all-up-round (AUR) is a missile that is delivered as a fully assembled weapon, ready to be launched.

⁶ Effector is a response to a stimulus such as an integrated radar system warning, which could include a missile, gun, laser, or pulse of electromagnetic energy designed to defeat the threat.

Table 1-1. C-sUAS Equipment Set

Equipment	Approximate number	Configuration	System type
Drone-Buster	20	Handheld / Dismounted	Non-kinetic
Modi	20	Handheld / Dismounted	Non-kinetic
Forward Area Air Defense Command and Control	11	Handheld / Dismounted	Command and Control
Bal Chatri	10	Handheld / Dismounted	Non-kinetic
Smart Shooter	10	Handheld / Dismounted	Kinetic
Fixed Site-Low, Slow, Small Unmanned Aerial Vehicle Integrated Defeat System	6	Fixed / Semi-fixed	Non-kinetic/Kinetic
Mobile-Low, Slow, Small UAS Integrated Defeat System	5	Mobile / Mounted	Non-kinetic/Kinetic

In addition to the primary equipment of the IFPC and C-sUAS BTRYs, the BN would field with approximately 100 joint light tactical vehicles or high-mobility multipurpose wheeled vehicles, 190 medium tactical vehicles, and 140 trailers to transport personnel and equipment. Tracked vehicles are not expected to field with the IFPC BN. Also, an array of individual weapons, sensors, communication equipment, and support and maintenance equipment to facilitate operation, storage, and maintenance of all systems would field. The anticipated types of major equipment and approximate quantities are shown in **Table 1-2**.

A typical organization of an ADA BDE is shown in **Figure 1-2** (GlobalSecurity 2024). When fielded, the IFPC BN could replace one or more ADA BNs or an IFPC BTRY could replace a PATRIOT or Avenger BTRY. An IFPC BN structure is shown in **Figure 1-3**. An MDTF full configuration is shown in **Figure 1-4** (US Army 2022a). The IFPC BN would be the primary ADA element of the MDTF.

Table 1-2. Anticipated Equipment for IFPC and C-sUAS per BN

Equipment type	Approximate number
Joint Light Tactical Vehicle/HMMWV	100
Trucks, vans, medium tactical vehicle	190
Trailers	140
Generators	165
Radars	25
Kinetic launchers	50

Note: C-sUAS systems are detailed in Table 1-2, but the quantities of major equipment are included in this table. HMMWV=high-mobility multipurpose wheeled vehicle.

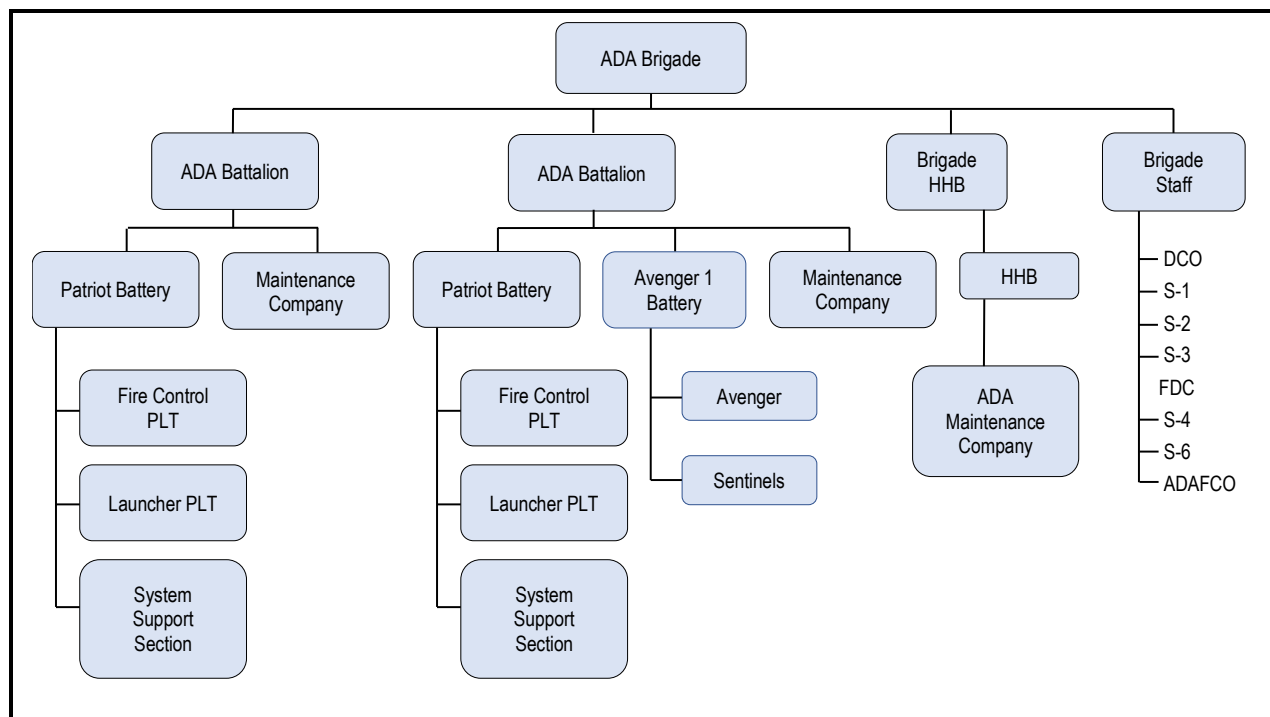


Figure 1-2. Typical ADA BDE Organizational Structure

Notes: ADA=Air Defense Artillery, ADAFCO=ADA Fire Control Operations/Officer, DCO=Director of Combat Operations, FDC=Fire Direction Control, HHB=Headquarters and Headquarters Battalion, PLT=Platoon, S-1=Personnel, S-2=Intelligence, S-3=Operations, S-4=Logistics, S-6=Communications.

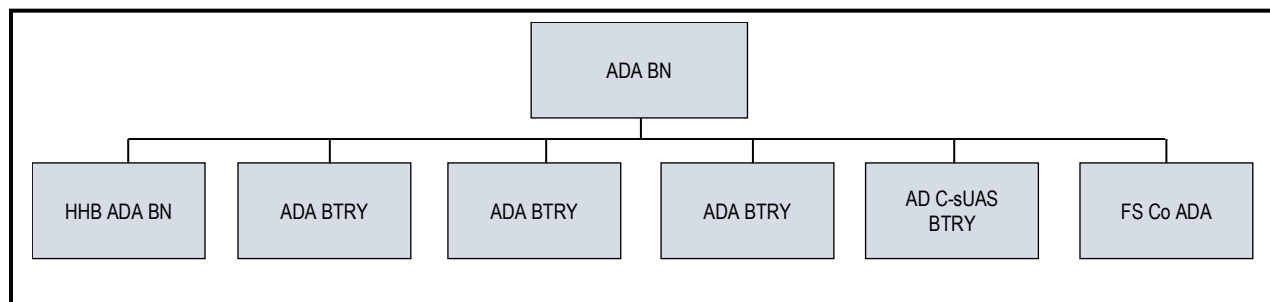


Figure 1-3. IFPC BN Organizational Structure

Notes: AD=Air Defense, ADA=Air Defense Artillery, BN=Battalion, BTRY=Battery, C-sUAS=Counter-small Unmanned Aircraft System, FS Co=Forward Support Company, HHB=Headquarters and Headquarters Battery.

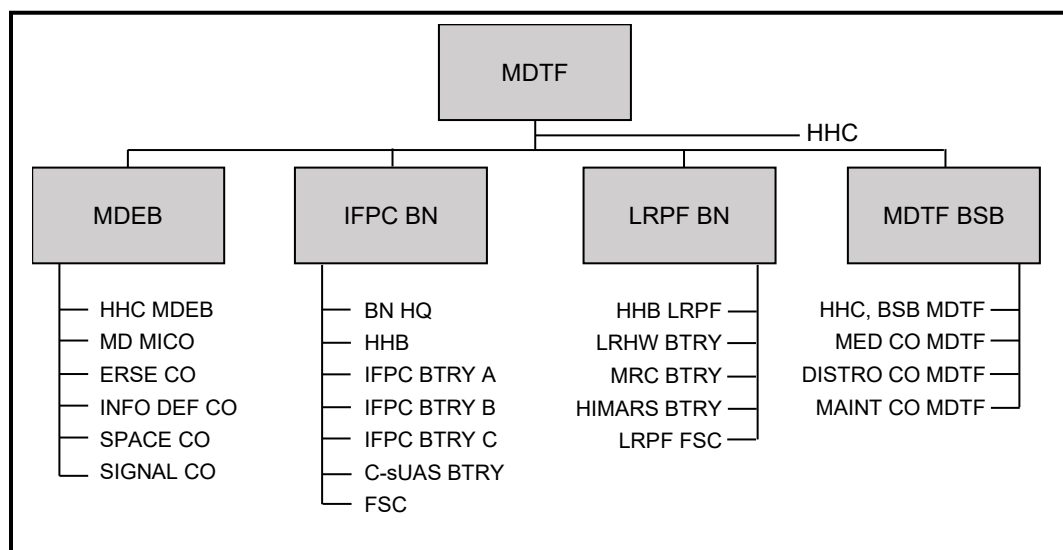


Figure 1-4. MDTF Full Organizational Chart Concept

Notes: BN=Battalion, BSB=Brigade Support Battalion, BTRY=Battery, C-sUAS=Counter-small Unmanned Aircraft System, CO=Company, DEF=Defense, DISTRO=Distribution, ERSE=Extended-Range Sensing and Effects, FSC=Forward Support Company, HHB=Headquarters and Headquarters Battery, HHC=Headquarters and Headquarters Company, HIMARS=High-Mobility Artillery Rocket System, INFO DEF=Information Defense, LRHW=Long-Range Hypersonic Weapon, LRPF=Long-Range Precision Fires, MAINT=Maintenance, MDEB=Multi-Domain Effects Battalion, MD MICO=Multi-Domain Military Intelligence Company, MDTF=Multi-Domain Task Force, MED=Medical, MRC=Mid-Range Capability.

1.4 Programmatic Environmental Assessment Scope and Methodology

This Programmatic Environmental Assessment (PEA) evaluates the environmental effects of implementing the proposed action. It evaluates the reasonably foreseeable effects of stationing and fielding the IFPC system at Army installations in the United States to support the defense of fixed and semi-fixed sites against cruise missiles, UAS, and large-caliber rockets during conflict.

Both active and reserve components make up the Army. The reserve component consists of the US Army Reserve and the Army National Guard (ARNG). If the consideration and analyses in this PEA are applicable to conditions local to the installations and no additional issues are identified, requirements of the Department of Defense (DoD) NEPA Implementing Procedures issued 30 June 2025 and Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*, can be met for other similar projects using this PEA and the completion of an installation-specific Record of Environmental Consideration (REC). A REC can be used for the installations discussed in this PEA if the analysis fully addresses the proposed action and is sufficient to determine the environmental effects of implementing it.

Active Army and Reserve components can tier from this PEA by incorporating it by reference. Other DoD agencies with a Cooperating Agency Agreement can also tier from this PEA. Preparing a supplemental Environmental Assessment is most appropriate if specific information regarding fielding, stationing, training, and maintenance for the IFPC system is not currently available for adequate analysis of

environmental effects at an installation discussed in this PEA. Tiering from this PEA is also appropriate for installations not discussed in this document, including ARNG installations, should the mission and needs of the Army require fielding IFPC systems to other installations. The PEA REC checklist is a tool to determine the need for tiered documentation and is provided in Appendix B.

At installations receiving the IFPC system or where the Army might conduct IFPC training, this PEA will facilitate compliance with the DoD NEPA Implementing Procedures. It will provide (1) a framework to address the reasonably foreseeable effects of this type of action, (2) a procedure to certify a complete understanding for all effects addressed in this PEA using an installation-specific REC, and (3) a procedure to facilitate the preparation of a focused, tiered, or supplemental NEPA document, if needed.

1.5 Public and Agency Involvement

The Army invites public participation in the PEA process. All agencies, organizations, and members of the public with a potential interest in the proposed action, including Native American Tribes and Native Hawaiian Organizations (NHO) were invited to review the documents and provide comments for consideration by Army decision makers. The NEPA process promotes open communication, which enables an improved decision-making process. A Notice of Availability was published on the US Army Environmental Command (USAEC) NEPA Documents website (<https://aec.army.mil/Outreach/NEPA-Documents/>) announcing the availability to the public of the PEA and the Finding of No Significant Impact (FONSI) for a 30-day public review and comment period.

Federal agencies (as lead agencies) may invite tribal, state, and local governments as well as other federal agencies with jurisdiction by law with special expertise as candidates for cooperating agency status in the NEPA process. The Department of the Air Force is participating as a cooperating agency because of the joint basing at JBER in Alaska.

Electronic copies of the two documents are available for download from the USAEC website. If a printed copy is desired, email a request to usarmy.jbsa.imcom-aec.mbx.nepa@army.mil or call the USAEC Public Affairs Office at 520-684-3758 and request a copy.

Submit electronic comments via email to usarmy.jbsa.imcom-aec.mbx.nepa@army.mil with the subject line "IFPC Public Comments" or written comments by US Mail to the following address:

ATTN: Mail Stop 112 (NEPA)
Public Comments
Commander USAEC
2455 Reynolds Rd
JBSA-Fort Sam Houston, TX 78234-7588

Inquiries or comments may also be made by calling the USAEC Public Affairs Office at 520-684-3758 or via email to usarmy.jbsa.imcom-aec.mbx.nepa@army.mil. Comments

received will be included as an attachment to the FONSI and incorporated as needed into supplemental NEPA documentation.

1.6 Regulatory Authority

The timing for implementing the proposed action is contingent upon coordination with applicable federal, state, and local entities. The Army prepared this PEA in compliance with the National Environmental Policy Act (Title 42 of the *United States Code* [USC] § 4321 *et seq.*) (NEPA); the US Department of Defense NEPA Implementing Procedures issued 30 June 2025; AR 200-1, *Environmental Protection and Enhancement*; and applicable Army NEPA guidance. The Army considered applicable federal laws and regulations during analysis of the effects of the proposed action on individual environmental and social resources.

1.7 Decision to be Made

The decision-makers have considered the effects analyzed in this PEA and determined that all reasonably foreseeable effects resulting from implementing the proposed action would be less than significant. The FONSI documents that decision. Before making a final decision to implement the proposed action—and at which installation(s) to field IFPC BNs or BTRYs—or to do nothing (the No Action Alternative), the decision-makers will consider relevant information, such as deployment time, cost, and strategic considerations. The Army decision-makers for the action are the Department of the Army's Deputy Chief of Staff, G-3/5/7 and Deputy Chief of Staff, ASA(IE&E).

SECTION 2 ALTERNATIVES

2.1 Development of Reasonable Alternatives

NEPA and the DoD NEPA Implementing Procedures provide guidance on the consideration of a reasonable range of alternatives for the proposed action. A proponent must consider the effects on the human environment of implementing the proposed action and a reasonable range of alternatives. To be “reasonable,” an alternative must meet the stated purpose of and need for the proposed action and be technically and economically feasible.

2.1.1 Alternatives Screening Criteria

The Army developed a set of criteria to use in assessing whether reasonable alternatives meet the purpose of and need for the proposed action. Any alternative considered for future analysis would need to meet the following requirements:

- **Command Asset Presence**—The installation must have a mission to provide air defense to Joint Force command assets at the strategic or operational level or assets that deploy to fixed or semi-fixed sites, such as an airfield or forward operating base. Colocation with supported forces enhances training and effectiveness of the supporting and supported force and is desired for the initial fielding actions.

The primary purpose is to provide AMD to higher headquarters units.

- **Cantonment Area Support Facilities**—The installation must have either (1) adequate cantonment area facilities for administrative, maintenance, motor pool, housing, and personnel support; (2) the space, funding, and ability to provide these adequate cantonment area facilities by the fielding deadline; or (3) adequate temporary facilities for IFPC BN and/or BTRY operations until permanent facilities can be procured.

Facilities with appropriate facility category codes (CATCD) must be available, be able to be made vacant, or be able to be modified before occupancy to meet the required standards and CATCD or have construction underway or planned so they would have the correct CATCD and be completed before system fielding. Facilities with an exception to the CATCD standard also are considered adequate.

- **Airspace**—Installations must have or have access to adequate restricted airspace, both laterally and vertically, that overlies Army training lands to contain activities dangerous to non-participating aircraft and allow realistic target maneuver.

IFPC system tactics and weapons require training using aerial targets that would be detected, tracked, engaged, and defeated. Targets must be free to maneuver in a manner like that of an enemy threat. The IFPC unit must be free to bring sensors and weapons to bear on the target. The airspace must overlay the ground footprint of ranges where the training would occur, with dimensions sufficient to allow realistic training, the free maneuver of targets, and containment

of any missile trajectories and falling debris from target engagement if live weapons are fired. In the event an IFPC unit would be required to train against large-caliber rockets, a higher maximum altitude could be required. The unit could train against large-caliber rockets during temporary duty at a different location. Target maneuver and weapons engagement activity must be contained within airspace that is monitored by the governing range control or land/airspace governing agency visually or with radar so nonparticipating aircraft can be detected. The controlling agency must have communication capability to warn and prevent the entry of nonparticipating aircraft or suspend IFPC system operations if a nonparticipating aircraft is detected within the protected airspace. If a training event involved live fire of missiles or the flight of UAS, it would require airspace clearance uniquely established by the governing range control or land/airspace governing agency.

- **Live-Fire Ranges**—The installation must have adequate live-fire ranges and related munition surface danger zones available or the capability to simulate the live-fire engagements.

Live-fire ranges to support the minimum requirements for the IFPC BN or BTRY training and certification as designated in authoritative Army training documents are required. Training requirements are measured in range days and can be met on existing primary or alternate ranges or new ranges under construction or planned, or through selective scheduling as facilitated by the Regionally Aligned Readiness and Modernization Model. Some installations (e.g., Fort Carson, Fort Wainwright, JBER, and JBLM) use training locations separate from the main installation. Certain live-fire training may be accomplished through appropriate simulations.

2.2 Alternatives Carried Forward for Analysis

The proposed action is to station and field IFPC BNs and BTRYs at multiple installations within the United States. The Army identified three alternative means of implementing the proposed action. The Army would choose to implement Alternative 1, Alternative 2, Alternative 3, or the No Action Alternative at each of the 14 installations listed in section 1.3. Similarly, the Army would determine which alternative to implement at an installation other than one of the 14 analyzed in the PEA, or at a US Army Reserve or ARNG installation, if one was selected to receive an IFPC weapon system.

2.2.1 Alternative 1

Field and station both an IFPC BTRY within a Maneuver-Short-Range Air Defense Capability (M-SHORAD) BN⁷ assigned to an Army Division together with an IFPC BN at one or more of the installations listed in section 1.3.

⁷ The M-SHORAD system is a Stryker vehicle-based, multi-mission mobile air defense system to improve the protection of tactical maneuver forces from aerial threats. The M-SHORAD is expected to field as a new BN with about 550 soldiers and 235 wheeled vehicles in a BN.

2.2.2 Alternative 2

Field and station up to nine IFPC BNs at up to nine installations selected from those listed in section 1.3.

2.2.3 Alternative 3

Field and station up to nine IFPC BTRYs at up to nine installations selected from those listed in section 1.3.

2.2.4 No Action Alternative

Under the No Action Alternative, the Army would not implement the proposed action. No IFPC BNs or BTRYs would be fielded to any installation and the Army would continue to rely on existing air defense assets to complete military operations. The No Action Alternative would not meet the purpose of and need for the proposed action. The No Action Alternative serves as a benchmark against which federal actions can be evaluated.

2.3 Alternatives not Carried Forward for Further Analysis

No alternatives were removed from consideration.

SECTION 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section explains the approach taken in this PEA to analyzing the effects of implementing the proposed action, the resource areas considered for analysis, the rationale for dismissing them from or retaining them for further evaluation, and the programmatic analysis of the retained resource areas.

3.1 Methodology for Analyzing Effects

The area affected (region of influence or ROI) and degree of effect of implementing an action are considered when determining the significance of potential effects on resources. The degree of effect considers whether the potential effects are short- or long-term and beneficial or adverse. These terms—as used in this PEA—are defined below.

- Short-term—Effects of the proposed action would last only as long as the action is being implemented. For example, the short-term effects of a construction project would cease once construction had ceased.
- Long-term—Effects of the proposed action would last beyond the implementation phase. For example, conversion of a wooded area to impervious ground would affect habitat availability well after construction had ceased.
- Beneficial—The proposed action would have a positive effect on or improve a resource.
- Adverse—The proposed action would have a negative effect on or be detrimental to a resource.

The degree of environmental beneficial and adverse effects is characterized as none, negligible, less than significant, significant but mitigable, and significant, as defined below:

- None—No effects on a resource would be expected. A proposed action would have no causal link with the resource area.
- Negligible—Effects would be expected but would not be perceptible or apparent. An environmental or socioeconomic resource could be affected but it would be difficult to attribute the effect causally to the proposed action.
- Less than significant—Effects would not be significant but would be perceptible and readily apparent. Additional care in following standard procedures or applying precautionary measures to minimize adverse effects could be required.
- Significant but mitigable—Effects would be significant, but measures are proposed to be implemented that would reduce the adverse effects to less than significant.
- Significant—Adverse effects would be obvious and short- or long-term and would seriously affect a resource. Mitigation measures would not be able to reduce the level of effect to less than significant.

Based on what is known about how the IFPC weapon system would be used at an installation, the Army analyzed the weapon system's use for potential effects on each resource area. The Army determined preliminarily which resource areas would not likely

be affected by implementing the proposed action and could be dismissed from further analysis of potential effects in the PEA, which ones required limited analysis, and which ones required detailed analysis. These approaches—dismissal, limited analysis, and detailed analysis—are described below.

- Dismissal—Eliminating a resource area because it is not likely to be affected.
- Limited analysis—Conducting limited analysis of a resource area because it is unlikely to be affected to more than a less-than-significant degree.
- Detailed analysis—Conducting a detailed analysis of a resource area because it could be affected to a significant but mitigable or significant degree.

The evaluation resulted in 10 resource areas being dismissed from analysis, four resource areas receiving limited analysis, and one resource area receiving a detailed analysis. Section 3.2 discusses the rationale for dismissing from analysis or analyzing each resource area.

3.2 Resource Areas and Rationale for Dismissal or Analysis

Resource areas considered for analysis in this PEA were air quality, airspace use, biological resources, cultural resources, electromagnetic spectrum, geological resources and soils, hazardous and toxic materials and wastes, human health and safety, land use, noise, socioeconomics (including protection of children), transportation and traffic, utilities and infrastructure, water resources, and aesthetics and visual resources. The ROI is the geographical area within which effects of implementing the proposed action could occur. The ROI varies by resource area.

This section discusses the ROI and threshold of significance for each resource area along with the rationale for dismissing it from or retaining it for further analysis in the PEA. In determining the level of analysis for each resource area in this PEA, the Army assumed that each installation would comply with Army policy and guidance; its own plans and programs (e.g., Integrated Natural Resources Management Plan [INRMP], Integrated Cultural Resources Management Plan [ICRMP], Hazardous Material Management Plan [HMMP], Integrated Training Area Management [ITAM], etc.); and applicable local, state, and federal laws and regulations.

3.2.1 Air Quality

ROI: The ROI for criteria pollutants and hazardous air pollutants (HAPs) is the air quality control region or regions (AQCR or AQCRs) in which the installation is located.

Threshold of Significance: Effects on air quality would be considered significant if they could contribute to a violation of any federal, state, or local air regulation.

Dismissal or Further Analysis: Further analysis (detailed).

Rationale: Equipment associated with the IFPC weapon system includes tactical vehicles and portable generators, which are exempt from air quality emissions reporting requirements under the Clean Air Act (CAA). As mobile sources, they have no federally enforceable emission limits under an installation's state operating permit. The Army used the US Air Force Air Conformity Applicability Model (ACAM) to estimate emissions and analyzed them in this PEA.

3.2.2 Airspace Use

ROI: The ROI for this resource area is the restricted area airspace associated with an installation and under the installation's control.

Threshold of Significance: Effects on airspace would be considered significant if they were to (1) undermine the safety of military, commercial, or civil aviation; (2) cause unacceptable conflicts, congestion, delays, or economic hardship for nonparticipating aircraft that would otherwise freely use the airspace; or (3) contribute to a violation of federal regulations.

Dismissal or Further Analysis: Further analysis (limited).

Rationale: Having adequate airspace for IFPC weapon system training is one of the selection criteria. Each receiving installation, therefore, would have the airspace required for system training. The IFPC main BTRYs are missile only and would train using simulations. (Field simulations involve successfully detecting, tracking, and locking a missile onto a target but not firing the missile. Missiles used during simulations generally are captive trainers with no rocket motor or live warhead.)

The C-sUAS BTRYs could use live fire by kinetic weapons of Fixed Site-Low, Slow, Small UAS Integrated Defeat System (FS-LIDS); Mobile-Low, Slow, Small Unmanned Aircraft Integrated Defeat System (M-LIDS); and Smart Shooter. The FS-LIDS kinetic weapon is the Coyote small, expendable, tube-launched drone interceptor (DOTE 2020). M-LIDS kinetic weapons are the Coyote drone interceptor and a 30-millimeter (mm) chain gun (Army Technology 2022). The Smart Shooter is a sighting system that can be attached to a soldier's assault weapon such as an M4 Carbine firing 5.56-mm ammunition (Frantzman 2022).

The proposed action would not involve the use of aircraft. No live-fire training of the IFPC weapon system would be conducted, but live-fire training by the C-sUAS BTRY using kinetic weapons could require temporary or even new permanent airspace restrictions at an installation. This PEA analyzes the potential effect of this training on airspace use.

3.2.3 Biological Resources

ROI: The ROI for biological resources includes all areas of an installation on which biological resources are present. They comprise native and naturalized plants and animals and the habitats in which they occur, including vegetation; wildlife; and threatened, endangered, and sensitive species.

Threshold of Significance: Effects on biological resources would be considered significant if they were to result in substantial permanent conversion or the net loss of habitat, long-term loss or impairment of a substantial portion of local species-dependent habitat, or unpermitted or unlawful "take" of a species protected under the Bald and Golden Eagle Protection Act of 1940 (BGEPA) (16 USC §§ 668–668c), Endangered Species Act of 1973 (ESA) (16 USC § 1531 *et seq.*), Marine Mammal Protection Act of 1972 (MMPA) (16 USC § 1361 *et seq.*), or Migratory Bird Treaty Act of 1918 (MBTA) (16 USC §§ 703–712), among others.

Dismissal or Further Analysis: Further analysis (limited).

Rationale: The potential for the proposed action to affect biological resources is limited. Construction is not part of the proposed action, though installations could determine the need for construction upon a decision to field an IFPC weapon system to the installation. Limited ground disturbance is expected on ranges. Vegetation clearing might be required to create emplacement sites at installations without Sentinel radar, with limited effects on biological resources. An “emplacement site” is a cleared area of land (up to a few acres) where a Sentinel radar can be pulled in and secured into position. Preparing emplacement sites would not involve construction (e.g., cement pads or digging). The sites would be located within existing maneuver ranges but could require removal of vegetation (e.g., shrubs and trees). The locations of new emplacement sites for IFPC training are not known at this time so it is not known whether vegetation would have to be removed. Beyond the creation of emplacement sites, wheeled vehicle use to, on, and from ranges is the only activity foreseen that would cause ground disturbance. No ground disturbance that would involve digging or soil displacement is foreseen. If ground disturbance or land clearing was required, it would be coordinated with the Natural Resources Manager (NRM) and Range Management. All IFPC activities—including any vegetation clearing—would be conducted in accordance with an installation’s INRMP, which includes ITAM program components, other natural resource management plans, Stormwater Pollution Prevention Plan, and federal natural resource conservation laws such as the BGEPA, ESA, and MBTA.

Other aspects of the proposed action that could affect biological resources are the dust released and noise when creating clearings, the potential for wildfires from vehicle and weapon use, and the potential for the Sentinel radar to affect wildlife. None of these effects would be expected to be significant. They are addressed further in section 3.4.3.

3.2.4 Cultural Resources

ROI: The ROI for cultural resources is the cultural resources managed by an installation. Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes; and sacred sites, traditional cultural properties, and/or historic landscapes.

Threshold of Significance: Effects on cultural resources would be considered significant if they could (1) result in adverse effects, as defined by the National Historic Preservation Act of 1966 (NHPA) (54 USC § 300101 *et seq.*), on a historic property listed or eligible for listing in the National Register of Historic Places (NRHP) that are not resolved through a Memorandum of Agreement or Programmatic Agreement with the State Historic Preservation Officer (SHPO), and, in some cases, with the Advisory Council on Historic Preservation (ACHP) (through Army Alternate Procedures or ACHP Program Comments), or (2) create conditions that would restrict the traditional use of sacred or ceremonial sites or resources by a federally recognized Tribe or Tribes or a NHO, without consultations on a government-to-government level with the affected Tribe(s) or NHO. Also significant would be any action that results in a violation of the Antiquities Act, Historic Sites Act, Archeological and Historic Preservation Act, Archeological Resources Protection Act, Native American Graves Protection and

Repatriation Act of 1990, American Indian Religious Freedom Act, or Executive Order 13007.

Dismissal or Further Analysis: Further analysis (limited).

Rationale: Construction is not part of the proposed action, though installations could determine the need for construction upon a decision to field an IFPC weapon system to the installation. Limited ground disturbance is anticipated on ranges. The potential for the proposed action to affect cultural resources, therefore, is limited. The potential for IFPC activities to affect cultural resources would be no greater than that of other installation activities involving similar equipment (i.e., tactical vehicles and small arms). All IFPC activities would be conducted in accordance with an installation's ICRMP and adhere to the terms of any applicable Programmatic Agreements, Army Alternative Procedures with Historic Property Components, or Memorandums of Agreement that an installation may operate under. The installation Cultural Resources Manager (CRM) would coordinate review of the proposed undertaking with appropriate parties.

3.2.5 Hazardous and Toxic Materials and Wastes

ROI: The ROI for hazardous and toxic materials and wastes includes installation areas where hazardous and toxic materials or wastes are managed, used, or generated.

Threshold of Significance: Effects on hazardous and toxic materials and wastes would be considered significant if implementing an action would result in noncompliance with applicable federal or state regulations or increase the amounts of waste generated beyond installation management procedures, capacities, or permitting.

Dismissal or Further Analysis: Further analysis (limited).

Rationale: Aspects of the proposed action involving the use of hazardous materials or generation of hazardous waste would be associated with the storage, maintenance, and use of tactical vehicles and some range training activities. Routine maintenance of the vehicles would increase the use of hazardous materials; petroleum, oil, and lubricants (POL); fuel; and coolants and generate hazardous waste. These materials would be used or generated similarly to how they already are used or generated during vehicle maintenance activities. IFPC training on ranges involving targeting and destroying UAS with small-arms fire would likely generate hazardous debris from UAS components such as rechargeable batteries. Debris from UAS targets downed during training would be collected from range areas deemed safe and properly managed. Debris falling into an impact area or dudded range area would remain per the Military Munitions Rule (40 *Code of Federal Regulations* [CFR] Parts 260–270) and installation range rules and procedures. Debris remaining in an impact area or dudded range area would be removed during cleanup activities conducted after range closure.

Hazardous materials, POL, and batteries are commonly used at installations and those used in IFPC weapons system activities would be managed in accordance with federal, state, and local regulations and by each installation following its established installation management programs (e.g., HMMPs; Hazardous Waste Management Plans; and Spill Prevention, Control, and Countermeasure (SPCC) Plans) and the standard operating procedures (SOPs) in them. Use of hazardous materials and generation of hazardous

waste would be within permitted capacities and, where appropriate, would be recycled as prescribed in installation pollution prevention programs.

This resource area was not dismissed because fielding the IFPC tactical vehicles would require routine maintenance and the UAS targets would contain hazardous components. Although the materials are commonly used at installations, each installation would need to ensure that the materials are addressed in its management programs and plans and that introduced quantities are within permitted limits.

3.2.6 Electromagnetic Spectrum

ROI: The ROI for this resource area is the installation and surrounding areas.

Threshold of Significance: Effects on the electromagnetic spectrum would be considered significant if activities associated with IFPC systems would interfere with existing wired or wireless communications on or off an installation.

Dismissal or Further Analysis: Dismissal.

Rationale: The IFPC weapon system would comply with DoD Directive (DoDD) 3222.3, *DoD Electromagnetic Environmental Effects (E3) Program*. For the most part, all communication related to training, operation, and maintenance of the IFPC equipment would be handled by communication frequencies used in Army day-to-day operations. The IFPC weapon system uses the Sentinel radar for target acquisition and would use wireless communication, which would comply with DoDD 3222.3. The Sentinel system would have to be administratively cleared for usage at installations that do not already host it. An integrated fire control network would be needed to enable multiple systems to communicate with each other. These systems would be run wirelessly, and the potential for wireless system interference would exist. The IFPC systems, Sentinel radar, and entire integrated fire control network, however, would have to comply with DoDD 3222.3, the policy that requires that military platforms, systems, subsystems, and equipment be mutually compatible in their electromagnetic operational environment. The proposed action, therefore, would be expected to have no effects on the electromagnetic spectrum.

3.2.7 Geological and Soil Resources

ROI: The ROI for this resource area is the geology and soils on the installation. Geology includes Earth's physical structure and substance and the processes that act on it. Soils are the upper layer of earth in which plants grow or could grow.

Threshold of Significance: Effects on geological features would be considered significant if they would alter unique, sensitive, or protected geological features, such as karst features, playas, or lava features, or would destabilize geological features. Effects on soils would be considered significant if soil disturbance or loss was substantial enough to impair plant growth, decrease the suitability of an area for its intended military use, or cause excessive soil compaction or uncontained soil erosion.

Dismissal or Further Analysis: Dismissal.

Rationale: Ground-disturbing activities would be expected to occur in previously disturbed areas and be limited to vegetation removal. No disturbance of geological

features would be expected and soils would remain intact. No ground disturbance that would involve digging or soil displacement is foreseen. If ground disturbance was required, it would be coordinated with the NRM and Range Management. All IFPC activities would be conducted in accordance with an installation's INRMP, which includes ITAM program components, and other natural resource management plans. Soil compaction could occur on ranges from vehicle use for IFPC activities. Any excessive soil compaction or uncontained soil erosion would be corrected as necessary in accordance with installation ITAM protocols.

3.2.8 Human Health and Safety

ROI: The ROI for this resource area includes the personnel at installations where the proposed action would occur and potentially affected adjacent areas.

Threshold of Significance: Effects on human health and safety would be considered significant if they posed serious threat of harm to any person or created an uncontrolled hazard to health, safety, or property.

Dismissal or Further Analysis: Dismissal.

Rationale: Health and safety risks would be associated with the proposed action, particularly those involved with the use of military equipment. The proposed action would involve many activities associated with military equipment use and training, such as vehicle maintenance, driving on roads and ranges, commuting to and from installations, and live-fire training. These are common activities at all military installations and DoD has a suite of safety directives, instructions, and standards for all aspects of activities on installations. The overriding instruction is DoD Instruction (DoDI) 6055.01, *DoD Safety and Occupational Health (SOH) Program*. Other DoDIs, however, are applicable to specific activities, such as DoDI 6055.04, *DoD Motor Vehicle and Traffic Safety*, and DoDI 6055.05, *Occupational and Environmental Health (OEH)*, which relates to safety measures associated with exposure to chemical, physical, and biological hazards. Range safety requirements that include live-fire exercises are provided in Department of the Army Pamphlet 385-63, *Range Safety*. Installations have adapted the safety procedures and precautions in these DoD documents to the particular circumstances at the installations as installation-specific safety programs. In addition, training for all new military equipment, such as the IFPC weapon system, includes equipment handling for the safety of all personnel involved. All personnel on military installations must be familiar with and abide by all DoD and installation safety directives, instructions, and standards. Compliance with safety protocols and the IFPC weapon system training soldiers would receive would ensure the proposed action would not be expected to have significant effects on human health and safety at any receiving installation.

3.2.9 Land Use

ROI: The ROI for this resource area is land use on the installation and adjacent properties. All land on an installation is designated for specific uses in installation master plans and area development plans.

Threshold of Significance: Effects on land use would be considered significant if the proposed action was to create a land use incompatibility that had not previously existed.

Dismissal or Further Analysis: Dismissal.

Rationale: No new facilities are proposed to be constructed to support the proposed action. Activities associated with the IFPC weapon system would be conducted in appropriate locations (e.g., training on suitable ranges and maintenance in suitable bays). No land use changes would be required under the proposed action and no land use incompatibilities would be created. Although land use incompatibilities can be created if weapons training noise extends to off-post lands, IFPC weapon system training would not be expected to change existing range noise contours (see section 3.2.10) and would, therefore, not be expected to create any incompatibilities with off-post land uses.

3.2.10 Noise

ROI: The ROI for this resource area is the noise environment on the installation and adjacent areas.

Threshold of Significance: Effects on the noise environment would be considered significant if noise caused by implementing the proposed action was to interfere with normal daily activities or exceed an applicable environmental noise ordinance.

Dismissal or Further Analysis: Dismissal.

Rationale: Construction is not part of the proposed action, though installations could determine the need for construction upon a decision to field an IFPC weapon system to the installation. Under the proposed action, no new permanent sources of noise would be established at any installation. Noise from training, which would be conducted on appropriate ranges, would result from use of UAS and small arms used to destroy them. Such equipment and weapons are typical of the uses for which Army ranges exist. Range noise contours differ depending on the types of weapons designated to be used on them. IFPC training would be expected to occur on ranges where the noise from the weapons used would stay within the range's established noise contours. No changes to range noise contours, therefore, would be expected to be needed and noise from IFPC weapon system training would not be expected to affect noise-sensitive land uses. The IFPC launcher would be used in a simulation mode only, with no live fire occurring. The proposed action, therefore, would not be expected to result in changes to the noise environment at any installation.

3.2.11 Socioeconomics (including Protection of Children)

ROI: The ROI for socioeconomics and protection of children is the installation and the immediate surrounding communities and counties. This includes communities on and off the installation where stationed soldiers may live, shop, and commute. Protection of children specifically addresses children in the area who might be affected by an action.

Threshold of Significance: Effects on socioeconomics would be considered significant if they were to cause substantial changes to sales volume, income, employment, or population. Effects on protecting children would be considered significant if any

significant adverse effects from other resource areas resulted in disproportionate environmental health or safety risks to children.

Dismissal or Further Analysis: Dismissal.

Rationale: Fielding of the IFPC weapon system and the associated soldiers and their dependents would result in a negligible effect on socioeconomic conditions at all 14 installations assessed in the PEA. As the proposed action would be implemented over several years, the IFPC soldiers would not all arrive at the same time. Some installations might have the capacity to absorb the IFPC workload without requiring additional personnel, and soldiers could be reassigned either from within an installation's existing manpower structure or from other Army installations. If all soldiers were stationed in year one, the additional personnel and dependents would amount to about a 1 percent or less increase in the regional population for each of the installations and have a negligible effect on regional economies.

Implementing the proposed action would not be expected to result in environmental health or safety risks to children per Executive Order (EO) 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (1997). It would not expose children to dangerous situations or harmful materials that would jeopardize their health or safety. Activities associated with the proposed action would be located away from residential communities. The IFPC weapon system would be stored and maintained in secure locations on Army installations. It would be operated on existing Army installation ranges, which are areas isolated from the general population. All these actions would be conducted in compliance with applicable DoD and other federal and state agency laws and regulations. Although no socioeconomic effects are anticipated, each installation receiving the IFPC weapon system would determine whether additional site-specific NEPA documentation would be required to address potential socioeconomic effects.

3.2.12 Transportation and Traffic

ROI: The ROI for this resource area is the primary, secondary, and tertiary roads on which the IFPC weapon system would be transported and used as well as the transportation network surrounding an installation.

Threshold of Significance: Effects on transportation and traffic would be considered significant if the proposed action could cause a reduction by more than two levels of service on roads or at intersections within the ROI, measurably degrade traffic flow during peak hours, or measurably increase the need for road repair and maintenance.

Dismissal or Further Analysis: Dismissal.

Rationale: As noted in the socioeconomics discussion in section 3.2.11, if all soldiers associated with the IFPC stationing at an installation were stationed in year one, the additional personnel and their dependents would amount to a 1 percent or less increase in regional population for each installation. The negligible population increase would have no measurable effect on traffic or the regional transportation network of any installation.

3.2.13 Utilities and Infrastructure

ROI: The ROI for this resource area is the utility systems, infrastructure, and facilities of an installation and the surrounding communities. It includes the electricity, gas, water, wastewater, and communication systems and infrastructure as well as buildings, roads, and so forth.

Threshold of Significance: Effects on utilities and infrastructure would be considered significant if the proposed action was to degrade a utility system or infrastructure facilities or systems to the point at which reliability of service is reduced or decrease a system's capacity enough to require a system improvement or expansion.

Dismissal or Further Analysis: Dismissal.

Rationale: Having adequate permanent or temporary facilities to accommodate the IFPC stationing or the ability to provide those facilities by the fielding deadline is one of the screening criteria. The proposed action, therefore, would create no direct need for changes to utility systems or the infrastructure or facilities on an installation. The increase in installation and regional populations would be negligible and would not be enough to degrade or reduce the reliability or capacity of any system.

3.2.14 Water Resources

ROI: The ROI for this resource area is watersheds, surface waters, groundwater resources, wetlands, and floodplains on an installation and, for an installation in a state coastal zone management area, also the coastal zone.

Threshold of Significance: Effects on water resources would be considered significant if the proposed action could cause a water resource to degrade to the point of violating a legal standard or a federal or state policy regarding that water resource.

Dismissal or Further Analysis: Dismissal.

Rationale: Activities on military installations are conducted in accordance with numerous legal requirements, including those of the Clean Water Act; EO 11988, *Floodplain Management*; and EO 11990, *Protection of Wetlands*; and with installation plans and protocols meant to protect natural resources, including waters. Those plans include Stormwater Pollution Prevention Plans; INRMPs, which include provisions for protecting water resources; and ITAM components, which specify responsibilities for maintaining training lands to ensure the Army can meet its training requirements. All activities at an installation associated with the IFPC weapon system would be conducted in accordance with applicable laws, regulations, and plans and would not be expected to degrade any water resource.

3.2.15 Aesthetics and Visual Resources

ROI: The ROI for this resource area is the landscape components and viewsheds on and adjacent to an installation.

Threshold of Significance: Effects on aesthetics and visual resources would be considered significant if they were to substantially alter the character of a landscape,

particularly if landscape features became visually incompatible, or if they were to impair the view of an important or protected landscape or its features.

Dismissal or Further Analysis: Dismissal.

Rationale: The proposed action would result in no landscape changes. No new facilities would be constructed to accommodate stationing and fielding the IFPC weapon system. Training would be conducted on existing ranges. No changes to or effects on the aesthetic or visual resources of an installation or its surroundings would be expected to result from implementing the proposed action.

3.3 Methodology for Analysis

This PEA discusses each of the five resource areas carried forward for further analysis on a programmatic level. Section 3.4 describes the affected environment for each resource area and explains how the proposed action could affect that resource area. All aspects of the proposed action as described in section 1.3 have been considered in determining potential effects, although not all aspects of the proposed action would affect each resource area. Because the Army considers the potential effects of the proposed action equally applicable to all 14 installations evaluated in the PEA, it has assessed those effects without reference to a particular installation.

Details such as the ranges on which each installation's IFPC weapon system training would occur are not known at this time. Once specific details for implementing the action at an installation are known, the effects of implementing the action at that installation will be reevaluated by installation staff in an appropriate REC or NEPA document as determined using the checklist provided in Appendix B.

3.4 Programmatic Analysis of Resource Areas

This section discusses the affected environment common across the proposed installations and the environmental consequences to the remaining five resource areas that potentially could result from implementing the proposed action alternatives. Under the No action Alternative, all activities on each installation would continue as currently implemented. The status quo would be maintained and there would be no change in environmental effects.

3.4.1 Air Quality

Affected Environment

Air Quality Standards. Air quality is measured by the amount of pollution in the air. To protect public health and the environment, USEPA established federal primary and secondary National Ambient Air Quality Standards (NAAQS) in compliance with the CAA. Primary standards protect public health and secondary standards prevent environmental and property damage (USEPA 2024). The standards specify short- and long-term acceptable concentration levels of six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide, ground-level ozone (O₃), particle pollution or particulate matter (PM), and sulfur dioxide (SO₂).

States have the authority to adopt emission requirements more stringent than the federal standards, though most states adopt the federal standards. Alaska, Colorado, and Hawaii have more stringent standards. Federal facilities are subject to the standards and other requirements of the state in which they are located.

States consider the effects of all past and present emissions in the state in the State Implementation Plan (SIP), which details how the state implements, maintains, and enforces clean air standards and other CAA requirements.

Attainment Status. AQCRs meeting the NAAQS for all six criteria pollutants are designated as attainment areas, AQCRs in violation of one or more criteria pollutant standards are designated as nonattainment areas (NAAs) for each criteria pollutant violated, and AQCRs that do not have enough data available for USEPA to determine whether they meet the NAAQS are designated as unclassifiable areas (USEPA 2024).

General Conformity. The *General Conformity Rule* of the CAA requires that federal agencies demonstrate that their action or project will conform to the applicable SIP. At the time this PEA was being prepared, all or portions of Fort Bliss, Fort Carson, Fort Knox, Fort Wainwright, and JBLM contained nonattainment or maintenance areas for one or more NAAQS. Other installations were in attainment areas. **Table 3-1** lists the attainment status and NAAQS status at the installations within nonattainment or maintenance areas.

Table 3-1. NAAQS Status at Installations within Nonattainment or Maintenance Areas

Installation	Attainment Status, Area, and NAAQS Violation(s)
Fort Bliss	Marginal nonattainment in El Paso County for 8-hour O ₃ (2015 standard)
Fort Carson	Moderate maintenance for PM ₁₀ (1987 standard) in Fremont County Moderate maintenance for CO (1978 standard) in El Paso County
Fort Knox	Moderate nonattainment for 8-hour O ₃ (2015 standard) in Bullitt County
JBLM	Moderate maintenance for CO (1971 standard) Pierce County
Fort Wainwright	Serious nonattainment PM _{2.5} 24-hour (2006 standard) Serious maintenance for CO across portions of installation

Federal actions with emissions clearly at or below *de minimis* levels are exempt from the General Conformity Rule (USEPA 2024). Federal agencies can demonstrate SIP conformity with an air quality modeling demonstration. **Table 3-2** lists *de minimis* levels for federal actions in NAAs.

Many installations hold a Title V Federal Operating Permit issued by their state that covers installation-wide emissions from stationary sources for both criteria pollutants and HAPs. Mobile sources are not covered under permits and tactical military vehicles are exempt from motor vehicle standards. Therefore, the stationing and fielding of IFPC BNs or BTRYs would not require changes to existing Title V Federal Operating Permits.

Common Environmental Consequences

Long-term, less-than-significant adverse effects on air quality would be expected to result from implementing the proposed action. The calculated emissions of each criteria pollutant would be below the respective significance indicator.

Table 3-2. De minimis levels for Nonattainment Areas

Pollutant	De minimis level
O₃ (VOCs or NO_x):	Tons/year
Serious NAAs	50
Severe NAAs	25
Extreme NAAs	10
Other ozone NAAs outside an ozone transport region	100
Other ozone NAAs inside an ozone transport region:	Tons/year
VOC	50
NO _x	100
CO: All maintenance areas	100
SO ₂ or Nitrogen dioxide: All NAAs	100
PM₁₀:	Tons/year
Moderate NAAs	100
Serious NAAs	70
PM_{2.5} (direct emissions, SO₂, NO_x, VOC, and ammonia):	Tons/year
Moderate NAAs	100
Serious NAAs	70
Pb: All NAAs	25

Notes: 40 CFR § 93.153(b)(1) – For purposes of paragraph (b) of this section these rates apply in NAAs. Nitrogen oxides = NO_x; VOC = volatile organic compound.

Alternative 1. Long-term, less-than-significant adverse effects on air quality at receiving installations would be expected to result from operational emissions attributable to additional personnel, tactical vehicles, and portable generators. New tactical military vehicle sources of air emissions would not be subject to federal air permitting regulations, including Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, or New Source Performance Standards.

ACAM was used to estimate emissions resulting under Alternative 1 (**Table 3-4**). Changes in air quality would primarily come from an increase in personnel commuting to work and operations of tactical vehicles; portable generators also would contribute emissions, though to a lesser degree. No new stationary sources of air emissions would be established. Construction is not part of the proposed action, though installations could determine the need for construction upon a decision to field an IFPC weapon system to the installation. On average, the 735 additional soldiers at each installation would each be expected to commute 20 miles round trip. The operation of an estimated 100 new tactical vehicles and 190 medium tactical vehicles, trucks, or vans would be expected to travel 500 miles per year. These emissions were assumed to be similar to the emissions of an off-highway truck towing 9,100 kilograms. Emissions from 140 trailers and 165 portable generators were also assumed during operations. Air emissions would not exceed the significance indicators or contribute to a violation of any federal, state, or local air regulation.

Table 3-3. IFPC Alternatives Modeled Emissions Compared to Significance Indicators

Pollutant	Operational emissions (tpy)			Significance indicator (tpy)	Exceedance (Yes or No)
	Alternative 1	Alternative 2	Alternative 3		
CO	45	34	11	250	No
NH ₃	0.17	0.13	0.04	250	No
NO _x	24	18	6	250	No
Pb	0.0	0.0	0.0	25	No
PM ₁₀	1.74	1.31	0.44	250	No
PM _{2.5}	1.69	1.27	0.42	250	No
SO _x	1.14	0.85	0.28	250	No
VOC	5.43	4.07	1.36	250	No

Note: VOC = volatile organic compound.

Source: USAF 2020.

Alternatives 2 and 3. The effects of implementing alternatives 2 or 3 on air quality at an installation would be expected to be similar to the effects of Alternative 1. Alternative 2 would involve fewer personnel and tactical vehicles than Alternative 1, with slightly lower levels of air pollutant emissions, and Alternative 3 would involve the fewest numbers of personnel and vehicles and therefore the lowest level of air pollutant emissions (**Table 3-4**).

No Action Alternative. No adverse effects on air quality would be expected under the No Action Alternative. No IFPC BN or BTRY would be fielded at any installation. Existing conditions for air quality would be unaffected.

3.4.2 Airspace Use

Affected Environment

The affected environment for airspace use is the restricted area airspace designated by the Federal Aviation Administration (FAA) that is associated with a military installation and under the installation's control. The FAA manages nearly all airspace within the United States and its territories. It recognizes the military's need to conduct certain flight operations and training within airspace that is separated from that used by commercial and general aviation. Restricted areas are a type of special use airspace within which all IFPC training would occur at an installation (FAA 2023a).

As permitted under 14 CFR Part 73, activities occurring in special use airspace either are confined to that airspace because of their nature or require limitations on aircraft that are not a part of those activities. Military operations in restricted areas pose a substantial danger to nonparticipating aircraft entering the restricted area during military operations.

Restricted area airspace is identified on FAA sectional aeronautical charts with the letter "R" followed by a dash, a four-digit number, and possibly a letter. For example, "R-5201" is a restricted area associated with Fort Drum, NY. Sectional aeronautical charts contain

tables of information about the airspaces. **Table 3-5** provides information from the New York sectional chart for R-5201.

Table 3-5. Fort Drum Airspace

Restricted area	Altitude	Time of use
R-5201	To 23,000 feet	Continuous: 1 Apr–30 Sep 0600-1800: 1 Oct–31 Mar Other times by Notice to Air Missions 48 hours in advance

Source: FAA 2025 (New York Sectional Aeronautical Chart).

Airspace is defined in vertical and horizontal dimensions and by time. Use of R-5201 is continuously restricted from April 1 to September 30 to an altitude of 23,000 feet and from 6 a.m. to 6 p.m. from October 1 to March 31 to the same altitude. A Notice to Air Missions is a notice of information about flight operations not known far enough in advance to be publicized otherwise (FAA 2023b). An installation can request restricted use of R-5201 outside the noted times and dates and the FAA will publish it as a Notice to Air Missions at least 48 hours in advance of the restriction.

Common Environmental Consequences

No effects to less-than-significant adverse effects on airspace use would be expected to result from implementing the proposed action. IFPC training activities conducted within established restrictions on airspace would have no adverse effects on airspace use. Each receiving installation would have range areas with restricted airspace to various altitudes to safely segregate all non-participating private, commercial, and military aircraft activity from weapon system training. If other DoD or ARNG airspace could be affected, coordination would be required. Temporary flight restrictions (TFRs) issued to accommodate IFPC training activities would have negligible adverse effects on non-participating aircraft use of airspace, and permanent new airspace use restrictions would have less-than-significant adverse effects on nonmilitary use of airspace. (TFRs are short-term additions to the time, date, and/or altitude restrictions already established for an airspace during which only aircraft participating in the training or exercise may enter the airspace [FAA 2023c].)

Alternatives 1, 2, and 3. The discussion of effects above applies to all three action alternatives, differing only in the degree of effect. Alternative 1, expected to involve more frequent IFPC weapon system training than the other two alternatives, would be expected to result in TFRs for temporary airspace use restrictions most often. Slightly fewer TFRs would be expected to be needed at an installation receiving only an IFPC BN, and still fewer TFRs would be expected to be needed at an installation receiving only an IFPC BTRY.

A requirement for a new permanent airspace restriction or permanent changes to existing restricted airspace would be expected to depend more on the type of weapon being used than the frequency of use. Therefore, the likelihood of needing such changes would not be expected to differ among the action alternatives. An installation requesting a restricted airspace change would conduct a NEPA review of the proposed change and FAA would issue a ruling on the proposed change. A permanent new

airspace restriction or permanent changes to existing restricted airspace would permanently constrain use of the airspace by nonmilitary aircraft during the newly established restrictions, resulting in long-term less-than-significant adverse effects on nonmilitary use of the airspace.

No Action Alternative. No adverse effects on airspace use would be expected under the No Action Alternative. No IFPC BN or BTRY would be fielded at any installation and new weapon systems training would not occur. No changes to restricted airspace use would be required.

3.4.3 Biological Resources

Affected Environment

The term “biological resources” refers to living organisms (biota) and the living landscape (habitat and ecosystems). Biological resources include vegetation, wildlife, and special status species.

Biological resources on DoD installations are managed to be ecologically sustainable. Therefore, DoD installations take an ecosystem-based approach to biological resources management. Ecosystem management principles and guidelines are articulated in DoDI 4715.03, *Natural Resources Conservation Program* (USD(A&S) 2018b) and DoD Manual 4715.03, *Integrated Natural Resources Management Plan (INRMP) Implementation Manual* (USD(A&S) 2018a), which emphasized the importance of managing biological resources (and other natural resources) on installations with an ecosystem management approach.

The Sikes Act (16 USC § 670a) requires that biological resources on military installations be conserved and rehabilitated. To comply with the statute, installations with significant natural resources prepare and implement installation-specific INRMPs. The overriding directive of natural resources management on DoD lands is to conserve installation lands, waters, and coastal resources to support mission-related activities. Natural resources conservation programs guarantee continued access on installations for realistic military training and testing and sustainment of the long-term ecological integrity in accordance with DoD Manual 4715.03, *Integrated Natural Resources Management Plan (INRMP) Implementation Manual*.

Many installations have plans for specific aspects of natural resources management, including Integrated Wildfire Management Plans, Integrated Pest Management Plans, Forest Management Plans, and Fisheries Management Plans. Each of these plans is specific to the natural resources of the installation and provides guidance to installation personnel and contractors on natural resources management.

Incorporated into an INRMP and other installation natural resources management plans is compliance with federal natural resources conservation laws, including the BGEPA, ESA, MBTA, and MMPA. If federally protected species are present on an installation, management measures for protecting the species and their habitats are incorporated into species- and installation-specific endangered species management components of the INRMP to ensure compliance with federal legal protections and DoD natural resource policies. INRMPs are to be reviewed for operation and effect by an installation every 5 years and are assessed internally and by the appropriate federal agency (e.g.,

US Fish and Wildlife Service [USFWS] or National Marine Fisheries Service) and state natural resources agency annually, and undergo minor revisions as needed. Other natural resources management plans (fisheries management, wildland fire management, etc.) are reviewed and revised as necessary.

INRMPs include aspects of the Sustainable Range Program (SRP), which supports both near- and long-term training. The SRP is incorporated into the Range Complex Master Plan, which identifies range and maneuver land requirements needed to support mission readiness activities.

ITAM is a core component of the SRP used for maintaining training land to help the Army meet its training requirements. The ITAM program integrates mission requirements with environmental management practices and establishes the policies and procedures necessary to achieve sustainable use of training and testing lands. ITAM comprises five components:

- Land Rehabilitation and Maintenance, which is the primary program, uses land management practices to repair and rehabilitate training lands.
- Range and Training Land Assessment is used to collect and analyze land condition information to ensuring training and testing lands can support training loads. Information gathered through it feeds Training Requirements Integration decision support and the Land Rehabilitation and Maintenance project development process.
- Sustainable Range Awareness fosters conservation awareness by providing training and educational materials and having the command emphasize the importance of environmental stewardship. This ITAM component applies to commanders, unit leaders, soldiers, and others using installation training areas.
- Training Requirements Integration coordinates training needs with other installation plans to provide information and analysis that assist with range and training land planning, scheduling, maintenance, and modernization. Information is obtained from various installation offices and environmental compliance, range facilities, and landscape condition requirements are considered in developing range and training land management decisions.
- SRP Geographic Information System (GIS) is used to create, analyze, and manage standardized spatial information for conducting training missions on Army ranges and training lands.

Federally protected species. Each Army installation manages federally protected species in accordance with the goals and objectives of the installation's INRMP, which incorporates management measures required to comply with BGEPA, ESA, MMPA, MBTA, and federal regulations as well as certain state and local natural resource management laws, regulations, and policies. Each installation with federally protected species incorporates species- and installation-specific endangered species management components of the INRMP, as required in AR 200-1, *Environmental Protection and Enhancement* (HQDA 2007). **Table 3-6** lists some but not all federally protected species common to many of the installations discussed in this PEA.

Table 3-6. Federally Protected Species Common to Assessed Installations

Common name	Scientific name	Federal status	Installation occurrence
Bald eagle	<i>Haliaeetus leucocephalus</i>	Protected under BGEPA	See Table 3-8
Golden eagle	<i>Aquila chrysaetos</i>	Protected under BGEPA	See Table 3-8
Gray bat	<i>Myotis grisescens</i>	Endangered	Forts Campbell and Knox
Indiana bat	<i>Myotis sodalis</i>	Endangered	Forts Campbell, Knox
Monarch butterfly	<i>Danaus plexippus</i>	Proposed threatened	Forts Bliss, Campbell, Carson/PCMS, Hood, Drum, Knox, Bragg, Riley, Sill, and Stewart; and JBLM
Northern long-eared bat	<i>Myotis septentrionalis</i>	Endangered	Forts Drum, Campbell, Knox, and Riley
Piping plover	<i>Charadrius melodus</i>	Threatened	Forts Bliss, Carson, Hood, Riley, and Sill
Red-cockaded woodpecker	<i>Picoides</i> [= <i>Dryobates</i>] <i>borealis</i>	Endangered	Forts Bragg and Stewart
Tricolored bat	<i>Perimyotis subflavus</i>	Proposed endangered	Forts Bliss, Campbell, Hood, Knox, Bragg, Riley, Sill, and Stewart
Whooping crane	<i>Grus americana</i>	Endangered at Forts Hood and Sill; experimental at Forts Campbell and Knox	Forts Campbell, Hood, Knox, and Sill

Notes: PCMS = Piñon Canyon Maneuver Site. Neither the monarch butterfly or tricolored bat are currently protected under the ESA. Decisions regarding their official status is expected soon. Some installations have begun the conferencing process with USFWS to ensure compliance if/when their official status goes into effect.

Critical habitat. When USFWS proposes listing a species and an associated proposed designation of critical habitat, the affected DoD installation updates its INRMP to provide adequate assurances that actions taken by the installation would adequately protect and benefit the listed species. As a result, USFWS often exempts installations from critical habitat designations. Most installations being considered for IFPC stationing and fielding do not have designated critical habitat because their natural resources management programs and INRMPs provide benefits to the species for which the designation was proposed, consistent with section 4(a)(3)(B) of the ESA. The individual appendices note whether an installation has critical habitat.

Bald and golden eagles. Bald eagles and golden eagles migrate through or nest on many DoD installations. USFWS published National Bald Eagle Management Guidelines in the *Federal Register* in 2007 that include distance buffers between activities and nests, avoidance of certain activities during the breeding season, and avoidance of disturbances at foraging areas and communal roost sites (USFWS 2007). They were developed to advise landowners, land managers, and others who share public and private lands with bald eagles about when and under what circumstances the protective provisions of the BGEPA may apply to their activities. The guidelines are intended to help people minimize such effects on bald eagles, particularly where they may constitute disturbance prohibited by the BGEPA. Installations may also obtain permits from USFWS for short- and long-term activities with the potential to affect

eagles. **Table 3-7** lists the breeding season of bald and golden eagles at installations on which the birds occur.

Table 3-7. Breeding Seasons of Bald and Golden Eagles by Installation

Installation	Bald eagle	Golden eagle
Fort Campbell	9/1–7/31	N/A
Fort Carson/PCMS	10/15–8/31	12/1–8/31
Fort Hood	9/1–7/31	N/A
Fort Drum	12/1–8/31	1/1–8/31
Fort Knox	9/1–7/31	Occurs but breeds elsewhere
Fort Bragg	9/1–7/31	N/A
Fort Riley	10/15–8/31	1/1–8/31
Fort Sill	10/15–7/31	1/1–8/31
Fort Stewart	9/1–7/31	N/A
JBER	2/1–9/15	1/1–8/31
JBLM	1/1–9/30	1/1–8/31
Fort Wainwright	2/1–9/30	1/1–8/31

Notes: JBER = Joint Base Elmendorf-Richardson; JBLM = Joint Base Lewis-McChord; N/A = not applicable; PCMS = Piñon Canyon Maneuver Site.

Migratory birds. With the passage of the 2003 National Defense Authorization Act, Congress expressed its intention that the Armed Forces give appropriate consideration to the conservation of migratory birds when planning and executing military readiness activities (which include training and testing of the IFPC), but not at the expense of diminishing the effectiveness of such activities. DoD also has a legal and regulatory responsibility to manage and protect migratory birds in accordance with the MBTA. Doing so in a way that does not constrain the military mission presents a significant challenge because birds occur in all natural and human-created landscapes, so that virtually any land management activity will affect migratory birds. Evaluating the potential effects of proposed activities on migratory birds and avoiding "taking" (including killing, capturing, selling, trading, and transporting) them is critical to migratory bird management.

Common Environmental Consequences

Long-term negligible and less-than-significant adverse effects on biological resources would be expected. Vegetation clearing would be expected to have short-term negligible adverse effects on fauna and long-term less-than-significant adverse effects on flora. Training activities would be expected to have long-term negligible adverse effects on biological resources. No adverse effects would be expected from the increase in personnel. The proposed action may affect but would not be expected to adversely affect federally protected, proposed, or candidate species.

Alternatives 1 and 2. Long-term negligible and less-than-significant adverse effects on biological resources would be expected under alternatives 1 and 2.

IFPC emplacement sites. Emplacement site preparation could require vegetation clearing, generating noise and dust and altering local vegetative cover. It could cause

some fauna to temporarily (during site use) or permanently move to other areas of suitable habitat. Vegetation removal and maintenance of sites as cleared areas would have a long-term effect. Installation receiving IFPC BNs and BTRYs (Alternative 1) or BNs only (Alternative 2) might need to create several emplacement sites to accommodate training needs. Emplacement site locations would be selected in consultation with Range Control and the NRM. A request to use an area on a range would be reviewed for the presence of natural resources and, if necessary, sensitive natural areas would be identified and avoided using GIS data or site visits whenever feasible. Time-of-year limitations on vegetation clearing and other activities with the potential to affect federally protected species would be implemented at individual installations' discretion, consistent with mission/training requirements. If avoidance was not feasible, best management practices (BMPs) would be used to minimize effects. Any known harm caused to a sensitive biological resource would be reported to Range Control and the NRM. With these precautions, adverse effects on biological resources would be expected to be less than significant under Alternative 1.

Some installations that receive the IFPC might already train with Sentinel radar systems and have suitable emplacement sites for IFPC weapon system training. No effects on vegetation from site clearing would be expected at these installations but fauna could be expected to temporarily move to nearby areas during site use.

Alternatives 1 and 2 may affect but would not be expected to adversely affect federally protected, proposed, or candidate species. Through coordination with the NRM, installations would not be expected to create emplacement sites in habitats suitable for these species.

Training activity. Long-term negligible adverse effects on vegetation would be expected. Falling debris from destroyed C-sUAS could affect vegetation, and wildfires could be ignited by falling debris after C-sUAS destruction. All training activities would be conducted on suitable military ranges and installation protocols for avoiding and minimizing effects on roosting sites and nesting birds, and for range wildfire control would be followed. IFPC training activity noise would not be expected to alter fauna behavior; local fauna would be expected to be accustomed to range noise. Training activities may affect but would not be expected to adversely affect federally protected, proposed, or candidate species. If required, installations would consult with USFWS or the National Oceanic and Atmospheric Administration regarding potential effects on federally protected species and prepare supplemental NEPA documentation if adverse effects on federally protected species could not be avoided.

Increase in number of soldiers. No effects on biological resources would be expected from soldiers and their family members being newly assigned to an installation. At no receiving installation would the additional personnel appreciably increase human presence.

Alternative 3. Long-term negligible and less-than-significant adverse effects on biological resources would be expected under Alternative 3. The effects of implementing Alternative 3 on biological resources would be of the same type as those under alternatives 1 and 2, but with only an IFPC BTRY, the degree of adverse effects on

biological resources under Alternative 3 would be expected to be less than under alternatives 1 and 2.

No Action Alternative. No adverse effects on biological resources would be expected under the No Action Alternative. No IFPC BN or BTRY would be fielded at any installation, no new emplacement sites would be created, and no new training would be conducted on ranges. Existing biological resources conditions would be unchanged.

3.4.4 Cultural Resources

Affected Environment

Cultural resources include archaeological sites (historic and prehistoric); historic properties, districts, and landscapes; traditional cultural properties; and sacred sites. They include physical structures and objects, locations of important historic events, and aspects of the natural environment, such as natural features of the land or biota that are part of traditional ways of life. Cemeteries and paleontology are included in this analysis, although they are not specifically targeted for preservation under the NHPA.

Cultural resources are defined and protected by federal, state, and local regulations; on DoD installations cultural resources are managed under federal regulations. Cultural resources include historic properties as defined by the NHPA; cultural items as defined by the Native American Graves Protection and Repatriation Act (25 USC § 3001 *et seq.*); archaeological resources as defined by the Archaeological Resources Protection Act of 1978 (16 USC §§ 470aa–mm); sacred sites as defined in EO 13007, *Indian Sacred Sites*, which directs federal agencies to provide access to Native American sacred sites; and collections as defined in 36 CFR Part 79, *Curation of Federally Owned and Administered Archaeological Collections*.

Cultural resources are considered “historic properties” (as defined by the NHPA) if they have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. Generally, resources that receive evaluations of eligibility need to be 50 years old or more.

Federal regulations obligate federal agencies, including the DoD, to take into account the potential effects its actions might have on historic properties and sacred sites eligible for or listed in the NRHP. Resources of undetermined eligibility are treated as historic properties until a determination of eligibility is made by the agency in consultation with the SHPO.

AR 200-1 (December 2007 Revision), provides policy guidance for cultural resources to ensure that “installations make informed decisions regarding the cultural resources under their control in compliance with public laws, in support of the military mission, and consistent with sound principles of cultural resources management.”

Per AR 200-1, the Garrison Commander functions as the agency official for NHPA matters. The Garrison Commander's responsibility in this capacity cannot be delegated because 36 CFR 800 requires that the agency official have approval authority for the undertaking and be able to commit the federal agency to take appropriate action for a specific undertaking as a result of section 106 compliance.

Compliance with Section 106 of the NHPA is the responsibility of every federal agency. SHPOs work in partnerships with the ACHP and others for compliance with the NHPA. The Army and the DoD negotiate Programmatic Agreements and Program Comments, with the ACHP as alternative means of Section 106 compliance. These agreement documents typically include actions that must continue to be taken in order to stay in compliance with Section 106.

Common Environmental Consequences

No adverse effects on cultural resources would be expected to result from implementing the proposed action. Before the public comment period, notices were sent to federally recognized Native American Tribes affiliated with the assessed installations and NHOs affiliated with US Army Garrison (USAG) Hawaii. They were invited to review the documents and provide comment for consideration by Army decision makers. However, installations receiving the IFPC weapon system will only complete Section 106 or government to government consultations with SHPOs, THPOs, Tribes, NHOs, and other stakeholders once an alternative has been selected and design plans for the selected alternative are available. Consultation would occur before implementing the action at the installations to resolve any adverse effects through avoidance and mitigation. Historic resources evaluated for eligibility are 50 years old or older, with exceptions, particularly for Cold War era resources. Resources of undetermined eligibility are treated as historic properties until a determination is made. As part of the Section 106 process, agencies are required to consult with the SHPO, Tribes, and other relevant consulting parties (e.g., state and local historic preservation commissions or local historical societies).

Alternatives 1, 2, and 3. No adverse effects on cultural resources would be expected to result from implementing alternatives 1, 2, or 3.

IFPC emplacement sites and training activity. Creating emplacement sites would not be expected to involve ground disturbance. Each installation would select emplacement site locations in coordination with Range Control and the CRM. A request to use an area on a range would be reviewed for the presence of cultural resources and cultural sites would be avoided to the extent practicable by changing the training location. GIS data or site visits would be used to determine whether survey work might be required and whether any historic properties were within the site footprint. If eligible properties exist on the site, the installation in coordination with the SHPO would determine whether the properties could be avoided or mitigation would be required. If any item suspected to be of cultural or historical significance were discovered during training, the location would be reported to Range Control and the CRM and avoided until a determination of significance could be made. With these precautions, no adverse effects on cultural resources would be expected under any alternative.

Increase in number of soldiers. No effects on cultural resources would be expected as a result of the additional personnel assigned to an installation. At all receiving installations, the additional personnel would not appreciably increase human presence.

No Action Alternative. No adverse effects on cultural resources would be expected under the No Action Alternative. No emplacement sites would be created and no ground disturbance would occur. Existing cultural resources conditions would be unchanged.

3.4.5 Hazardous and Toxic Materials and Wastes

Affected Environment

The affected environment for hazardous and toxic materials and waste are the IFPC tactical vehicle storage and maintenance areas and range areas where IFPC training and maneuvering would occur.

Common Environmental Consequences

Long-term, less-than-significant adverse effects on hazardous and toxic materials and waste would be expected to result from implementing the proposed action. Fielding IFPC tactical vehicles would require routine maintenance to ensure vehicle readiness to conduct training exercises at an installation, which would increase the use of hazardous materials; POL; fuel; and coolants and generate hazardous waste from routine maintenance of the vehicles at the installation. Maintenance requirements of IFPC tactical vehicles would be like those of other installation tactical vehicles. The Army would manage debris associated with destroying UAS targets during training exercises, which would likely include hazardous debris from target components such as rechargeable batteries, in accordance with established range rules. Debris would be collected from non-dudged range areas (those without munitions and explosives of concern), and debris falling into an impact area or dudged range area would remain per the Military Munitions Rule and installation range rules and procedures. The use, storage, and disposal of commonly used hazardous materials and generated waste from vehicle maintenance and training activities would comply with federal, state, and local regulations. Installations would comply with the SOPs in established programs and plans, such as HMMPs, Hazardous Waste Management Plans, and SPCC plans. The volume of materials used to maintain IFPC tactical vehicles and any generated waste from maintenance and training would be expected to be within the receiving installation's permitted capacities. Where possible, hazardous materials or waste from the maintenance and operation of the IFPC tactical vehicles or from training operations would be recycled through the installation's pollution prevention programs.

Alternatives 1, 2, and 3. Long-term, less-than-significant adverse effects on hazardous and toxic materials and waste would be expected to result from implementing any of the three action alternatives. IFPC tactical vehicles would require routine maintenance like other installation tactical vehicles. Debris associated with destruction of UAS targets during training exercises would be managed in accordance with established range rules. The use, storage, and disposal of commonly used hazardous materials and generated waste from vehicle maintenance and training activities would comply with federal, state, and local regulations. The installation would comply with the SOPs in its established installation hazardous materials and waste programs and plans. The volume of materials used to maintain IFPC tactical vehicles and any generated waste from maintenance and training under any of the three action alternatives would be expected to be within the receiving installation's permitted capacities.

No Action Alternative. No adverse effects on hazardous and toxic materials and waste would be expected under the No Action Alternative. No IFPC BN or BTRY would be fielded at any installation. No increase in the number of vehicles requiring maintenance or the amount of waste collected on ranges would occur.

3.5 Summary of Environmental Consequences

3.5.1 Alternatives 1, 2, and 3

All effects of implementing alternatives 1, 2, and 3 on all resource areas are expected to be less than significant and no mitigation is expected to be needed to reduce any environmental consequence to below a level of significance.

At the PEA level, without knowledge of the number of newly assigned versus already domiciled soldiers to be stationed at an installation or the location or frequency of training to be conducted, and considering the broad and generalized affected environment the PEA assesses, the assessed consequences of implementing the alternatives on the resource areas considered in the PEA are similar across the installations. In some instances, installation circumstances affect the potential consequences on a resource area, but no circumstances would be expected to cause adverse effects to be significant.

3.5.2 No Action Alternative

No environmental effects would result under the No Action Alternative. No IFPC BNs or BTRYs would be fielded to any installation and conditions at the installations would remain unchanged from the status quo.

Table 3-8 summarizes the environmental consequences that would be expected under the action alternatives and the No Action Alternative on the resource areas assessed in the PEA.

Note: *The table includes only resource areas analyzed in the PEA. No effects would be expected on other resource areas the Army considered for analysis, and those resource areas were dismissed from analysis in the PEA.*

3.5.3 Mitigation and BMPs

Because no significant adverse environmental effects would be expected from implementing the proposed action, no mitigation to reduce potential effects to below a level of significance would be expected to be required. Receiving installations would implement BMPs in accordance with permitting requirements and installation plans and protocols to minimize adverse environmental effects.

Table 3-8. Common Environmental Consequences of Alternatives on Assessed Resource Areas

Resource area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Air quality	Long-term, less-than-significant adverse effects	Long-term, less-than-significant adverse effects	Long-term, less-than-significant adverse effects	No effects
Airspace use	No adverse effects from IFPC weapon system training. Less-than-significant adverse effects on nonmilitary airspace users.	No adverse effects from IFPC weapon system training. Less-than-significant adverse effects on nonmilitary airspace users.	No adverse effects from IFPC weapon system training. Less-than-significant adverse effects on nonmilitary airspace users.	No effects
Biological resources	Long-term negligible and less-than-significant adverse effects on flora and fauna. May affect but not likely to adversely affect federally protected species.	Long-term negligible and less-than-significant adverse effects on flora and fauna. May affect but not likely to adversely affect federally protected species.	Long-term negligible and less-than-significant adverse effects on flora and fauna. May affect but not likely to adversely affect federally protected species.	No effects
Cultural resources	No effects	No effects	No effects	No effects
Hazardous and toxic materials and waste	Long-term, less-than-significant adverse effects	Long-term, less-than-significant adverse effects	Long-term, less-than-significant adverse effects	No effects

SECTION 4 COMBINED EFFECTS

4.1 Combined Effects

Combined effects are analyzed by considering the resource-area specific effects of a proposed action in combination with the effects of other projects that would reasonably be expected to affect the same resource areas.

Combined effects at the installation level are not assessed in the PEA. The Army is working on multiple weapon system projects that could contribute to combined effects. The potential effects of multiple systems being fielded to installations are assessed broadly below, but each installation receiving a High-Powered Directed Energy system would be responsible for considering the effects of local and regional projects and other military projects in an installation-specific analysis.

4.1.1 Army Weapon System Projects Potentially Contributing to Combined Effects

The Army is undertaking a modernization effort as described in section 1.2 that would result in changes to personnel, weapons, and capabilities at the installations assessed in this PEA. The Army modernization projects planned for Fiscal Years 2021 through 2027 and beyond that could affect the installations assessed in this PEA are briefly described below.

- The Armored Multi-Purpose Vehicle (AMPV) is the replacement for the M113 Family of Vehicles within the Armored Brigade Combat Team. The AMPV provides capability improvement over the M113 Family of Vehicles in force protection, survivability, mobility, and power generation to incorporate future technologies. The AMPV is a tracked vehicle based on the Bradley Fighting Vehicle chassis that is larger and heavier than the M113. The equipment replacement ratio is expected to be one for one and no change in manning levels or number of vehicles is expected.
- Extended Range Cannon Artillery (ERCA): The ERCA is the Army's next generation 155-mm artillery system. The ERCA is considered the signature effort within the Army's top Modernization Priority—Long Range Precision Fires. Major components of the artillery system include the cannon, gun mount, artillery projectile, and propellant charges. The ERCA program evaluates integration and performance of the cannon with the Paladin self-propelled howitzer M109A6 and M109A7. ERCA test fires extended range artillery projectiles at distances ranging from approximately 30 to 45 miles.
- High-Powered Directed Energy (HP-DE) would permanently station and field the High-Energy Laser and High-Power Microwave of the Directed Energy IFPC within an IFPC BN or BTRY and the Directed Energy Maneuver Short-Range Air Defense (M-SHORAD) to an M-SHORAD BN.
- Iron Dome Defense System – Army (IDDS-A) is a truck-towed, multi-mission mobile air defense system developed to counter short-range rockets, artillery,

and mortar threats. The IDDS-A will field as a BTRY with about 60 soldiers joining an existing unit.

- The IFPC weapon system is the system described in this PEA.
- Long-Range Hypersonic Weapon (LRHW) is a maneuverable hypersonic warhead launched by missile from a truck-transported launcher. About 60–90 soldiers would be assigned per LRHW BTRY. An LRHW BTRY would include vehicles, launchers, various munitions, canisters, munitions trainers, and support vehicles.
- The M-SHORAD system will be a Stryker vehicle-based, multi-mission mobile air defense system to improve the protection of tactical maneuver forces from aerial threats. The M-SHORAD is expected to field as a new BN with about 550 soldiers and 235 wheeled vehicles in a BN.
- The Multi-Domain Task Force (MDTF) would integrate the IFPC, LRHW, Mid-Range Capability (MRC), and other capabilities into a BDE-sized unit. A Multi-Domain Effects BN would provide capabilities in Intelligence, Information, Cyber and Electronic Warfare, and Space domains. A BDE Support BN would provide logistics and maintenance support to all other BNs of the MDTF. The IFPC system would provide the capabilities of the ADA BN. The Precision Strike Missile, LRHW, and MRC BTRYs would form the Strategic Fires BN. The MDTF will have four BNs and about 2,100 soldiers. The Army might activate new units, inactivate existing units, convert existing units to a new mission, or re-station units to a new location for an MDTF.
- The M10 Booker Combat Vehicle (M10 Booker) is an Army program to procure a combat vehicle that can provide mobile protected direct offensive fire capability. The M10 Booker vehicle is an armored vehicle that was purpose-built for the Army's Infantry Brigade Combat Teams to provide them with decisive lethality, mobility, and survivability with upgraded capabilities on the multi-domain battlefield, and secondarily to provide protection against enemy armored vehicles. The vehicle will weigh about 42 tons and is a tracked, rather than wheeled vehicle. The Army expects to field 504 M10 Bookers.

Note: On June 11, 2025, the Army officially announced the cancellation of the M10 Booker program. Since some M10 Booker Combat Vehicles currently remain in the final stages of production and may be accepted/fielded by the Army in the future, this NEPA document includes analysis of potential effects associated with the stationing, fielding, and operating of the M10 Booker. This inclusion also provides preliminary analysis for a possible future light armored vehicle that could be developed to meet the Army's need for a light armored vehicle system.

- The MRC weapon will provide a mid-range warhead launched by missile from a truck-transported launcher. An MRC BTRY would have 70–100 soldiers and include vehicles, launchers, various munitions, canisters, munitions trainers, and support vehicles.

Table 4-1 lists the Army modernization projects that could be fielded in 2026 and beyond at the installations assessed in this PEA. The Army could decide to field other modernization projects to the installations considered in this PEA. Final fielding decisions have not been made; the listing was current at the time the PEA was released for public review.

4.1.2 Potential Combined Effects of Army Weapon System Projects

Air Quality. Tactical vehicles are exempt from air quality emissions requirements, so fielding such equipment to installations would not violate any federal, state, or local air quality regulations. Installations receiving IFPC weapon systems would estimate total criteria pollutant and HAP emissions from stationary sources fielded to the installation, combined with emissions from other known and foreseeable projects, to determine whether the combined effects on air quality would rise to a level of significance. The ROI for combined effects on air quality would be the AQCR or AQCRs in which the installation is located.

Table 4-1. Army Modernization Projects Planned for 2021–2026

Project	Fort Bliss	Fort Campbell	Fort Carson	Fort Hood	Fort Drum	Fort Knox	Fort Bragg	Fort Riley	Fort Sill	Fort Stewart	Fort Wainwright	JBER	JBLM	USAG Hawaii
AMPV	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	N	Y	N
ERCA PEA	Y	N	Y	Y	N	N	N	Y	Y	Y	N	N	N	N
HP-DE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IDDS-A	Y	Y	N	Y	N	N	N	Y	Y	Y	N	N	Y	N
IFPC	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
LRHW	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
M-SHORAD	Y	N	Y	Y	N	N	N	Y	Y	Y	N	N	N	N
MDTF	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
M10 Booker	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N
MRC	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: JBER=Joint Base Elmendorf-Richardson, JBLM=Joint Base Lewis-McChord, N=No, Y=Yes.

Airspace Use. Multiple weapon systems could require use of restricted airspace and current altitude, date, and time-of-day airspace use restrictions could be inadequate to accommodate the frequency and training needs of those systems. FAA-issued TFRs and FAA-approved new permanent airspace use restrictions could adversely affect nonmilitary flights through the airspace. The level of effect on nonmilitary aircraft would depend on the extent of additional airspace use restrictions and the amount of nonmilitary aircraft use the airspace gets. Installations would coordinate with FAA to determine the level of effect of additional airspace use restrictions and what, if any,

mitigation measures the Army would have to implement to minimize adverse effects. The ROI for combined effects on airspace use would be the restricted airspace associated with an installation and under the installation's control.

Biological Resources. Analyzing combined effects on biological resources could include consideration of resources not evaluated in this PEA because of the limited effect IFPC weapon system fielding would be expected to have. Other weapon systems could affect biological resources of cantonment areas, aquatic systems, or non-range areas or even federally protected species. Installations would have to consider all biological resources potentially affected by the combined fielding of multiple systems and would have to consider the resources individually because system fielding would be expected to variably affect different biological resources (e.g., vegetation, fauna, or aquatic systems). The ROI for combined effects on biological resources would be expected to be those of the entire installation.

Cultural Resources. Analyzing combined effects on cultural resources could include consideration of resources in installation areas not evaluated in this PEA, such as cantonment areas and historic structures and districts, which other weapon system fieldings could affect. Installations would have to consider all cultural resources potentially affected by the combined fielding of multiple systems and would have to consider the effects of renovation, construction, and other ground-disturbing activities on cultural resources. The ROI for combined effects on cultural resources would be expected to be those of the entire installation.

Hazardous and Toxic Materials and Waste. Analyzing combined effects on hazardous and toxic materials and waste would primarily consider the quantities and types of materials and waste to be stored, handled, generated, and disposed of by the combined fielding of systems at an installation. How hazardous materials are stored, handled, generated, and disposed of is well regulated at the federal, state, and local level and no laws or regulations pertaining to hazardous or toxic materials and waste would be expected to be violated, even with multiple systems fielded at an installation. Incidental spills would be cleaned up in accordance with installation SPCC plans. If, however, fielding of multiple systems would cause an exceedance of an installation's permitted level for hazardous or toxic material or waste storage or would introduce a material or waste the installation is not permitted to handle, the installation would have to seek a permit modification through its regulatory authority.

Other Resource Areas. The resource areas eliminated from analysis in this PEA—electromagnetic spectrum, geological and soil resources, human health and safety, land use, noise, socioeconomics [including protection of children], transportation and traffic, utilities and infrastructure, water resources, and aesthetics and visual resources—would not incur combined effects from an IFPC system fielding because combined effects result only from the effects of an action and other actions combined, and no effects on those resource areas would be expected from implementing the proposed action. Installations, however, would have to consider the other resource areas in their combined effects analysis because any one of the systems fielded to an installation could have an adverse effect on one or more of the resource areas.

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Note: IMCOM = Installation Management Command.

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Appendix A. Public Involvement

Note: Agency, Tribe, and NHO letters were distributed before the NEPA implementing regulations were rescinded and the DoD NEPA Implementing Procedures were published and are included without change from their original text. Also, the website noted in these letters on which the PEA and FONSI are available for review has changed, as has the publication of the NOA. See section 1.5 of the PEA for the correct information.

Office of the Commander

SUBJECT: National Environmental Policy Act Document Review

Salutation FirstName LastName

Title

NHO

Street1

Address2

City, State ZipCode

Dear **Salutation LastName:**

In accordance with the National Environmental Policy Act Implementing Regulations (Title 40 of the *Code of Federal Regulations* Parts 1500–1508), the US Army has prepared a *Programmatic Environmental Assessment for Stationing and Fielding the Indirect Fire Protection Capability Weapon System at Multiple Installations*, hereafter referred to as the "IFPC PEA." The IFPC PEA is accompanied by a draft Finding of No Significant Impact (FONSI). The Army is assessing 14 Army garrisons and joint base installations: Fort Bliss, TX; Fort Campbell, KY; Fort Carson, CO; Fort Cavazos, TX; Fort Drum, NY; Fort Knox, KY; Fort Liberty, NC; Fort Riley, KS; Fort Sill, OK; Fort Stewart, GA; Joint Base Elmendorf-Richardson, AK; Joint Base Lewis-McChord, WA; US Army Garrison (USAG) Alaska (Fort Wainwright); and USAG Hawaii. Implementing the proposed action of the IFPC PEA would entail fielding equipment and conducting weapon system training activities, as described in the IFPC PEA, at installations selected to receive the IFPC weapon system.

The Army is engaging with potentially interested Native Hawaiian Organizations, including the **NHO name**, regarding this action. The Army invites you to review the IFPC PEA and draft FONSI when the Notice of Availability is published in the *Federal Register* on or about **Month, XX, 2024**. The documents will be available for download at <https://aec.army.mil/index.php?clD=352>. If you prefer copies of the documents on CD or printed copies, please submit a request by email to the US Army Environmental Command at usarmy.jbsa.imcom-aec.mbx.nepa@army.mil or by US Mail at US Army Environmental Command, ATTN: IFPC Public Comments, 2455 Reynolds Road Mail Stop 112, Joint Base San Antonio-Fort Sam Houston, TX 78234-7588.

The Army invites you to provide comments on the documents so we are aware of and can consider your concerns and suggestions. No specific construction projects are currently planned or funded to support the IFPC weapon system proposed action at USAG Hawaii. If the IFPC weapon system is stationed at USAG Hawaii, however, the Army would complete detailed plans for any required construction, an appropriate level of environmental analysis, and any required consultation at that time.

Should you or your staff have any questions about the IFPC weapon system proposed action, contact **Installation staff name** at **phone** or the US Army Environmental Command Public Affairs Office via email at usarmy.jbsa.imcom-aec.mbx.nepa@army.mil or by phone at 443-243-0313. Your inquiry will be directed to the appropriate personnel.

Please provide your comments within 30 days of publication of the Notice of Availability in the *Federal Register*. Because this is a programmatic document covering multiple installations, please send electronic comments via email to usarmy.jbsa.imcom-aec.mbx.nepa@army.mil using the subject line "IFPC Public Comments." You also may mail written comments to US Army Environmental Command, Attn: IFPC Public Comments, 2455 Reynolds Road, Mail Stop 112, Joint Base San Antonio-Fort Sam Houston, TX 78234-7588. Your response is greatly appreciated.

Sincerely,

Garrison Commander's Signature Block

cc:

Name, HPO

Name, Tribe Cultural Resources Manager

Name, Tribe Natural Resources Manager

Office of the Commander

SUBJECT: National Environmental Policy Act Document Review

Salutation FirstName LastName

Title

Tribe

Street1

Address2

City, State ZipCode

Dear **Salutation LastName**:

In accordance with the National Environmental Policy Act implementing regulations (Title 40 of the *Code of Federal Regulations* Parts 1500–1508), the US Army has prepared a *Programmatic Environmental Assessment of Army High Power Directed Energy Weapon Systems Fielding, Operations, and Maintenance at Multiple Installations*, hereafter referred to as the "IFPC PEA." The IFPC PEA is accompanied by a draft Finding of No Significant Impact (FONSI). The Army is assessing 14 Army garrisons and joint base installations: Fort Bliss, TX; Fort Campbell, KY; Fort Carson, CO; Fort Cavazos, TX; Fort Drum, NY; Fort Knox, KY; Fort Liberty, NC; Fort Riley, KS; Fort Sill, OK; Fort Stewart, GA; Joint Base Elmendorf-Richardson, AK; Joint Base Lewis-McChord, WA; US Army Garrison (USAG) Alaska (Fort Wainwright); and USAG Hawaii. Implementing the proposed action of the IFPC PEA would entail fielding equipment and conducting weapon system training activities, as described in the IFPC PEA, at installations selected to receive the IFPC weapon systems.

Because **Installation** is being considered for fielding the IFPC weapon system, the Army is engaging with potentially interested Tribes, including the **Tribe**, regarding this action. The Army invites you to review the IFPC PEA and draft FONSI when the Notice of Availability is published in the *Federal Register* on or about **Month XX, 2024**. The documents will be available at <https://aec.army.mil/index.php?cID=352> for download. If you prefer copies of the documents on CD or printed copies, please submit a request by email to the US Army Environmental Command at usarmy.jbsa.imcom-aec.mbx.nepa@army.mil or via US Mail at US Army Environmental Command, ATTN: IFPC Public Comments, 2455 Reynolds Road Mail Stop 112, Joint Base San Antonio-Fort Sam Houston, TX 78234-7588.

The Army invites you to provide comments on the documents so we are aware of and can consider your concerns and suggestions. No specific construction projects are currently planned or funded to support the IFPC weapon system proposed action at **Installation**. If the IFPC weapon system is stationed at **Installation**, however, the Army would complete detailed plans for any required construction, an appropriate level of environmental analysis, and any required consultation at that time.

Should you or your staff have any questions about the IFPC weapon system proposed action, contact **Installation staff name** at **phone** or the US Army Environmental Command Public Affairs Office by email at usarmy.jbsa.imcom-aec.mbx.nepa@army.mil or by phone at 443-243-0313. Your inquiry will be directed to the appropriate personnel.

Please provide your comments within 30 days of publication of the Notice of Availability in the *Federal Register*. Because this is a programmatic document covering multiple installations, please send electronic comments via email to usarmy.jbsa.imcom-aec.mbx.nepa@army.mil using the subject line " IFPC Public Comments." You also may mail written comments to US Army Environmental Command, Attn: IFPC Public Comments, 2455 Reynolds Road, Mail Stop 112, Joint Base San Antonio-Fort Sam Houston, TX 78234-7588. Your response is greatly appreciated.

Sincerely,

Garrison Commander's Signature Block

cc:

Name, THPO

Name, Tribal Cultural Resources

Name, Tribal Natural Resources

Appendix B.
Record of Environmental Consideration Checklist

This checklist is intended to provide a framework for identifying any NEPA requirements beyond this PEA for anticipated impacts associated with stationing the IFPC at an installation in the United States. This checklist would certify that both the installation staff and proponent understand and support the requirements and discussions in this PEA, particularly the site conditions, the proposed action and its effects, and any required mitigations. The considerations in this PEA and the REC checklist are comprehensive but may not be sufficiently exhaustive to address site-specific conditions at every installation. For this reason, the installation's environmental staff must review this PEA, evaluate the checklist conditions and requirements, and determine the appropriate course of action.

CATEGORY I: For the 14 installations addressed in the PEA, if after reviewing the PEA and completing the REC checklist and all conditions described in the analysis are met, then they may adopt this PEA, complete a REC, and implement the proposed action.

CATEGORY II: For the 14 installations addressed in the PEA, if all conditions are not met after completing the REC checklist, or if impacts change, any of the 14 installations may adopt the PEA, prepare a supplemental EA and FONSI before implementing the proposed action. If impacts are significant, then the installation would prepare a NOI announcing the preparation of an EIS before IFPC stationing can proceed.

CATEGORY III: If an installation not covered under this PEA wishes to implement the proposed action, they may complete the REC checklist, adopt this PEA, and produce a tiered EA that describes the affected environment and impacts of the proposed action, prepare a FONSI, and stationing IFPC can proceed. If impacts are significant, then the installation would prepare a NOI announcing the preparation of an EIS before IFPC stationing can proceed.

To use the attached checklist to evaluate the proposed action, the following format is recommended:

- "Yes" implies an issue may require further NEPA analysis.
- "No" implies applicability of this PEA.
- "N/A" implies the question does not apply.

The "Comments" column may be used for any comments pertaining to the proposed action or identify existing programs or BMPs, regulations, or policies that mitigate an issue identified in the questionnaire.

Any questions regarding the completion of this checklist should be directed to the installation's environmental staff.

MEMORANDUM FOR RECORD

DATE: _____

SUBJECT: Evaluation, Under the National Environmental Policy Act (NEPA) of stationing the IFPC at (*installation name*).

1. Brief description: (Provide details of facility locations, dimensions and locations, and any differences in the Affected Environment that are described in the PEA.)
2. It has been determined that stationing the IFPC as described above (choose a. b. or c.):

a. Is adequately addressed in a completed: EA_____ EIS_____

Title and Date:

b. Qualifies for Categorical Exclusion and no extraordinary circumstances apply.

c. Qualifies for a REC, based on the evaluation of the criteria in the checklist below because the issues requiring consideration under NEPA are addressed in the PEA entitled, "Programmatic Environmental Assessment for Stationing and Fielding the Indirect Fire Protection Capability Weapon System at Multiple Installations."

The following signatories certify their understanding of the PEA and the analyses therein and certify compliance with the provisions and mitigations that are presented. This includes compliance with the procedures (SOPs and BMPs) that are specified and the funding necessary to ensure that the required mitigations will be implemented.

Proponent signature

Environmental Officer signature

Proponent, printed name

Environmental Officer, printed name

Email

Email

Phone number

Phone number

Record of Environmental Consideration Checklist

Resource Area and Questions	Check the appropriate response:	Comments
Air Quality	Response	Comment
Would any action taken to field the IFPC contribute to a change in the air quality compliance status in the region (e.g., from attainment to nonattainment)?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC violate the installation's air operating permit?	☐ Yes ☐ No ☐ N/A	
Airspace Use	Response	Comment
Would any action taken to field the IFPC systems undermine the safety of military, commercial, or civil aviation?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems cause unacceptable conflicts, congestion, delays, or economic hardship for nonparticipating air carriers and transporters that would otherwise freely use the airspace?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems contribute to a violation of federal airspace regulations?	☐ Yes ☐ No ☐ N/A	
Biological Resources	Response	Comment
Would any action taken to field the IFPC adversely affect a federally protected plant or animal species?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC contradict an installation-specific tree replacement or other natural resources conservation policy or not comply with any previously agreed upon NEPA mitigation actions for natural resources conservation?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC not comply with the ESA, MBTA, MMPA, and/or BGEPA, including compliance with any previously agreed upon NEPA mitigation actions? <i>(Note: All required USFWS or National Marine Fisheries Service informal or formal consultation must be completed prior to implementing the proposed action.)</i>	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC result in an adverse effect of a federally designated critical habitat?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC result in an unauthorized "take" of a state-protected species for which the installation is required to comply with the associated legal and regulatory requirements of the state?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC include activities in ecologically sensitive areas other than those mentioned above?	☐ Yes ☐ No ☐ N/A	

Resource Area and Questions	Check the appropriate response:	Comments
Would any action taken to field the IFPC trigger a survey for one or more protected species, such as threatened or endangered species protected under the Endangered Species Act? <i>(Note: A Yes means that the appropriate biological resource survey does not exist for all or part of the project area.)</i>	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC cause a substantial decrease in the relative percentage of any one vegetation type (native to the region) on the installation, particularly a vegetation type in the region that is already highly fragmented because of human activity?	☐ Yes ☐ No ☐ N/A	
Cultural Resources	Response	Comment
Would any action taken to field the IFPC disturb buildings or structures that are eligible for or listed on the NRHP?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC adversely affect a historic district that is eligible for or listed on the NRHP?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC trigger a survey for cultural resources?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC have an adverse effect on a NRHP-listed or -eligible historic property that is unlikely to be able to be avoided or mitigated? <i>(Note: All required NHPA section 106 consultation with the SHPO, ACHP, Tribes, and other interested parties must be completed prior to commencing with the proposed project.)</i>	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC prevent the traditional use of sacred or ceremonial sites or resources by Federally recognized Native Americans, Native Alaskans, or Native Hawaiians? <i>(Note: All required NHPA section 106 consultation with SHPO, ACHP, Tribes, and other interested parties must be completed prior to commencing with the proposed project.)</i>	☐ Yes ☐ No ☐ N/A	
Hazardous and Toxic Materials and Waste	Response	Comment
Would any action taken to field the IFPC systems result in noncompliance with applicable federal or state hazardous material or waste regulations; or increase the amounts of waste generated beyond installation management procedures, capacities, or permitting?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems increase the amounts of waste generated beyond installation management procedures, capacities, or permitting?	☐ Yes ☐ No ☐ N/A	

Resource Area and Questions	Check the appropriate response:	Comments
Electromagnetic Spectrum	Response	Comment
Would any action taken to field the IFPC systems interfere with existing wired or wireless communications on or off the installation?	☐ Yes ☐ No ☐ N/A	
Geological and Soil Resources	Response	Comment
Would any action taken to field the IFPC systems be conducted in a manner that conflicts with accepted state BMPs applicable to the activity (e.g., forestry BMPs for timber harvesting, wetlands, and riparian area protection BMPs)?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems involve construction activities on highly erodible soils?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems disturb contaminated soil?	☐ Yes ☐ No ☐ N/A	
Human Health and Safety	Response	Comment
Would any action taken to field the IFPC systems pose a serious threat of harm to any person?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems create an uncontrolled hazard to health, safety, or property?	☐ Yes ☐ No ☐ N/A	
Land Use	Response	Comment
Would any action taken to field the IFPC conflict with an installation planning document (master plan, land use plan, etc.)?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC create a land use incompatibility?	☐ Yes ☐ No ☐ N/A	
Noise	Response	Comment
Would any action taken to field the IFPC systems produce noise at a level that would interfere with normal daily activities?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems cause an exceedance of an applicable environmental noise ordinance?	☐ Yes ☐ No ☐ N/A	
Socioeconomics	Response	Comment
Would any action taken to field the IFPC cause a long-term loss or displacement of recreational opportunities and resources?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC create a disproportionate environmental health or safety risk to children?	☐ Yes ☐ No ☐ N/A	
Traffic and Transportation	Response	Comment
Would any action taken to field the IFPC create any long-term road closures or traffic delays?	☐ Yes ☐ No ☐ N/A	

Resource Area and Questions	Check the appropriate response:	Comments
Would any action taken to field the IFPC require large road or access control point construction and delivery vehicles to use roads that are already congested?	☐ Yes ☐ No ☐ N/A	
Infrastructure and Utilities	Response	Comment
Would any action taken to field the IFPC cause an exceedance of the existing capacity of an element of infrastructure and utilities?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC violate a regulatory limit of any infrastructure system (e.g., wastewater discharge)?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC be incompatible with the existing installation or regional electrical grid system?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC create utility shortages (electricity, natural gas, water, telecommunication service, wastewater management services, solid waste management service [non-hazardous], and other essentials) to local communities, homes, and businesses for a length of time that would affect health, welfare, and economic viability?	☐ Yes ☐ No ☐ N/A	
Water Resources	Response	Comment
Would any action taken to field the IFPC violate a NPDES stormwater permit?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC modify a floodplain such that the floodplain's natural and beneficial values are diminished?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC occur completely or partially within a floodplain, requiring implementation of EO 11988, possibly resulting in a Finding of No Practicable Alternative?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC cause an exceedance of a TMDL?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC cause a change in the impairment status of a surface water?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC result in unpermitted direct impacts on waters of the US, regulated recharge zones, and/or groundwater aquifers?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC occur on or within jurisdictional wetlands or require additional surveys to identify and delineate jurisdictional wetlands?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC cause the unpermitted loss or destruction of more than 1 acre of jurisdictional wetlands?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC trigger a CZMA consistency determination?	☐ Yes ☐ No ☐ N/A	

Resource Area and Questions	Check the appropriate response:	Comments
Would any action taken to field the IFPC require substantial modification of the installation's storm water discharge prevention plan?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC depend on groundwater resources that are stretched to or beyond their capacity, or cause or worsen a problem of brackish or saltwater intrusion?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC be done on a site known to contain contamination and be done in a way that could cause surface water or groundwater contamination or violate water quality regulations?	☐ Yes ☐ No ☐ N/A	
Aesthetics and Visual Resources	Response	Comment
Would any action taken to field the IFPC systems substantially alter the character of a landscape?	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems create visually incompatible landscape features??	☐ Yes ☐ No ☐ N/A	
Would any action taken to field the IFPC systems impair the view of an important or protected landscape or its features?	☐ Yes ☐ No ☐ N/A	

**Appendix C.
Air Quality Analysis Detail**

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.

a. Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: IFPC Battalion Alternative 2

c. Action Description:

No new construction. Only operations of tactical vehicles.

1. 735 new Soldiers with an average 20-mile round trip commute. The total number of personnel will be approximately 735, with 105 in the HHB, 150 in the FSC, 125 in each IFPC BTRY, and 105 in the C-sUAS BTRY.

2. The 50 percent of the following new tactical vehicles would travel 500 miles per year for no more than 60 days per year or 3 months for 5 days per week.

a. HMMWV: 100 – Off highway trucks (50 trucks)

b. MTV, Trucks, Vans: 190 – Off highway trucks (85 trucks)

3. 50 percent of the 140 trailers would be towed at any given time. Assuming trailers and their load are about 9,100 kg each, the weight of a HMMWV. (12 cubic yards * 70 vehicles * 60 days of operation = total amount to be hauled)

4. 50 percent of the 165 generators would be operating at any one time.

2. Air Impact Analysis: Based on the attainment status at the action location, 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" (hsba.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" (hsba.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.

Fielding and Stationing

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	4.072	250	No
NOx	17.834	250	No
CO	33.541	250	No
SOx	0.852	250	No
PM 10	1.308	250	No
PM 2.5	1.270	250	No
Pb	0.000	25	No
NH3	0.131	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.

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- **Regulatory Area(s):** NOT IN A REGULATORY AREA

- **Action Title:** IFPC Battalion Alternative 2

- **Action Description:**

No new construction. Only operations of tactical vehicles.

1. 735 new Soldiers with an average 20-mile round trip commute. The total number of personnel will be approximately 735, with 105 in the HHB, 150 in the FSC, 125 in each IFPC BTRY, and 105 in the C-sUAS BTRY.

2. The 50 percent of the following new tactical vehicles would travel 500 miles per year for no more than 60 days per year or 3 months for 5 days per week.

a. HMMWV: 100 – Off highway trucks (50 trucks)

b. MTV, Trucks, Vans: 190 – Off highway trucks (85 trucks)

3. 50 percent of the 140 trailers would be towed at any given time. Assuming trailers and their load are about 9,100 kg each, the weight of a HMMWV. (12 cubic yards * 70 vehicles * 60 days of operation = total amount to be hauled)

4. 50 percent of the 165 generators would be operating at any one time.

- **Activity List:**

Activity Type		Activity Title
2.	Personnel	New Personnel
3.	Construction / Demolition	Tactical Vehicles
4.	Emergency Generator	Generators

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. Personnel

2.1 General Information & Timeline Assumptions

- **Add or Remove Activity from Baseline?** Add

- **Activity Location**

Regulatory Area(s): NOT IN A REGULATORY AREA

- **Activity Title:** New Personnel

- **Activity Description:**

735 new Soldiers with an average 20-mile round trip commute.

- **Activity Start Date**

Start Month: 1

Start Year: 2025

- **Activity End Date**

Indefinite: Yes

End Month: N/A

End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	1.071573
SO _x	0.010048
NO _x	0.680809
CO	16.267835

Pollutant	Emissions Per Year (TONs)
PM 10	0.020152
PM 2.5	0.017842
Pb	0.000000
NH ₃	0.107225

- Activity Emissions of Other Pollutants:

Pollutant	Emissions Per Year (TONs)
CH ₄	0.067165
N ₂ O	0.023767

Pollutant	Emissions Per Year (TONs)
CO ₂	1514.770179
CO ₂ e	1523.522686

2.2 Personnel Assumptions

- Number of Personnel

Active Duty Personnel:	735
Civilian Personnel:	0
Support Contractor Personnel:	0
Air National Guard (ANG) Personnel:	0
Reserve Personnel:	0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule

Active Duty Personnel:	5 Days Per Week (default)
Civilian Personnel:	5 Days Per Week (default)
Support Contractor Personnel:	5 Days Per Week (default)
Air National Guard (ANG) Personnel:	4 Days Per Week (default)
Reserve Personnel:	4 Days Per Month (default)

2.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

2.4 Personnel Emission Factor(s)

- On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	NH ₃
LDGV	0.20626	0.00202	0.10309	3.44792	0.00366	0.00324	0.02392
LDGT	0.20960	0.00261	0.18311	3.84093	0.00489	0.00433	0.02556
HDGV	0.85799	0.00604	0.80990	13.40866	0.02312	0.02045	0.05117
LDDV	0.06229	0.00103	0.07904	3.32168	0.00255	0.00235	0.00813
LDDT	0.06499	0.00119	0.11615	2.23739	0.00307	0.00283	0.00851
HDDV	0.10003	0.00417	2.28101	1.51399	0.04093	0.03765	0.03214
MC	2.64598	0.00258	0.63947	12.82296	0.02376	0.02102	0.05407

- On Road Vehicle Emission Factors (grams/mile)

	CH₄	N₂O	CO₂	CO₂e
LDGV	0.01272	0.00449	303.72621	305.38131
LDGT	0.01507	0.00646	393.31709	395.61591
HDGV	0.06075	0.02646	909.62607	919.02051
LDDV	0.01272	0.00449	303.72621	305.38131
LDDT	0.02575	0.00096	356.87389	357.80302
HDDV	0.02204	0.00307	1242.61735	1244.08160
MC	0.10619	0.00286	388.38610	391.89318

2.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$$VMT_P = NP * WD * AC$$

VMT_P: Personnel Vehicle Miles Travel (miles/year)

NP: Number of Personnel

WD: Work Days per Year

AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$$

VMT_{Total}: Total Vehicle Miles Travel (miles)

VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)

VMT_C: Civilian Personnel Vehicle Miles Travel (miles)

VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)

VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)

VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

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

V_{POL}: Vehicle Emissions (TONs)

VMT_{Total}: Total Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Personnel On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

3. Construction / Demolition

3.1 General Information & Timeline Assumptions

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Tactical Vehicles

- Activity Description:

The 50 percent of the following new tactical vehicles would travel 500 miles per year for no more than 60 days per year or 3 months for 5 days per week.

a. HMMWV: 100 – Off highway trucks (50 trucks)

b. MTV, Trucks, Vans: 190 – Off highway trucks (85 trucks)

50 percent of the 140 trailers would be towed at any given time. Assuming trailers and their load are about 9,100 kg each, the weight of a HMMWV. (12 cubic yards * 70 vehicles * 60 days of operation = total amount to be hauled)

- Activity Start Date

Start Month: 1
Start Month: 2025

- Activity End Date

Indefinite: False
End Month: 3
End Month: 2025

*****NOTE:** Assumptions were made to calculate annual emissions because operation of tactical vehicles would be limited to 500 miles per year for no more than 60 days per year. These annual emissions were applied over the period of performance of the alternative.

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.068494
SO _x	0.056841
NO _x	13.310804
CH ₄	0.252697
CO	14.706774
CO ₂	6620.027657

Pollutant	Total Emissions (TONs)
CO ₂ e	6641.378911
PM 10	0.449520
PM 2.5	0.413520
Pb	0.000000
N ₂ O	0.050470
NH ₃	0.023843

3.1 Site Grading Phase

3.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2025

- Phase Duration

Number of Month: 3
Number of Days: 0

3.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 0
Amount of Material to be Hauled On-Site (yd³): 504000
Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: No
Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Off-Highway Trucks Composite	135	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20
 Average Hauling Truck Round Trip Commute (mile): 20

- 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

- Worker Trips Vehicle Mixture (%)

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

3.1.3 Site Grading Phase Emission Factor(s)

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

Off-Highway Trucks Composite [HP: 376] [LF: 0.38]							
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	
Emission Factors	0.17748	0.00488	1.08595	1.17415	0.03850	0.03542	

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

Off-Highway Trucks Composite [HP: 376] [LF: 0.38]				
	CH ₄	N ₂ O	CO ₂	CO ₂ e
Emission Factors	0.02144	0.00429	528.58735	530.40133

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

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	NH ₃
LDGV	0.20626	0.00202	0.10309	3.44792	0.00366	0.00324	0.02392
LDGT	0.20960	0.00261	0.18311	3.84093	0.00489	0.00433	0.02556
HDGV	0.85799	0.00604	0.80990	13.40866	0.02312	0.02045	0.05117
LDDV	0.06229	0.00103	0.07904	3.32168	0.00255	0.00235	0.00813
LDDT	0.06499	0.00119	0.11615	2.23739	0.00307	0.00283	0.00851
HDDV	0.10003	0.00417	2.28101	1.51399	0.04093	0.03765	0.03214
MC	2.64598	0.00258	0.63947	12.82296	0.02376	0.02102	0.05407

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

	CH ₄	N ₂ O	CO ₂	CO ₂ e
LDGV	0.01272	0.00449	303.72621	305.38131
LDGT	0.01507	0.00646	393.31709	395.61591
HDGV	0.06075	0.02646	909.62607	919.02051
LDDV	0.01272	0.00449	303.72621	305.38131
LDDT	0.02575	0.00096	356.87389	357.80302
HDDV	0.02204	0.00307	1242.61735	1244.08160
MC	0.10619	0.00286	388.38610	391.89318

3.1.4 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 (yd³)

HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

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

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add
- Activity Location
Regulatory Area(s): NOT IN A REGULATORY AREA
- Activity Title: Generators
- Activity Description:
There would be 165 generators.
- Activity Start Date
Start Month: 1
Start Year: 2025
- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.932209
SO _x	0.785194
NO _x	3.842438
CO	2.566080

Pollutant	Emissions Per Year (TONs)
PM 10	0.838654
PM 2.5	0.838654
Pb	0.000000
NH ₃	0.000000

- Activity Emissions of Other Pollutants:

Pollutant	Emissions Per Year (TONs)
CH ₄	0.015469
N ₂ O	0.003094

Pollutant	Emissions Per Year (TONs)
CO ₂	384.243750
CO ₂ e	444.386250

4.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 165
- 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 Other Pollutant Emission Factor (lb/hp-hr)

CH₄	N₂O	CO₂	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)

**Appendix D.
Cooperating Agency Letter**



DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

MEMORANDUM FOR DIRECTOR, INSTALLATION SERVICES, DEPARTMENT OF THE
ARMY, G-9

FROM: SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

SUBJECT: Response to the Army's Invitation to Become a Cooperating Agency on Four (4)
Programmatic Environmental Assessments (PEAs) for Army Modernization
Fielding and Stationing Decisions

The Department of the Air Force (DAF) received the Army's invitation dated 5 June 2023 to participate as a Cooperating Agency (CA) on a suite of four (4) PEAs for stationing and fielding of five (5) weapons systems. The four (4) PEAs include: 1) Long Range Hypersonic Weapon and Mid-Range Capability; 2) Indirect Fire Protection Capability; 3) Mobile Protected Firepower; and 4) High Power Directed Energy. The DAF understands these PEAs will provide information to Army leadership in support of stationing and fielding decisions and that Joint Base Elmendorf-Richardson (JBER) is under consideration. The DAF accepts the Army's invitation to cooperate due to the DAF's jurisdiction by law and specialized expertise.

Understanding scope is important to support the DAF's independent NEPA decision-making pursuant to 32 C.F.R. 989.7 and ability to advise the Army of the DAF-specific NEPA requirements necessary to satisfy the DAF's NEPA responsibility for the identified proposal(s). Due to the programmatic nature of these EAs, it is assumed that additional environmental impact analysis process (EIAP), such as tiered NEPA in accordance with 40 C.F.R. 15011.1, may be required prior to implementation of site-specific actions. As prescribed in 40 C.F.R. 1501.8, the DAF understands as a Cooperating Agency it will be expected to participate in various portions of NEPA development and may, to the extent practicable:

- a. Provide timely review and comment on project information and EA drafts to reflect the views and concerns of the DAF on the adequacy of the NEPA document, alternatives considered and the anticipated impacts and mitigation;
- b. Provide known baseline environmental information for affected environment at JBER;
- c. Provide input on alternative locations for these systems and its associated buildings and vehicles at JBER;
- d. Provide timely review of NEPA analysis and supporting documents;

- e. Provide support, expertise, and coordination on meeting DAF-specific NEPA and other requirements, including DAF strategic basing process which must take place prior to NEPA completion, in accordance with AFI 10-503;
- f. Provide support and expertise to the Army in coordinating and/or consulting with regulatory agencies and local organizations;
- g. Participate in coordination meetings and joint field reviews of the NEPA documents and other supporting environmental documents, as appropriate; and
- h. Provide meaningful early input and participate in the organization and execution of public engagement and outreach, as applicable.

The DAF requests to be provided appropriate, related information in a timely manner to avoid unnecessary delays. In turn, the DAF will respond in a prompt manner. The DAF further requests that the Army commit to developing and processing NEPA documentation to ensure unique DAF-specific NEPA and public notice requirements are satisfied.

If you have any questions and/or concerns, my points of contact are Mr. Douglas Allen at 804-998-3379, douglas.allen.5.ctr@us.af.mil and Mr. Jack Bush at 703-867-1082, jack.bush@us.af.mil. For DAF day-to-day NEPA actions related to JBER NEPA, our points of contact are Ms. Charlene Johnson at charlene.johnson.3@us.af.mil and Mr. Daniel Fischer at daniel.fischer.26@us.af.mil.

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

cc:
SAF/GCN
AF/JAOE
AF/A4C
HQ PACAF/A5/8
HQ AFIMSC/CC
HQ AFCEC/CC
AFIMSC, Det 2/CD

**Appendix E.
Installation Background Information**

E.1 Fort Bliss

E.1.1 Background

Location and Size. Fort Bliss is headquartered near El Paso, TX. It covers about 1.12 million acres in El Paso County, TX, and Doña Ana and Otero counties, NM. Its maneuver areas cover 992,000 acres.

Ranges and Training Areas. The Fort Bliss Training Complex consists of the South Training Areas (Division Training Areas, Doña Ana Range-North Training Areas, and McGregor Range). Training Areas support mechanized maneuver training, live-fire and qualification ranges, unit tactical exercises, and air defense and air-to-ground training. Units conduct joint training exercises, unified command training, unit training, combat support, combat service support, weapons testing, joint training with allied nations, and training activities conducted by other services at Fort Bliss. Ranges accommodate testing of tanks, armored vehicles, and artillery systems.

The Air Defense mission includes firing Patriot, Stinger, and other missiles; Theater High-Altitude Air Defense Radar BTRY testing and training; and Joint Land Attack Cruise Missile Defense Elevated Sensor System training.

White Sands Missile Range (WSMR): The WSMR borders Fort Bliss along the northern boundary of the Doña Ana Range-North Training Areas. WSMR is the only overland range for extended-range missile, munitions, and artillery testing. Together, Fort Bliss and WSMR have an area of more than 3 million contiguous acres of dedicated DoD land and exclusive-use airspace.

Source: Fort Bliss 2021, US Army 2022.

E.1.2 Air Quality

Fort Bliss is in the El Paso-Las Cruces-Alamogordo Interstate AQCR. Otero County is in attainment for all criteria pollutants. The City of El Paso and Doña Ana County near the City of Anthony, NM, are non-attainment areas for PM₁₀. The downtown area of the City of El Paso is a maintenance area for carbon monoxide. Fort Bliss is not included in those designated areas.

El Paso County, TX, and portions of Doña Ana County, NM, are marginal nonattainment for 8-hour O₃ (2015 Standard), including the portions El Paso County, TX, occupied by Fort Bliss.

Fort Bliss operates emission sources under a Title V Federal Operating Permit issued by the Texas Commission on Environmental Quality. Fort Bliss is a major source of air pollutants and has actual or potential emissions at or above the 100-ton threshold for criteria air pollutants.

The proposed action would be implemented within El Paso County, TX, and Doña Ana County, NM. Both counties are moderate non-attainment areas for ozone within an ozone transport region; therefore, the *de minimis* thresholds of 50 tpy for O₃ and volatile organic compounds (VOC) and 100 tpy for NO_x apply. The GCR would apply to the proposed action and the Texas SIP would be followed.

Source: 40 CFR 81.82, USEPA 2024.

E.1.3 Airspace

Fort Bliss controls the FAA-designated restricted area airspace associated with the installation (**Table E-1**). It is the largest contiguous tract of restricted airspace in the continental United

States, covering a land area of 1,500 square miles. It is used for missile and artillery training and testing.

Table E-1. Fort Bliss Airspace

Restricted area	Altitude
R-5103 A	To but not including FL 180
R-5103 B, C	Unlimited
R-5107 A, B, E, K	Unlimited
R-5107 C	9,000 feet to unlimited
R-5107 D	To 22,000 feet
R-5107 H, J	To 9,000 feet
R-5107 F, G	FL 240 to FL 450
R-5109 A, B	24,000 feet to unlimited
R-5111 A, C	13,000 feet to unlimited
R-5111 B	To 13,000 feet
R-5111 D	To but not including 13,000 feet

Notes: FL = flight level; FL 180, FL 240, and FL 450 are roughly equivalent to 18,000 feet, 24,000 feet, and 45,000 feet, respectively. R-5103 is owned by Fort Bliss. R-5107 and R-5111 are owned by WSMR.

Source: FAA 2025 (*Albuquerque Sectional Aeronautical Chart*), US Army 2025.

Separate airspace is controlled by WSMR. WSMR is one of only two places in the United States not under the command and control of the FAA. WSMR includes DoD-restricted airspace that it controls 24 hours a day from the ground to space.

E.1.4 Biological Resources

Ecoregion. Fort Bliss is in the Northern Chihuahuan Desert Ecoregion of western Texas and New Mexico, except for a small portion in the Arizona/New Mexico Mountains Ecoregion. The area is a semi-arid to arid-subtropical desert with a varied topography of mountainous terrain to alluvial plains. Elevations range from 3,900 feet to 8,900 feet. Surface waters on Fort Bliss are rare and mostly ephemeral.

Flora. Fort Bliss supports a diverse and varied flora ranging from desert plants to conifer forests. The predominant plant community is shrub-grassland. Desert grasslands are in lower areas. Three locally important rare or unique flora communities are black grama grasslands, sand sagebrush, and shinnery oak islands.

Fauna. Fort Bliss supports birds and mammals typical of the intermountain west, including about 335 bird species, 60 mammal species, and 50 species of turtles, reptiles, and amphibians. It has the highest known diversity of arthropods in North America and numerous mammal species are unique to the area. The more than 1,700 miles of arroyo-riparian drainage areas are frequented by fauna and are more important to wildlife than adjacent upland areas.

Federally protected species. USFWS lists 15 federally protected, proposed, and candidate species occur or could occur on Fort Bliss. No USFWS-designated critical habitat overlaps Fort Bliss land.

Source: Fort Bliss 2021, Griffith et al. 2004, Griffith et al. 2006, USFWS 2024.

E.2 Fort Bragg

E.2.1 Background

Location and Size. Fort Bragg (formerly known as Fort Liberty) is in south-central North Carolina. It extends into six counties. The Main Cantonment Area is in Cumberland County and the remaining land is in Harnett, Hoke, Moore, Richmond, and Scotland counties. Fort Bragg encompasses 162,694 acres, including Camp Mackall. The Main Cantonment Area covers 15,533 acres and training lands cover 146,000 acres.

Ranges and Training Areas. Training areas include four impact areas covering about 33,000 acres. It is home to the Army's Airborne and Special Operations Forces. Training conducted on Fort Bragg includes maneuvers, airborne operations, and live-fire exercises. Training occurs for individuals, platoons, and brigade-size operations.

Source. Fort Bragg 2021; US Army 2022.

E.2.2 Air Quality

The entirety of Fort Bragg is in the Sandhills Intrastate AQCR. All six counties in which Fort Bragg is located are in attainment for all criteria pollutants.

Fort Bragg operates under a Title V Federal Operating Permit issued by the North Carolina Department of Environmental Quality (Permit No. 04379T46). It is a major source of air pollutant emissions.

Source: 40 CFR 81.151, US Army 2022, USEPA 2024.

E.2.3 Airspace

Fort Bragg controls the FAA-designated restricted area airspace associated with the installation (Table E-7).

Table E-7. Fort Bragg Airspace

Restricted area	Altitude
R-5311 A	To but not including 7,000 feet
R-5311 B	7,000 feet but not including 12,000 feet
R-5311 C	12,000 feet but not including FL 290

Notes: FL = flight level; FL 290 is roughly equivalent to 29,000 feet.

Source: FAA 2025 (Charlotte Sectional Aeronautical Chart).

E.2.4 Biological Resources

Ecoregion. Fort Bragg is in the Southeastern Plains ecoregion of the Sandhills region of southeastern North Carolina. The northwestern portion of the installation is in the Sand Hills subregion and the southeastern portion is in the Atlantic Southern Loam Plains subregion. The longleaf pine (*Pinus palustris*)/wiregrass (*Aristida stricta*) ecosystem is dominant in the region. Vegetative community diversity is high owing to soil moisture and nutrient gradients and Fort Bragg's location at a watershed divide straddling the Coastal Plain and Piedmont ecoregions.

Flora. Fort Bragg has documented more than 1,000 flora species on the installation. Non-native species account for about 17 percent of flora species. Most invasives are found in disturbed areas such as roadsides, wildlife food plots, and airfields. Fort Bragg maintains a relatively intact ecosystem with prescribed fire.

Fauna. Fort Bragg has about 200 bird species, 30 mammal species, 50 reptile species, 40 amphibian species, and 50 fish species and more than 100 other vertebrate species are thought to live on or migrate through the installation.

Federally protected species. USFWS lists 14 federally protected, proposed, and candidate species as occurring or having the potential to occur on Fort Bragg. The Endangered Species Management Component of the Fort Bragg INRMP provides detailed information on seven federally listed species known to occur on the installation:

- American chaffseed (*Schwalbea americana*)
- Michaux's sumac (*Rhus michauxii*)
- Red-cockaded woodpecker (*Picoides [=Dryobates] borealis*)
- Rough-leaved loosestrife (*Lysimachia asperulifolia*)
- Saint Francis' satyr (*Neonympha mitchellii francisci*)
- Northern long-eared bat (*Myotis septentrionalis*)
- American burying beetle (*Nicrophorus americanus*)

No USFWS-designated critical habitat is on the installation.

There have been numerous reports of sub-adult and adult bald eagles throughout the central and eastern sections of Fort Bragg but no nesting activity has been documented on either Fort Bragg or Camp Mackall.

Source: Fort Bragg 2021, Griffith et al. 2002, USFWS 2024

E.3 Fort Campbell

E.3.1 Background

Location and Size. Fort Campbell is in Christian and Trigg counties in Kentucky and in Montgomery and Stewart counties in Tennessee. Fort Campbell covers more than 100,000 acres.

Ranges and Training Areas. Fort Campbell maintains 48 live-fire ranges, three high-impact areas, 51 training areas, five drop zones, 93 artillery firing points, 51 maneuver areas, a special operations training center, and two airfields. The installation has about 63,050 acres of training and maneuver areas, about 26,640 acres of range and impact areas, and built-up areas.

E.3.2 Air Quality

The portion of Fort Campbell in Kentucky is within the Paducah (Kentucky)-Cairo (Illinois) Interstate AQCR. The portion of Fort Campbell in Tennessee is located within the Middle Tennessee Intrastate AQCR. Fort Campbell is in an attainment area for all NAAQS.

Fort Campbell operates emission sources under two Title V Federal Operating Permits because it is in two states. Fort Campbell is a major source; it has actual or potential emissions at or above the 100-ton threshold for criteria air pollutants. Regulated pollutant emission rates for the lower contributing sources are well below the trigger threshold of 100 tpy for major sources.

Source: 40 CFR 81.69, 40 CFR 81.120, Fort Campbell 2020, USEPA 2024.

E.3.3 Airspace

FAA-designated restricted area airspace is associated with the installation and under the installation's control (Table E-2).

Table E-2. Fort Campbell Airspace

Restricted area	Altitude
R-3701 A	To but not including 5,000 feet
R-3702 A	To 10,000 feet
R-3702 B	10,000 feet to FL 220
R-3702 C	FL 220 to FL 270

Notes: FL = flight level; FL 220 and FL 270 are roughly equivalent to 22,000 feet and 27,000 feet, respectively.

Source: FAA 2025 (*St. Louis Sectional Aeronautical Chart*).

E.3.4 Biological Resources

Ecoregion. Western Pennyroyal Karst ecoregion of the Western Highland Rim in northwestern Tennessee and southwestern Kentucky.

Characterized by irregular plains scattered with caves, springs, disappearing streams, dry valleys, and sinkholes associated with karst topography.

Flora. Woodlands cover about 43 percent of Fort Campbell. Upland oak and oak-hickory hardwoods are the dominant forest type.

About 10,500 acres are managed, planted pine plantation; about 19,253 acres are native grassland barrens, old fields, and agricultural fields. A 1992 inventory documented 423 flora species on the installation.

Fauna. Surveys have documented 40 mammal species; 51 amphibian and reptile species; 240 bird species; 60 fish species; 328 butterfly, insect, and snail species; 7 freshwater mussel species on the installation. Most are locally common and typical species of forest and grasslands.

Federally protected species. Fourteen federally protected fauna species occur or have the potential to occur on Fort Campbell, including gray bat, Indiana bat, and northern long-eared bat. Fort Campbell does not support any federally listed plant species. No USFWS-designated critical habitat overlaps Fort Campbell land. Bald eagles have been observed nesting on Fort Campbell.

Source: Fort Campbell 2020, Griffith et al. 2002, USFWS 2024, Woods et al. 2002.

E.4 Fort Carson

E.4.1 Background

Location and Size. Fort Carson is in central Colorado at the foot of the Rocky Mountain Front Range in El Paso, Fremont, and Pueblo counties. Colorado Springs, CO, is about 8 miles north and Denver, CO, is about 75 miles north. Pueblo, CO, is about 35 miles south. Fort Carson covers about 137,000 acres. Fort Carson's downrange area, including firing ranges, training areas, and impact areas, is 131,404 acres. Piñon Canyon Maneuver Site (PCMS) is about 150 miles southeast of Fort Carson in Las Animas County. It covers 235,896 acres, about 158,000 acres of which are maneuver area.

Ranges and Training Areas. Fort Carson has 56 training areas and 84 ranges. Fort Carson has two impact areas—a small, non-dudded impact area for small arms and a large, dudded impact area that supports artillery, tank, Bradley, Stryker, and other gunnery ranges. The large impact area supports mortar firing, cannon artillery, aircraft bombing and Multiple Launched Rocket System firing. Fort Carson training ranges are best suited for squad- to BN-sized

maneuvers and land training. Brigade-sized exercises are sometimes conducted at Fort Carson. Training is nearly continuous year-round.

PCMS is the primary maneuver area for Fort Carson and is best used for BN- and brigade-sized maneuvers, land training, small arms live-fire ranges, and force-on-force exercises. Heavy maneuver training events of both light and heavy vehicles occur regularly, split between Fort Carson and the PCMS. Live-fire training is restricted at PCMS to 50-caliber and below at established firing ranges.

Source: Fort Bliss 2021, US Army 2022

E.4.2 Air Quality

Fort Carson and PCMS are in the San Isabel Intrastate AQCR. El Paso, Fremont, Huerfano, Las Animas, and Pueblo counties are in attainment for all criteria pollutants.

Fort Carson operates under a Title V Federal Operating Permit. It covers emissions of criteria pollutants and HAPs installation wide. Fort Carson is a major source; it has actual or potential emissions at or above 100 tons threshold for any air pollutant. The Fort Carson cantonment area is in attainment for all criteria pollutants and is not subject to a conformity analysis.

Source: 40 CFR 81.175, US Army 2022, USEPA 2024.

E.4.3 Airspace

FAA-designated restricted area airspace is associated with the installation and PCMS and is under the installations' control (**Table E-3**).

Table E-3. Fort Carson Airspace

Restricted area	Altitude
R-2601 A	To but not including 12,500 feet
R-2601 B	12,500 feet to but not including 22,500 feet
R-2601 C	22,500 feet to but not including 35,000 feet
R-2601 D	35,000 feet to but not including 60,000 feet
R-2603	To but not including 10,000 feet

Notes: R-2601 is associated with Fort Carson. R-2603 is associated with the PCMS.

Source: FAA 2025 (Denver Sectional Aeronautical Chart).

E.4.4 Biological Resources

Ecoregion. Most of Fort Carson is in the Piedmont Plains and Tablelands ecoregion, a vast area of irregular and dissected plains underlain by shale and sandstone. Shortgrass prairie is a dominant habitat. The western portion is in the Foothill Shrublands ecoregion, a transitional area from the Rocky Mountains to the west and Great Plains to the east. It is a semiarid region with rolling-to-irregular terrain of hills, ridges, and footslopes. Elevations are generally 6,000–8,500 feet.

Flora. Shortgrass prairie grasslands cover about 48 percent of Fort Carson. Forest and woodlands cover about 37 percent of Fort Carson. Shrublands cover about 15 percent Fort Carson's vegetation. Deciduous shrubland is along major drainages.

Fauna. Fort Carson supports a broad variety of fauna species, including large mammals such as elk (*Cervus canadensis*) and pronghorn antelope (*Antilocapra americana*) and smaller mammals such as bobcat (*Lynx rufus*), coyote (*Canis latrans*), and rabbit. The following have

been recorded on Fort Carson: 285 species of birds, 73 species of nongame mammals (e.g., bats and prairie dogs [*Cynomys* spp.]), 24 species of fish, regional species of amphibians and reptiles, and insects and other invertebrates.

Federally protected species. The Mexican spotted owl (*Strix occidentalis lucida*; threatened) and black-footed ferret (*Mustela nigripes*; endangered) are the only federally listed species known to occur on Fort Carson. The owl is an occasional winter resident on the south-central portion of the installation. The ferret migrated across the southern border from an introduction site on adjacent private land. No USFWS-designated critical habitat overlaps Fort Carson.

The golden eagle (*Aquila chrysaetos*) is a year-round resident of Fort Carson and PCMS and is most abundant in winter (Fort Carson 2020). Several golden eagle nests are on Fort Carson and a few of them are occupied annually from January–August. The bald eagle (*Haliaeetus leucocephalus*) nests within 3 miles of Fort Carson’s northeastern boundary but is not known to nest on Fort Carson or the PCMS. The bald eagle is primarily present on Fort Carson and the PCMS during migration and in winter from late October–March. A few bald eagles have been observed foraging on Fort Carson during the nesting season.

Source: Chapman et al. 2006, Fort Carson 2020, USFWS 2024

E.5 Fort Drum

E.5.1 Background

Location and Size. Fort Drum is in northern New York State in Jefferson and Lewis counties and adjacent to St. Lawrence County, NY. It is about 10 miles northeast of Watertown, NY. The northeastern portion of the installation includes the western portion of New York State’s Adirondack Mountains. Fort Drum covers 108,733 acres. Approximately 74,716 acres are for training and maneuver and approximately 22,699 acres are for range and impact areas.

Ranges and Training Areas. Fort Drum has 40 ranges, 15 artillery firing points (one hardened), 11 observation firing points, 40 small caliber weapons firing ranges, more than 70 training areas, and one impact area. Four training areas are for heavy maneuvers and the remaining 14 are for light maneuvers. Large-scale training exercises (Brigade Battle Simulation Exercises, Company/Team/Platoon Situational Training Exercises and National Guard Bureau Annual Training) occur year-round. The 10th Mountain Division (Light Infantry), the primary active component at Fort Drum, consists of three Light Infantry BCTs (two of which are stationed at Fort Drum), an Aviation Brigade, Division Artillery, a Sustainment Brigade, and other elements. The Fort Drum Training Area supports light infantry, air assaults with helicopters, artillery, fixed-wing aircraft, unmanned aerial vehicles, and anti-aircraft missiles. Brigade-level maneuver training exercises usually occur twice a year and involve up to 5,800 personnel.

Source. APHC 2016, Fort Drum 2021.

E.5.2 Air Quality

Fort Drum is in the Central New York Intrastate AQCR and the Northern Ozone Transport Region. The AQCR includes nine counties, including Jefferson and Lewis counties.

Fort Drum operates under a Title V Federal Operating Permit (No. 6-9906-00006/00076) issued by the New York State Department of Environmental Conservation. Jefferson and Lewis counties are in attainment for all criteria pollutants.

Fort Drum is classified as a major source of air pollutant emissions.

Source: 40 CFR 81.127, US Army 2022, USEPA 2024.

E.5.3 Airspace

Fort Drum controls the FAA-designated restricted area airspace associated with the installation (Table E-5).

Table E-5. Fort Drum Airspace

Restricted area	Altitude
R-5201	To 23,000 feet
R-5202 A	23,000 feet to FL 290
R-5202 B	6,000 feet to FL 290

Notes: FL = flight level; FL 290 is roughly equivalent to 29,000 feet.

Source: FAA 2025 (New York Sectional Aeronautical Chart).

E.5.4 Biological Resources

Ecoregion. Fort Drum is in the Eastern Great Lakes Lowlands ecoregion, which surrounds highland ecoregions of northern New York State and much of which has been cleared for agriculture and urban development. The northern portion of Fort Drum is in the St. Lawrence Lowlands subecoregion, where remnant forest is left. The southern portion of the installation is in the Upper St. Lawrence Valley, which is more elevated and rolling than the rest of the valley.

Flora. Fort Drum supports more than 90 landcover/vegetation type classifications and more than 1,000 plant species. Vegetation types include forest, shrub, forb community, and graminoid associations. Each association has upland and wetland subtypes.

Fauna. About 50 mammal species, 250 bird species, 40 fish species, 10 reptile species, 20 amphibian species, and more than 1,000 species of invertebrates occur on Fort Drum. Sandy areas with sparse or low vegetation in the Eastern Lake Ontario ecoregion and the grassland areas in the St. Lawrence Valley ecoregion contain the highest number of New York State species of special concern, mainly birds.

Federally protected species. Two federally protected endangered species of bat, the Indiana bat and northern long-eared bat, are on the installation. The forested habitat throughout the installation is suitable for roosting and foraging for all species of bats that occur on Fort Drum. No known hibernaculum are present. The candidate species monarch butterfly (*Danaus plexippus*) is known to occur on Fort Drum and bald and golden eagles are both known to use Fort Drum throughout the year. No USFWS-designated critical habitat overlaps Fort Drum land.

Source: Bryce et al. 2010, Fort Drum 2021, USFWS 2024.

E.6 Fort Hood

E.6.1 Background

Location and Size. Fort Hood (formerly known as Fort Cavazos) is in Bell and Coryell counties in Texas, 60 miles northwest of Austin, TX, and 50 miles southwest of Waco, TX. Fort Hood covers more than 218,800 acres.

Ranges and Training Areas. About 132,525 acres are used for maneuver training and 64,272 acres are a live-fire impact area. The installation can station and train two armored divisions.

Source. U.S. Army 2022, U.S. Army Fort Cavazos 2023.

E.6.2 Air Quality

Fort Hood is in the Austin-Waco Intrastate AQCR. Bell and Coryell counties are in attainment or unclassifiable for all criteria pollutants. (An unclassifiable area is an area for which not enough data is available to make an attainment or nonattainment determination.)

Fort Hood operates emissions units under a Title V Federal Operating Permit (No. O1659) issued by Texas Commission on Environmental Quality. Fort Hood is a major emissions source with actual or potential emissions at or above the 100 tons threshold for any air pollutant.

Source: 40 CFR 81.134, US Army 2022, USEPA 2024.

E.6.3 Airspace

Fort Hood controls the FAA-designated restricted area airspace associated with the installation (Table E-4).

Table E-4. Fort Hood Airspace

Restricted area	Altitude
R-6302 A	To 30,000 feet
R-6302 B	To 11,000 feet
R-6302 C, D	To 30,000 feet
R-6302 E	30,000 feet to 45,000 feet

Source: FAA 2025 (San Antonio Sectional Aeronautical Chart).

E.6.4 Biological Resources

Ecoregion. Fort Hood is on the boundary between the Edwards Plateau and Cross Timbers and Prairies ecoregions. Installation terrain is predominantly gently sloping but has slopes of up to 33 percent in valley and canyon wall areas. Elevations range from 561 feet in the northeast to 1,231 feet in the south.

Flora. The installation has remnant patches of tallgrass prairie. The slopes, canyons, mesas, and rolling uplands and lowlands on Fort Hood are dominated by three vegetative communities: coniferous forest, deciduous forest and shrub, and mixed forest and shrub.

Fauna. Surveys have confirmed the occurrence or possibility of occurrence of 71 amphibian and reptile species, 341 bird species, 60 fish species, 286 invertebrate species, and 49 mammal species on Fort Hood.

Federally protected species. USFWS lists two federally protected, one proposed, and one candidate species as occurring or having the potential to occur on Fort Hood. The golden-cheeked warbler (*Setophaga chrysoparia*; endangered) has an established population on Fort Hood. The endangered whooping crane was recently recorded on the installation but there is no evidence of an established population there. The proposed endangered tricolored bat has an established population on the installation and is known to roost in small groups of 1–30 individuals in forests and shrublands during warm season and caves and rock shelters during the cool season. The monarch butterfly, a federal candidate species, occurs at Fort Hood. The installation has no restrictions on training in designated threatened and endangered species habitat areas. No USFWS-designated critical habitat is on Fort Hood.

Source: Fort Hood 2019, Griffith et al. 2004, USFWS 2024.

E.7 Fort Knox

E.7.1 Background

Location and Size. Fort Knox is in Bullitt, Hardin, and Meade counties in north-central Kentucky about 40 southwest of Louisville, KY. Installation lands comprise about 109,028 acres. The training complex comprises about 56,000 acres of range and impact areas and 45,000 acres of maneuver training areas.

Ranges and Training Areas. Fort Knox has about 100,000 acres of range land (maneuver and impact areas). It has 61 live-fire ranges, including 27 small arms ranges (up to 50 caliber), 13 firing points, 11 multipurpose ranges (all weapon systems), and 10 other ranges (i.e., aerial gunnery, anti-tank weapons, artillery, grenade, mortar, and multiple launch rocket system). These ranges are arrayed around impact areas and live fire is directed into the impact areas. Maneuvering is the most common type of training on Fort Knox and includes both mounted and dismounted training. Aircraft used in training exercises include UASs.

Source: Fort Knox 2018, US Army 2022.

E.7.2 Air Quality

Fort Knox is in the North Central Kentucky Intrastate Air Quality Control Region and the Kentucky portion of the southeast air quality transport zone. Hardin and Meade counties are in attainment areas, and EPA classifies Bullitt County as in moderate nonattainment for 8-hour O₃ (2015 standard).

Fort Knox operates emission sources under a Title V Federal Operating Permit (No. V-20-037) issued by the Kentucky Department for Environmental Protection. The Fort Knox cantonment area is in attainment for all criteria pollutants and is not subject to a conformity analysis. The installation is a major source of air pollutant emissions.

Fielding activities would be implemented within Bullitt County. The *de minimis* thresholds for O₃ of 50 tpy for VOC and 100 tpy for oxides of nitrogen would apply. The GCR would apply, and the Kentucky SIP would be followed.

Source: 40 CFR 81.193, US Army 2022, USEPA 2024.

E.7.3 Airspace

Fort Knox controls the FAA-designated restricted area airspace associated with the installation (Table E-6).

Table E-6. Fort Knox Airspace

Restricted area	Altitude
R-3704 A	To 10,000 feet
R-3704 B	10,001 feet to 20,000 feet

Source: FAA 2025 (St. Louis Sectional Aeronautical Chart).

E.7.4 Biological Resources

Ecoregion. Fort Knox is in the Interior Plateau ecoregion of Kentucky. Most of the installation is in the Mitchell Plain subregion, characterized by low relief and agriculture. The installation's eastern edge has portions in the Knobs-Norman Upland subregion, characterized by forested hills and ridges. The area is primarily an oak/hickory forest ecosystem with scattered grasslands, narrow streams, and broad river riparian ecosystems. The area's karst topography

has created a system of underground tunnels and caves, many of which are unique aquatic ecosystems.

Flora. Most installation vegetation is scattered prairie grassland remnants and mixed upland hardwood forests. The forested area is generally associated with ridgetops and ridge slope topographies.

Fauna. Fort Knox has traditionally monitored only game species. Game birds such as turkey and game species like white-tailed deer are monitored, and many game fish species are stocked. Surveys have found 117 species of birds as occurring on Fort Knox.

Federally protected species. Eleven federally protected and one candidate species potentially occur on Fort Knox, including the gray, Indiana, and northern long-eared bats and eight species of clams. The monarch butterfly is a common resident of Fort Knox. No USFWS-designated critical habitat is on the installation. The bald eagle is commonly observed in late fall through summer and the installation has one eagle nest. Golden eagles are rare but have been sighted during winter.

Source: Fort Knox 2018, USFWS 2024, Woods et al. 2002.

E.8 Fort Riley

E.8.1 Background

Location and Size. Fort Riley is in North-Central Kansas in Geary and Riley counties, on the Kansas River between Junction City, KS, and Manhattan, KS. Fort Riley covers 101,733 acres.

Ranges and Training Areas. Training areas cover 70,000 acres. All 103 training areas are available for maneuver training. The most heavily used maneuver areas are occupied more than 200 days per year. Range and training facilities provide year-round support for live-fire exercises; maneuver training for mechanized/ armored vehicles; attack helicopter gunnery; operation of rotary-winged aircraft and drone aircraft; small-arms firing; mortar, artillery, and tank firing exercises; engineer obstacle and demolition training; and maneuver training.

The Artillery and Mortar Impact Area and its live-fire training ranges cover 16,200 acres. Live-fire exercises involving mortars, artillery, tanks, and aircraft occur throughout the year. Firing ranges are for large-caliber weapons. Aircraft are used extensively by Army, Army Reserve, National Guard, and Air Force units.

E.8.2 Air Quality

Fort Riley is in the North Central Kansas Intrastate AQCR. This AQCR encompasses 16 counties in Kansas, including Geary and Riley counties. Ambient air quality for this AQCR is classified as in attainment for all criteria pollutants (USEPA 2024).

Fort Riley operates under a Class I Air Emission Source Operating Permit (No. 161001) issued by the Kansas Department of Health and Environment. Fort Riley tracks air emissions from boilers, generators, fuel tanks, and paint booths. Other emission sources include woodworking activities, abrasive blasting, small boilers, small emergency generators, and unpaved roads.

Source: US Army 2022.

E.8.3 Airspace

Fort Riley controls the FAA-designated restricted area airspace associated with the installation (**Table E-8**). Fort Riley airspace covers a ground area of 432 square miles. Flight operations

occur daily, with approximately 21,000 helicopter flight hours and 15,000 UAS hours logged annually.

Table E-8. Fort Riley Airspace

Restricted area	Altitude
R-3602 A, B	To FL 290

Notes: FL = flight level; FL 290 is roughly equivalent to 29,000 feet.

Source: FAA 2025 (Kansas City Sectional Aeronautical Chart).

E.8.4 Biological Resources

Fort Riley is in the Flint Hills ecoregion, which has the largest remaining intact tallgrass prairie in the Great Plains and marks the western edge of that ecosystem. The ecoregion topography is rolling hills. The natural tallgrass prairie exists in most areas and is used for range and pastureland.

Flora. Grasslands cover 67 percent of Fort Riley. Native grasslands on Fort Riley are primarily tallgrass prairie, although they do not exhibit classic tallgrass prairie characteristics. Forest covers 16 percent of the installation, most of which is associated with bottomland forests along the Republican and Kansas rivers and the woodlands within creek drainages. Upland forests occur along mainstems of most streams on the installation.

Fauna. Fort Riley supports about 40 species of mammals, 270 species of birds, 21 species of snake, nine species of lizard, seven species of turtle, 10 species of amphibian, and 60 species of fish. Most bird species found on Fort Riley are migrant, nongame songbirds. Inventories of birds have documented 110 confirmed or probable breeding species. The venomous copperhead is common in woodlands.

Federally protected species. Three federally protected species potentially occur on Fort Riley—the endangered northern long-eared bat, threatened least tern (*Sterna antillarum*), and endangered Topeka shiner (*Notropis topeka*). The proposed endangered tricolored bat and the candidate species monarch butterfly also occur on the installation. The historic range of the northern long-eared bat includes much of Kansas, but the species has not been found in the Fort Riley area. The least tern is uncommon and is primarily a transient migrant but also potentially breeds along river sandbars. The Topeka shiner has been found in many installation creeks, and the tricolored bat has been observed in multiple roost sites and in one hibernaculum. The monarch butterfly is a common resident of the Fort Riley prairie landscapes. No USFWS-designated critical habitat overlaps Fort Riley lands. The bald eagle is a year-round resident, with five eagle nests occurring on and around Fort Riley, and golden eagles have been sighted in some maneuver areas. Mission restrictions based on federally protected species are minimal because of the limited interface between the species and the mission.

Source: Chapman et al. 2001, Fort Riley 2022a, USFWS 2024

E.9 Fort Sill

E.9.1 Background

Location and Size. Fort Sill encompasses about 93,679 acres in Comanche County, OK, about 90 miles southwest of Oklahoma City, OK, and 50 miles north of Wichita Falls, TX. The Wichita Mountains National Wildlife Refuge is along the northwestern border of the installation.

Ranges and Training Areas. Fort Sill is one of the four locations used for Army Basic Combat Training executed by the 434th FA Brigade. Operational units at Fort Sill include the 75th FA Brigade, the 31st ADA Brigade, and the 4-60th ADA BN.

Equipment and weapon systems used on Fort Sill ranges and training areas range from small to heavy arms. Training operations at Fort Sill include artillery and mortar live-fire exercises, UAS operation, off-road vehicle operation and recovery, maneuvering and tactical field training, and radar survey and launcher operations. The Falcon Bombing Range in the Quanah Range on the western end of Fort Sill is used by the Air Force for dropping 500- and 1,000-pound training munitions, practicing laser targeting, and strafing with 20-mm and 30-mm munitions. The West Range impact area is used by the Air Force for close air support training and for dropping 500- and 1,000-pound live munitions.

Source: US Army 2021

E.9.2 Air Quality

The Lawton/Fort Sill area is in the Southwestern Oklahoma Intrastate AQCR. The AQCR is in attainment for all NAAQS.

Fort Sill operates under Oklahoma Department of Environmental Quality Permit (No. 97-373-O (M-16)). The permit is a synthetic minor permit. The controlled emissions of each criteria pollutant is below the major source threshold of 100 tpy. HAP emissions also are below the 10-tpy threshold for a single HAP and below the 25-tpy threshold for any combination of HAPs.

Source: 40 CFR 81.125, USEPA 2024.

E.9.3 Airspace

Fort Sill controls the FAA-designated restricted area airspace associated with the installation (Table E-9).

Table E-9. Fort Sill Airspace

Restricted area	Altitude	Time of use
R-5601 A, B, C	To 40,000 feet	Continuous
R-5601 D, F	500 feet AGL to FL 400 ^a	Sunrise to 2200 M–F; other times by NOTAM
R-5601 E	500 feet AGL to 6,000 feet	Sunrise to 2200 M–F; other times by NOTAM
R-5601 G	500 feet AGL to but not including 8,000 feet	Sunrise to 2200 M–F; other times by NOTAM
R-5601 H	To FL 400 ^a	By NOTAM
R-5601 J	500 feet AGL to FL 400 ^a	Sunrise to 2200 M–F; other times by NOTAM
R-5602 A, B	40,000 feet to 60,000 feet	By NOTAM as coordinated, not to exceed 25 days per year

Notes: AGL = above ground level. FL = flight level; FL 400 is roughly equivalent to 40,000 feet. NOTAM = Notice to Air Missions.

Source: FAA 2025 (Dallas-Fort Worth Sectional Aeronautical Chart).

E.9.4 Biological Resources

Ecoregion. Fort Sill is in the Central Great Plains ecoregion, divided between the grass- and shrub-covered Broken Red Plains and the Wichita Mountains subregions. It sits in an ecological transition area where tallgrass and shortgrass prairies merge.

Flora. More than 70 percent of the installation is grassland communities; a mix of dense woodland, riparian areas, oak savannah, and agricultural lease lands cover the remaining areas. Dense woodlands are found along streams. Former cropland areas support a variety of vegetation including dense stands of non-native species and small areas of native grasses.

Fauna. Fort Sill habitats support a variety of species of mammals, birds, fish, reptiles, and amphibians. Bison inhabit the adjoining Wichita Mountains Wildlife Refuge and have been observed on Fort Sill. More than 400 avian species that use the Central Flyway migration corridor stop over on Fort Sill or are seasonal residents. Prescribed burns are used to improve habitat quality.

Federally protected species. No federally protected species are known to occur on Fort Sill. Federally protected and proposed species have the potential to occur on Fort Sill:

- Rufa red knot (*Calidris canutus rufa*; threatened). According to the Oklahoma Department of Wildlife Conservation, fewer than five of the birds are reported in Oklahoma annually. The closest documented sighting of the species was on Salt Plains National Wildlife Refuge about 150 miles north-northeast of Fort Sill.
- Piping plover (*Charadrius melodus*; threatened). There is a low probability of the species using Fort Sill and then only while migrating through.
- Whooping crane (*Grus americana*; endangered). It could pass over Fort Sill but it would be present only during migration. The Salt Plains National Wildlife Refuge is an important stopover area for the species and has been designated as critical habitat for it.
- Tricolored bat (*Perimyotis subflavus*; proposed endangered). Fort Sill is within the species' range but a bat survey conducted found no threatened or endangered bat species on the installation.
- Monarch butterfly (*Danaus plexippus*; candidate species). Fort Sill is within the species' range.

No USFWS-designated critical habitat overlaps Fort Sill land.

Fifteen species of birds that occur on Fort Sill are protected under the MBTA and the bald (*Haliaeetus leucocephalus*) and golden (*Aquila chrysaetos*) eagles are protected under the BGEPA. The bald eagle is a rare winter visitor to Fort Sill.

Source: FCE-FS 2020, Fort Sill 2019, USFWS 2024, Woods et al. 2005.

E.10 Fort Stewart

E.10.1 Background

Location and Size. Fort Stewart is in Georgia primarily in Bryan and Liberty counties but also extending into smaller portions of Evans, Long, and Tattnall counties. It is about 41 miles southwest of Savannah, GA. Fort Stewart encompasses about 280,000 acres. Wright AAF and Evans AAF are within the boundaries of Fort Stewart proper. Hunter AAF encompasses 5,400 acres; it is a separate facility about 35 miles northeast of Fort Stewart.

Ranges and Training Areas. Fort Stewart is capable of training large, mechanized forces. It is used to train many units not permanently stationed at the installation, particularly those of the National Guard and Army Reserve. The total training impact at Fort Stewart is like that of two heavy divisions.

Units based at Fort Stewart have about 3,400 wheeled and 2,000 tracked vehicles on-station. Installation forces include mechanized infantry BNs with Bradley Fighting Vehicles and tank BNs with M1A1 tanks organized into Combined Arms BNs, field artillery BNs with 155-mm howitzers, ADA with Avenger vehicles, an attack helicopter BN with Apache helicopters, and a cavalry squadron with Bradleys, tanks, and helicopters.

Source: US Army 2022b.

E.10.2 Air Quality

The portion of Fort Stewart in the Georgia counties of Bryan, Evans, Liberty, and Tattnall is in the Savannah (Georgia)–Beaufort (South Carolina) Interstate AQCR. The portion in Long County, GA, is in the Jacksonville (Florida)–Brunswick (Georgia) Interstate AQCR. The counties are in attainment for all criteria pollutants.

Fort Stewart operates emission sources under a Title V Federal Operating Permit issued by Georgia Environmental Protection Division (Permit No. 9711-179-0018-V-04-0). The installation is considered a major source of air emissions. It has the potential to emit 100 tpy of any one criteria pollutant and 25 tpy of total combined HAPs.

Source: 40 CFR § 81.91, 40 CFR § 81.113, US Army 2022b, USEPA 2024.

E.10.3 Airspace

Fort Stewart controls the FAA-designated restricted area airspace associated with the installation (**Table E-10**).

Table E-10. Fort Stewart Airspace

Restricted area	Altitude
R-3005 A, B, C, D, E	To 29,000 feet; 45,000 feet with written request to FAA JAX

Notes: JAX = Jacksonville, FL.

Source: FAA 2025 (*Jacksonville Sectional Aeronautical Chart*).

E.10.4 Biological Resources

Ecoregion. Fort Stewart is in the Southern Coastal Plains ecoregion and the Sea Island Flatwoods subregion, which is characterized by flat plains and low terraces on sand and gravel. Fort Stewart has four broad types of ecosystems—sandhill, pine flatwood, upland forest, and wetlands.

Flora. The Nature Conservancy found 1,066 taxa on 724 sites, representing 465 genera and 139 families on FS-HAAF in a 1995 survey. The Sea Island Flatwoods subregion is mostly coniferous forest and young pine plantation land cover with areas of forested wetland.

Fauna. White-tailed deer (*Odocoileus virginianus*) and feral hogs (*Sus scrofa*) are common in the region, as are many smaller mammals, birds, fish, amphibians, and reptiles. The installation actively manages many species of wildlife and fish as game for sport hunting and fishing.

Federally protected species. USFWS identifies nine federally protected species as potentially occurring on Fort Stewart, including the red-cockaded woodpecker (*Leuconotopicus borealis*). The habitats of most of the listed species on Fort Stewart are types of either wetland or aquatic habitat that would not be affected by the proposed action. The tricolored bat (*Perimyotis subflavus*; proposed endangered) is of concern on Fort Stewart. Bald eagles occur on Fort Stewart. No USFWS-designated critical habitat overlaps Fort Stewart land.

Source: Fort Stewart 2012, Griffith et al. 2001, US Army 2022a, USFWS 2024.

E.11 Joint Base Elmendorf-Richarson (JBER)

E.11.1 Background

Location and Size. JBER occupies 73,041 acres in the Anchorage Borough of southcentral Alaska. It borders the Municipality of Anchorage, AK. JBER includes an additional 5,534 acres at 12 geographically separated units, locations outside the contiguous JBER boundary that are used as remote training and support sites.

Ranges and Training Areas. JBER's impact areas include the Eagle River Flats (ERF) Impact Area, which is used for mortar and artillery firing from approximately 27 active firing points. Training areas on JBER are for maneuver training and weapons training. Maneuver training is conducted in training areas and on JBER unimproved grounds. Weapons training is conducted primarily on firing ranges. The US Army 11th Airborne Division, a unit at JBER, has two brigades and one support BN.

Source: JBER 2023.

E.11.2 Air Quality

JBER is within the Cook Inlet Intrastate AQCR of Alaska. The AQCR is in attainment for all criteria pollutants. JBER operates emission sources under a Title V Federal Operating Permit and is considered a major source of air emissions. The base has the potential to emit 100 tpy of any one criteria pollutant and 25 tpy of total combined HAPs.

Source: 40 CFR 81.54, ADEQ 2011, ADEC 2022, US Army 2022, USEPA 2024.

E.11.3 Airspace

JBER controls the FAA-designated restricted area airspace associated with the base (**Table E-11**).

Table E-11. JBER Airspace

Restricted area	Altitude
R-2201 A, B	To but not including 6,000 feet
R-2201 C, D	6,000 feet to 11,000 feet
R-2202 A, B; R-2205 A–E	To but not including 10,000 feet
R-2202 C; R-2205 F, G, H, J, K	10,000 feet to FL 310
R-2202 D	Above FL 310 to unlimited
R-2203 A, B	To 11,000 feet
R-2203 C	To 5,000 feet
R-2211	To FL 310

Note: FL = flight level; FL 310 is roughly equivalent to 31,000 feet. R-2201 and R-2202 are Fort Greely airspace. R-2205 and R-2211 are Eielson Air Force Base airspace.

Source: FAA 2025 (Anchorage Sectional Aeronautical Chart).

E.11.4 Biological Resources

Ecoregion. JBER lies within two ecoregions. The western half nearer to Cook Inlet is within the Cook Inlet ecoregion and the eastern portion is within the Pacific Coastal Mountains ecoregion. The Cook Inlet ecoregion is characterized as having one of the mildest climates in Alaska. The area is generally free from permafrost. The Pacific Coastal Mountains ecoregion is

characterized by steep and rugged mountains, most of which is covered by glaciers and ice fields.

Flora. The Cook Inlet ecoregion is dominated by spruce and hardwood species where vegetated. Most of the Pacific Coastal Mountains ecoregion is barren of vegetation; where plants grow, dwarf and low scrub communities dominate.

JBER has five physiographic vegetation zones: the Alpine Zone above the tree line with shrub habitat and rock talus; the Coastal Halophytic Zone along Cook Inlet; the Disturbed Area Zone, which is developed; the Lowland Interior Forest Zone characterized by mixed hardwood-softwood forest and wetlands; and the Subalpine Zone consisting of mixed hardwood-softwood forest interspersed with shrub and meadow habitats and scattered bogs.

Fauna. Most species indigenous to the south-central part of Alaska are known to occur on JBER. Large mammals that occur on JBER include black bear (*Ursus americanus*), brown bear (*U. arctos*), moose (*Alces alces gigas*), and wolf (*Canis lupus*). Small mammals include the little brown bat (*Myotis lucifugus*), coyote (*Canis latrans*), lynx (*Lynx canadensis*), red fox (*Vulpes vulpes*), and wolverine (*Gulo gulo*). Wildlife and supporting habitat are abundant on JBER and in surrounding areas. Marine mammals occur in Cook Inlet. All five Pacific salmon species found in North America return to JBER streams to spawn.

Federally protected species. Cook Inlet beluga whale (*Delphinapterus leucas*) is the only federally endangered species known to occur on JBER. The Cook Inlet beluga whale inhabits reaches of Eagle River within the boundary of JBER. USFWS lists the Short-tailed Albatross (*Phoebastria (=Diomedea) albatrus*; endangered) as occurring within the Cook Inlet. No USFWS-designated critical habitat overlaps JBER land. Bald and golden eagles occur throughout most of Alaska.

Source: Gallant et al. 1995, JBER 2023, USFWS 2024.

E.12 Joint Base Lewis-McChord (JBLM)

E.12.1 Background

Location and Size. JBLM encompasses 90,283 acres on-base in Pierce and Thurston counties in western Washington State and another 323,431 acres at the Yakima Training Center (YTC) in Yakima County outside Yakima, WA, about 130 miles southeast of the base. JBLM is bordered on the north by several municipalities, urban and rural unincorporated areas, the Puget Sound, the Nisqually National Wildlife Refuge, and the Nisqually Indian Reservation.

Ranges and Training Areas. JBLM training lands are primarily used for live-fire training, tactical field exercises, and C-17 training and missions. JBLM training facilities include ranges, non-firing facilities, impact areas, airfields, airstrips, helicopter landing zones, drop zones, and numbered training areas. Live-fire military training is conducted on four impact areas on Lewis Main and Lewis North: the North Impact Area (small arms on 14 firing ranges), the Central Impact Area (small arms on 48 ranges), the Artillery Impact Area (with 13 small-arms and live-fire maneuver/combined arms live-fire exercise ranges, 37 artillery firing points, and 13 mortar points), and the South Impact Area (with eight small-arms and live-fire maneuver/combined arms live-fire exercise ranges and one mortar firing point). Off-road maneuver training is conducted primarily in five maneuver areas. Training activities include unit deployment exercises via land, sea, and air.

YTC has recently undergone improvements to increase its capability to support training. The Multi-Purpose Training Range was completed, 250 miles of road were constructed, and a wash rack facility, new fuel facility, and expanded Ammunition Supply Point were added to the

maneuver area. YTC provides training support for transient units and organizations. The installation's customers include JBLM, Army National Guard, Special Operations Command, Marine Corps, Air Force, Navy, and Coast Guard units, plus local and federal Law Enforcement and allied forces from Canada and Japan.

Source: JBLM 2023, US Army 2022b, US Army 2025.

E.12.2 Air Quality

JBLM is in the Puget Sound Intrastate AQCR and Olympic-Northwest Washington Intrastate AQCR, in Pierce and Thurston counties, respectively. YTC is in the South Central Washington AQCR in Yakima County. All three counties are in full attainment for all criteria pollutants.

Areas of Pierce County near the City of Tacoma have a maintenance SIP for particulate matter with a diameter less than or equal to 2.5 microns (PM_{2.5}) to ensure that attainment is maintained. The state's air quality regulations outline requirements for controlling fugitive dust.

JBLM maintains a synthetic minor permit. Any increase in stationary source emissions could require the transition back to major source status. The permit limits the installation to 95 tons of oxides of nitrogen, 95 tons of CO, and 95 tons of VOC in any consecutive 12-month period. Motor vehicles and industrial sources (aerospace maintenance and rework operations, fuel burning, fuel storage and dispensing, degreasing, woodworking, and painting operations) are the primary emission sources at JBLM.

Source: 40 CFR 81.32, 40 CFR 81.187, Puget Sound Clean Air Agency 2022, US Army 2022a, (US Army 2022b, USEPA 2024, WAEcology 2023).

E.12.3 Airspace

JBLM and the Yakima Training Center control the FAA-designated restricted area airspace associated with the base and YTC (**Table E-12**).

Table E-12. JBLM and Yakima Training Center Airspace

Restricted area	Altitude
R-6703 A–E	To 14,000 feet
R-6703 F–J	To 5,000 feet
R-6714 A–D, F, G	To but not including 29,000 feet
R-6714 E	29,000 feet to but not including 55,000 feet
R-6714 H	To but not including 5,500 feet

Notes: R-6703 is JBLM airspace. R-6714 is Yakima Training Center airspace.

Source: FAA 2025 (Seattle Sectional Aeronautical Chart).

E.12.4 Biological Resources

Ecoregion. JBLM lies in the Puget Lowland ecoregion and within that, primarily in the Southern Puget Prairies subecoregion. The landscape has undergone dramatic changes from fire suppression, non-native species, and land conversion, but major existing natural land covers include conifer forests, conifer savannas, oak woodlands, grasslands (prairies), and forested and non-forested wetlands. YTC is primarily within the Yakima Folds subecoregion of the Columbia Plateau ecoregion.

Flora. About 700 species of vascular plants are found on the installation. The four main habitat types are coniferous/ mixed forests, oak/oak-mixed woodlands, prairies, and wetlands/riparian areas. Forested areas of JBLM cover about 52,600 acres of land with three main forest types:

dry Douglas-fir (*Pseudotsuga menziesii*) forest, moist Douglas-fir/red cedar (*Thuja plicata*)/western hemlock (*Tsuga heterophylla*) forest, and wetland/floodplain forest. An estimated 20,000 acres of prairie habitat occur on JBLM. Sagebrush and bunchgrass associations dominate plant assemblages of YTC, with needle-and-thread, bluebunch wheatgrass, Sandberg bluegrass, Wyoming big sagebrush, and basin big sagebrush. Alien cheatgrass also covering broad areas.

Fauna. JBLM provides habitat for a variety of wildlife species including black bear, brown bear, and moose. The Yakima Valley area is rich in birdlife, with over 200 species breeding, migrating, and wintering in the Yakima River Canyon. Bald eagles, hawks, and falcons nest in the canyon. Common mammals in the Yakima area include bighorn sheep, elk, and mule deer. Riparian forests in the Yakima Basin provide critical habitat for these species, as well as for smaller mammals.

Federally protected species. The JBLM INRMP lists 17 federally protected species as occurring on the base—one plant species, one invertebrate species, one amphibian species, four bird species, one mammal species, six fish species, and three marine mammal species. Species that live in prairie habitats could be affected by the proposed action. These include the Mazama pocket gopher (*Thomomys mazama*; threatened), streaked horned lark (*Eremophila alpestris strigata*; threatened), and Taylor's checkerspot (*Euphydryas editha taylori*; endangered). Other species would not be affected. No USFWS-designated critical habitat overlaps JBLM land.

USFWS lists # federally protected species as potentially occurring on YTC—one mammal, one bird, one fish (bull trout [*Salvelinus confluentus*]), an insect and two flowering plants. Critical habitat for the bull trout includes tributaries of the Columbia River.

Source: Chappell and Crawford 1997, JBLM 2019, USEPA 2010, USFWS 2024.

E.13 US Army Garrison (USAG) Alaska, Fort Wainwright

E.13.1 Background

Location and Size. USAG Alaska, Fort Wainwright (Fort Wainwright) is in central Alaska, north of the Alaska Range in the Tanana River Valley. Fort Wainwright has six major training areas—Black Rapids Training Area, Donnelly Training Area East and West, Gerstle River Training Area, Tanana Flats Training Area, Whistler Creek Training Area, and Yukon Training Area—totaling about 1.6 million acres.

Ranges and Training Areas. The Black Rapids Training Area (BRTA) covers 3,807 acres 30 miles south of Delta Junction, next to the Delta River. It is east of Fort Greely and the Donnelly Training Area. The area is surrounded by private and public land. The site provides training in demanding cold weather and mountain environments.

Donnelly Training Area (DTA) East and West. The DTA is 107 miles southeast of Fairbanks and west of Fort Greely. It is bordered on the south by the Alaska Range and on the north, east, and west by open land. It has 674,128 acres within the installation boundary. Training areas total 655,191 acres, including 141,559 acres of contiguous duded impact area. The DTA has eight light maneuver training areas encompassing 567,734 acres and seven heavy maneuver training areas within 87,457 acres. Duded and non-duded impact areas are active live fire ranges and are not suitable for maneuver training or other use.

Gerstle River Training Area (GRTA). The GRTA is approximately 35 miles southeast of Delta Junction and about 100 miles southeast of Fairbanks, AK. It encompasses about 20,500 acres.

It was originally the Gerstle River Test Site in the early 1950s for testing chemical and biological agents. Testing activities continued until 1967. Today it is used for military training exercises.

Tanana Flats Training Area (TFTA). The TFTA has 592,699 acres available for training. The maneuver areas and drop zones comprise approximately 86 percent of the installation's area. It has 58,826 acres of impact areas. The TFTA has six indirect fire facilities; 11 other, non-live fire facilities; and eight light maneuver training areas.

Whistler Creek Training Area (WCTA). The WCTA encompass 543 acres of land southeast of Fort Greely and the DTA. Munitions authorized for use at WCTA are small-caliber blanks, simulators, large-caliber blanks, and pyrotechnics and obscurants.

The Yukon Training Area (YTA) borders Eielson Air Force Base to the north and east and is surrounded on three sides by private land. Recreational and conservation land is to the northeast. The YTA is located approximately 15 miles southeast of the main Fort Wainwright area and consists of 266,891 acres within the installation boundaries. Eight light maneuver training areas are contained within 257,281 acres. More than 25,000 acres are allocated as duded impact areas.

Source: Gallant et al. 1995, JPARC 2012a–d, USAG AK 2020.

E.13.2 Air Quality

Fort Wainwright maintains an Air Quality Operating Permit (No. AQ0236TVP04) issued by the Alaska Department of Environmental Conservation. Fort Wainwright and the City of Fairbanks are in the Fairbanks North Star Borough (FNSB) of the Northern Alaska Interstate AQCR. USEPA has designated portions of the FNSB as in serious nonattainment for PM_{2.5}, maintenance for CO, and attainment for all other criteria pollutants.

Source: ADEC 2020, USEPA 2024.

E.13.3 Airspace

The FAA-designated restricted area airspace associated with USAG Alaska (Fort Wainwright), Eielson Air Force Base, Fort Greely, and the YTC is under those installations' control (**Table E-13**).

Table E-13. Fort Wainwright Airspace

Restricted area	Altitude
R-2201 A, B	To but not including 6,000 feet
R-2201 C, D	6,000 feet to 11,000 feet
R-2202 A, B; R-2205 A, B, C, D, E	To but not including 10,000 feet
R-2202 C; R-2205 F, G, H, J, K	10,000 feet to FL 310
R-2202 D	Above FL 310 to unlimited
R-2211	To FL 310

Notes: FL = flight level; FL 310 is roughly equivalent to 31,000 feet. R-2201 and R-2202 are Donnelly Training Area airspace. R-2205 is Fort Wainwright airspace, and R-2211 is Eielson Air Force Base airspace.

Source: FAA 2025 (Anchorage and Fairbanks Sectional Aeronautical Charts).

E.13.4 Biological Resources

Ecoregion. Fort Wainwright lies within the Interior Bottomlands and Interior Forested and Lowlands and Uplands ecoregions. The BRTA and GRTA are primarily in the Alaska Range ecoregion. The DTA has portions in the Alaska Range and Interior Forested and Lowlands

ecoregions. The TFTA has portions in these ecoregions and the Alaska Range ecoregion. The YTA has portions in the Interior Bottomlands and Interior Highlands ecoregions.

Flora. About 510 vascular plant species are known on Fort Wainwright. Fort Wainwright lands are within the boreal forest or taiga, which is a mix of forest, wetland, grassland, low and tall shrub habitats, and alpine tundra. This vegetation mosaic is shaped by fire, with soils, slope, aspect, and elevation playing a large role. Forests include black (*Picea mariana*) and white spruce (*P. glauca*) forests, deciduous forests of birch (*Betula papyrifera*), balsam poplar and aspen (*Populus* spp.), or mixed forests. Wetlands include forested, bogs, fens, and wet sedge meadows.

Fauna. Most vertebrate species indigenous to central Alaska can be found on Fort Wainwright. It is home to about 40 mammal species, 160 bird species, 15 fish species, and one amphibian species.

Federally protected species. No federally listed threatened or endangered animal or plant species are known to occur on Fort Wainwright. No USFWS-designated critical habitat overlaps USAG Alaska land. The bald eagle is locally common.

Source: Gallant et al. 1995, Lichvar 2000, Tande et al. 1996, USAG AK 2020, USFWS 2024, Viereck et al. 1992.

E.14 US Army Garrison (USAG) Hawaii

E.14.1 Background

Location and Size. USAG Hawaii is headquartered at Schofield Barracks Military Reservation (SBMR), 25 miles northwest of Honolulu on the Island of Oahu. It has a support BN at the Pohakuloa Training Area (PTA) on the Island of Hawaii on the high plateau between Mauna Loa, Mauna Kea and the Hualālai volcanic mountains. USAG Hawaii manages 22 installations and approximately 188,466 acres of land in Hawaii.

Ranges and Training Areas. Total maneuver area on Oahu is approximately 47,278 acres. The acreage available for maneuvers, however, is approximately 14,820 acres once all training limitations are considered. The six principal installations on Oahu are small and noncontiguous and have limited ability to support tactical exercises above the company level. SBMR's West Range Area, however, has a Multi-Purpose Range Complex that can support up to company-sized units and live-fire maneuver training. USAG Hawaii's Oahu training complex has 32 firing ranges, non-firing ranges, and three laser ranges, as well as other training areas, airfields, drop zones, landing zones, and field artillery and mortar firing points. Off-limits and restricted areas, impact areas, and habitat and species conservation areas on each installation reduce and compartmentalize the net available maneuver and training space.

E.14.2 Air Quality

Honolulu County is in the State of Hawaii AQCR. The AQCR encompasses the entire State of Hawaii. USEPA has designated the state as in attainment for all criteria pollutants for which designations have been issued.

USAG Hawaii operates emission sources under one major synthetic permit and one minor synthetic permit for Schofield Barracks and Tripler Army Medical Center, issued by the Hawaii Department of Health. The controlled emissions of each of the criteria pollutants are below the major source threshold of 100 tpy and the HAP emissions are below the 10-tpy threshold for a single HAP and below the 25-tpy threshold for any combination of HAPs.

Source: 40 CFR 81.76, HDOH 2023, US Army 2022, USAG-HI 2023, USEPA 2024.

E.14.3 Airspace

USAG Hawaii controls the FAA-designated restricted area airspace associated with the Schofield Barracks on Oahu (**Table E-14**).

Table E-14. USAG-HI Airspace

Restricted area	Altitude
R-3103	To 30,000 feet
R-3109 A, C	To but not including 9,000 feet
R-3109 B	9,000 feet but not including 19,000 feet
R-3110 A, C	To but not including 9,000 feet
R-3110 B	9,000 feet but not including 19,000 feet

Source: FAA 2025 (*Hawaiian Islands Sectional Aeronautical Chart*).

E.14.4 Biological Resources

Ecoregion. The Hawaiian Islands have about 150 distinct ecosystem types that range from tropical dry forest to subalpine grasslands and snowy alpine deserts to windswept coastal dunes. The Koolau Mountain Range on the eastern side of Oahu has retained much of its native vegetation and is characterized as a montane wet forest and shrubland ecotype. The rest of Oahu retains little of its natural ecotypes and is dominated by non-native vegetation.

Flora. The varied topography, weather patterns, and geography of the Hawaiian Islands create varied habitats, each with a unique climate and unique floral assemblages. For example, SBMR has documented four native vegetative communities and 259 species of plants. Sub-installations are equally florally diverse.

Fauna. Habitat diversity creates an equally diverse fauna, including non-native species. SBMR has more than 100 documented fauna species.

Federally protected species. Documented federally protected, proposed, and candidate species on USAG Hawaii properties range from one to 48 depending on the property. USFWS-designated critical habitat—of mostly flowering plants and insects—overlaps numerous areas of USAG Hawaii land. Golden eagles rarely visit the Hawaiian Islands, and USFWS notes that there are no documented cases of eagles (bald or golden) at USAG Hawaii.

Source: HNG 2023, UHM 2002, USFWS 2024.