Expansion of the Foreign Military Sales F-35 Pilot Training Center

at Ebbing Air National Guard Base, Arkansas

DRAFT

Supplemental Environmental Impact Statement

Volume 1: Main Document

August 2025

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Privacy Advisory

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

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 Personal information, home addresses, telephone numbers, and email addresses will not be published in this SEIS.

Section 508 of the Rehabilitation Act of 1973

The digital version of this SEIS and its project website are compliant with Section 508 of the Rehabilitation Act of 1973 because assistive technology (e.g., "screen readers") can be used to help the disabled understand these electronic media. Due to the nature of graphics, figures, tables, and images occurring in the document, accessibility may be limited to a descriptive title for each item.

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COVER

a. Responsible Lead Agency: Department of the Air Force (DAF); Air Education and Training Command (AETC)

b. Cooperating Agencies: Federal Aviation Administration (FAA); United States Forest Service (USFS)

c. Title: *Supplemental Environmental Impact Statement (SEIS) for the Expansion of the Foreign Military Sales (FMS) F-35 Pilot Training Center (PTC) at Ebbing Air National Guard (ANG) Base, Arkansas*

d. Inquiries: Information regarding the SEIS is available on the project website at https://www.fmsptceis.com. Questions can also be directed to the AETC Public Affairs: phone number: (210) 652-9324; email address: AETC.PAO@us.af.mil. The Draft SEIS 45-day comment period begins with publication of the Notice of Availability in the Federal Register. The DAF recommends all comments be submitted during this 45-day comment period to allow sufficient time for full consideration in the Final SEIS.

e. Designation: Draft SEIS

f. Abstract: The DAF is proposing to expand the FMS PTC at Ebbing ANG Base, Arkansas. The DAF is the lead agency and FAA and USFS are serving as Cooperating Agencies because the scope of the DAF's Proposed Action and Alternatives involve activities under FAA's and USFS's jurisdiction by law and special expertise. This SEIS was prepared pursuant to the National Environmental Policy Act (NEPA), Title 42 of the United States Code §§ 4321–4347 and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. The Proposed Action is to beddown 12 additional F-35s at Ebbing ANG Base, for a total of 36 F-35 and 12 F-16 aircraft, and for F-35B aircraft to conduct Short Takeoff and Vertical Landing operations on the airfield. The Proposed Action would also include increased airfield and airspace operations; construction projects; and personnel increases. Alternative 1 would implement F-35B Short Takeoff and Vertical Landing operations on the airfield, which would require the construction of a Vertical Landing Pad, but the DAF would not beddown any additional aircraft, construct new facilities, or increase personnel. This SEIS analyzes potential effects from implementing the Proposed Action, Alternative 1, and the No Action Alternative.

g. Comment Dates: Comments can be submitted on the project website at https://www.fmsptceis.com or mailed to the Department of the Air Force, c/o Leidos, Attn: Ebbing SEIS, 12304 Morganton Highway #38, Morganton, GA 30560. For comments to be fully considered in the Final SEIS, comments should be postmarked or received by the DAF by September 24, 2025.

h. Note: The DAF is rescinding its NEPA regulations found at Title 32 Code of Federal Regulations § 989 because the Council on Environmental Quality's NEPA regulations, which they were meant to supplement, have been rescinded, and because the Department of Defense is promulgating Department-wide NEPA procedures that will guide DAF's NEPA process. The interim final rule is effective July 1, 2025.

i. EIS Identification Number: SEIS-007-57-UAF-1750846563.

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SUMMARY

S.1. INTRODUCTION

This Supplemental Environmental Impact Statement (SEIS) has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of proposed modifications to the Foreign Military Sales (FMS) Pilot Training Center (PTC) at Ebbing Air National Guard (ANG) Base in Fort Smith, Arkansas. In January 2023, the Department of the Air Force (DAF) completed the *Beddown of a Foreign Military Sales (FMS) Pilot Training Center (PTC) at Ebbing Air National Guard Base, Arkansas or Selfridge Air National Guard Base, Michigan Final Environmental Impact Statement* (EIS) (hereinafter referred to as the "2023 FMS PTC EIS"). On March 11, 2023, the DAF and signed the Record of Decision (ROD) selecting Ebbing ANG Base as the location for the FMS PTC, authorizing the beddown of 24 F-35 aircraft and relocation of 12 Republic of Singapore Air Force F-16 aircraft.

Since the signing of the 2023 FMS PTC EIS ROD, new training requirements have emerged due to additional FMS purchases of F-35 aircraft, including operations that incorporate the F-35B's Short Takeoff and Vertical Landing (STOVL) capabilities. This SEIS evaluates the environmental effects associated with expanding the FMS PTC mission at Ebbing ANG Base, which includes increasing aircraft capacity at Ebbing ANG Base from 24 to 36 F-35 Primary Aerospace Vehicle Authorization (PAA), revising training requirements, expanding the footprint of the PTC through construction of new infrastructure, renovation of existing facilities, and an increase in personnel.

The DAF is the lead agency and the Federal Aviation Administration and the United States Forest Service are serving as Cooperating Agencies because the scope of the DAF's Proposed Action and Alternatives involve activities under the Federal Aviation Administration's and United States Forest Service's jurisdiction by law and special expertise.

S.2. PURPOSE OF AND NEED FOR THE ACTION (SEIS CHAPTER 1)

The purpose of the action is to establish a permanent FMS F-35 PTC at a single location within the Continental United States for FMS F-35 pilot training.

The need for the action is to provide a centralized location for FMS training and pilot production. After the 2023 FMS PTC EIS ROD was signed, additional FMS nation customer participation in the F-35 enterprise resulted in additional training requirements exceeding the current 24 F-35 PAA limit. Therefore, the DAF needs additional F-35 capacity to expand beyond 24 F-35 PAA at Ebbing ANG Base, as authorized in the 2023 FMS PTC EIS ROD, to meet the new requirements.

The SEIS addresses the need for new requirements and refined operational procedures identified since completion of the 2023 FMS PTC EIS. These include increasing the capacity and footprint of the PTC at Ebbing ANG Base/Fort Smith Regional Airport (FSRA), basing 12 additional F-35 PAA, incorporating F-35B STOVL requirements and Vertical Landing Pads (VLPs), implementing new construction and renovation projects, and increasing the number of support personnel.

S.3. OVERVIEW OF PROPOSED ACTION AND ALTERNATIVES (SEIS CHAPTER 2)

The SEIS evaluates the environmental effects of three alternatives: (1) the Proposed Action to expand the FMS PTC at Ebbing ANG Base to accommodate up to 36 F-35 aircraft, (2) the No Action

Alternative, which would maintain the existing beddown of 24 F-35s and 12 F-16s as approved in the 2023 FMS PTC ROD, and (3) Alternative 1, which would implement refined operational procedures (including STOVL operations) and construct a VLP, but would not beddown the additional 12 F-35 aircraft or increase personnel at Ebbing ANG Base.

S.3.1 Proposed Action (SEIS Section 2.1)

The DAF proposes to expand the FMS PTC mission at Ebbing ANG Base beyond what was analyzed in the 2023 FMS PTC EIS and authorized in the ROD, which included 24 F-35 and 12 F-16 aircraft, and associated operations, personnel, and facilities. The Proposed Action would beddown an additional 12 F-35s for a total of 36 F-35 PAA and 12 F-16 aircraft at Ebbing ANG Base. There would also be an increase in F-35 operations, personnel, and new facilities as described in the following subsections. The actual number of F-35s present at Ebbing ANG Base at any one time may vary based on customer countries' needs. However, the steady-state number of F-35s would not exceed 36 PAA, and FMS PTC operations would not exceed those analyzed in this SEIS. The analysis is based on the maximum number of FMS PTC operations that would be authorized. Additionally, while the 2023 FMS PTC EIS did not include F-35B STOVL operations, they are included as part of this Proposed Action.

S.3.1.1 Aircraft Operations (SEIS Section 2.1.1)

Airfield Operations

The FSRA airfield would be utilized for FMS PTC F-35 training operations under the Proposed Action and would include VLP maneuvers. Annual airfield operations would increase from 63,979 in the 2023 FMS PTC EIS to 69,661.

Airspace and Ranges

F-35 operations under the Proposed Action would occur within existing designated Special Use Airspace, which are the same airspace and ranges originally included and described in the 2023 FMS PTC EIS. Aircraft operating out of Ebbing ANG Base/FSRA primarily utilize the Hog Military Operations Area (MOA)[1]; the Shirley MOA; a corridor between the Hog and Shirley MOAs called the "Pig Path"; Military Training Routes (MTRs)[2] consisting of Visual Routes[3] (VRs), including VR-189, VR-1102, VR-1103, VR-1104, VR-1113, VR-1130, and VR-1182; and Instrument Routes[4] (IRs) consisting of IR-117, IR-120, IR-121, and IR-164. While predominant FMS PTC training operations would occur in the primary use airspace, FMS PTC aircraft training may occasionally occur in other Special Use Airspace, Air Traffic Control Assigned Airspace, and MTRs as discussed in the 2023 FMS PTC EIS. Operations on the "Pig Path" would be relatively infrequent and would consist primarily of FMS PTC aircraft transiting between the Hog and Shirley MOA airspace complexes.

[1] A MOA is airspace designated outside of Class A airspace, to separate or segregate certain nonhazardous military activities from Instrument Flight Rules traffic and to identify for Visual Flight Rules traffic where these activities are conducted.
[2] Generally, MTRs are established below 10,000 feet mean sea level for operations at speeds in excess of 250 knots.
[3] Visual Flight Rules means that the aircraft may operate without the use of instrumentation during nice and clear weather. Clouds, heavy precipitation, low visibility, and otherwise adverse weather conditions should be avoided under Visual Flight Rules.
[4] Instrument Flight Rules implies that the flight may operate in cloudy or otherwise adverse weather conditions using instruments only.

Annual airspace events under the Proposed Action would increase by 13 percent (%) and MTR events would increase by 2% as compared to the 2023 FMS PTC EIS. However, annual nighttime operations and events would decrease by approximately 26%.

Munitions and Countermeasure Use

The Proposed Action also includes munitions and countermeasure use in the same ranges and airspace as authorized and described in the 2023 FMS PTC EIS. Razorback Range (Restricted Area 2401/Restricted Area 2402 [R-2401/R-2402]) contains varied target sets for supporting laser and air-to-ground weapons training. Live weapons are not permitted in the Razorback Range. However, live-fire training would be conducted during formal training exercises at Fort Johnson (formerly Fort Polk), Louisiana. Munitions and countermeasure use under the Proposed Action would increase by 126,758, flare use by 4,000 and chaff use by 8,000 as compared to the 2023 FMS PTC EIS.

S.3.1.2 Personnel/Manpower (SEIS Section 2.1.2)

The Proposed Action would add 271 personnel and 325 dependents, for a total of an additional 596 persons at Ebbing ANG Base. This would represent a 31% increase in total persons over the 2023 FMS PTC EIS ROD.

S.3.1.3 Facility Requirements (SEIS Section 2.1.3)

Construction and renovation projects would occur at Ebbing ANG Base/FSRA to support the 12 new F-35 PAA and STOVL operations. Under the Proposed Action, the DAF would construct and renovate approximately 1.2 million square feet of facilities. These projects are in addition to the construction and renovation projects described and listed in the 2023 FMS PTC EIS. Most FMS PTC facilities under the Proposed Action would primarily be developed near the main ramp, with a couple of projects proposed for other parts of the FSRA airfield, outside Ebbing ANG Base boundaries.

To support the proposed F-35B STOVL operations, the DAF would construct one VLP within the FSRA airfield. This SEIS evaluates two alternative locations to site the VLP: the West VLP Site Subalternative and the East VLP Site Subalternative. The West VLP Site Subalternative would construct the VLP and connecting taxiway along the southwestern end of Runway 02/20 and the East VLP Site Subalternative would construct the VLP and connecting taxiway along the southeastern end of Runway 08/26.

S.3.2 No Action Alternative (SEIS Section 2.2)

Under the No Action Alternative, the DAF would not expand the FMS PTC mission at Ebbing ANG Base and the DAF would proceed with the implementation of the 2023 FMS PTC ROD issued on March 11, 2023. The total number of aircraft, operations, and personnel at Ebbing ANG Base/FSRA would not change from what was authorized in the 2023 FMS PTC EIS ROD. Additionally, only those construction and renovation projects assessed in the 2023 FMS PTC EIS for Ebbing ANG Base/FSRA would occur.

If the No Action Alternative were implemented, the DAF would need to undertake a new basing action to determine another location that meets the underlying purpose and need. This would require additional National Environmental Policy Act analysis. That process and subsequent beddown would not meet national security agreements with FMS customer countries.

S.3.3 Alternative 1 (SEIS Section 2.3)

Under Alternative 1, the DAF would not beddown the additional 12 F-35 PAA, but FMS PTC operations would be modified for the existing 24 F-35 PAA to satisfy new requirements and refined operational procedures identified for F-35A and F-35B aircraft since completion of the 2023 FMS PTC EIS. The number of annual military operations at FSRA, airspace events, MTR events, nighttime operations and events, as well as use of munitions and countermeasures would not change from those included in the 2023 FMS PTC EIS. Personnel numbers would not change from the 2023 FMS PTC EIS ROD. Since F-35B aircraft would conduct STOVL operations under Alternative 1, the West VLP Site and the East VLP Site Subalternatives are carried forward for detailed analyses under this alternative.

S.4. ENVIRONMENTAL CONSEQUENCES (SEIS CHAPTER 3)

Table S-1 presents a summary of potential environmental effects by alternative and environmental resource area.

Table S-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
Noise	*Installation and Surrounding Area*: There would be no additional noise effects, and noise levels would be as described in the 2023 FMS PTC EIS § 3.3.5 (Section 3.2.2.3.1). *Airspace and Ranges*: There would be no additional noise effects. Noise levels would be as described in the 2023 FMS PTC EIS § 3.3.4.2 and would remain below L_{dnmr} 65 dBA and DNL 65 dBA (Section 3.2.2.3.2).	*Installation and Surrounding Area*: Up to an additional 1,788 acres of land affected by DNL 65 dBA or greater and up to an additional 6,493 people affected by DNL 65 dBA or greater (Section 3.2.2.1.1). Noise increases at multiple representative points of interest would be adverse and significant. *Airspace and Ranges*: Time-averaged noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA (Section 3.2.2.1.2). Therefore, noise effects would not be significant.	*Installation and Surrounding Area*: Up to an additional 870 acres of land affected by DNL 65 dBA or greater and up to an additional 4,426 people affected by DNL 65 dBA or greater (Section 3.2.2.1.1). Noise increases at multiple representative points of interest would be adverse and significant. *Airspace and Ranges*: Time-averaged noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA (Section 3.2.2.2.2). Therefore, noise effects would not be significant.
Land Use	*Installation and Surrounding Area*: Noise levels at Ebbing ANG Base/FSRA would be the same as what was described and authorized in the 2023 FMS PTC EIS § 3.4.5.1 and ROD (see Section 3.3.1.1). Significant adverse effects to residential land use would continue. Some commercial and public/quasi-public uses in the surrounding area could also continue to experience moderate adverse effects.	*Installation and Surrounding Area*: The land area outside the Ebbing ANG Base/FSRA boundary exposed to noise levels of DNL 65 dBA and greater under the West and East VLP Site Subalternatives would increase by 1,764 and 1,788 acres respectively. Notably, the area of residential land exposed to noise of DNL 65 dBA and greater would increase by 556 and 561 acres, respectively. The effects on residential land use are adverse and significant under both subalternatives.	*Installation and Surrounding Area*: The land area outside the Ebbing ANG Base/FSRA boundary exposed to noise levels of DNL 65 dBA and greater under the West and East VLP Site Subalternatives would increase by 863 and 870 acres, respectively. Notably, the area of residential land exposed to noise of DNL 65 dBA and greater would increase by 322 and 323 acres, respectively. The effects on residential land use are adverse and significant under both subalternatives.

Table S-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
	Airspace and Ranges: Noise levels in the airspace would not change from what was described in the 2023 FMS PTC EIS § 3.4.4.2. There would be low-to-moderate adverse effects on underlying land uses and associated activities.	*Airspace and Ranges*: Noise levels in the airspace would remain below L_{dnmr} 65 dBA and DNL 65 dBA, which is compatible with all land use categories in developed areas. Some noise-sensitive land uses would experience up to L_{dnmr} 3.1 dBA (DNL 3 dBA) time-averaged noise increases. These small increases may be perceived as adverse effects to visitors or users of these areas where an otherwise quiet setting is expected for primitive recreation. However, the resulting time-averaged noise-level increases would not be significant based on DoD and FAA guidelines for outdoor recreational uses.	*Airspace and Ranges*: Noise levels in the airspace would remain below L_{dnmr} 65 dBA and DNL 65 dBA, which is compatible with all land use categories in developed areas. Some noise-sensitive land uses would experience up to L_{dnmr} 2 dBA (DNL 1.9 dBA) time-averaged noise increases. These small increases may be perceived as adverse effects to visitors or users of these areas where an otherwise quiet setting is expected for primitive recreation. However, the resulting time-averaged noise-level increases would not be significant based on DoD and FAA guidelines for outdoor recreational uses.
Socioeconomics	*Installation and Surrounding Area*: There would be no additional incoming personnel or dependents associated beyond what was authorized in the 2023 FMS PTC EIS and ROD. Socioeconomic conditions would continue as under existing conditions and trends.	*Installation and Surrounding Area*: There would be an increase of 596 people to the ROI by 2029. The population increase would be minor (less than 5% of the total projected population in the ROI) and would remain within the range of Sebastian County's projected population for the year 2029. Some beneficial effects may occur from additional employment and income associated with incoming personal and construction activities. An additional 271 housing units may be demanded by the end state of 2029 under this alternative. An estimated 204 children of school age would be associated with the incoming personnel and may result in larger class sizes and additional pressures for resources and expenditures but would also result in additional funding from additional enrollment.	*Installation and Surrounding Area*: Potential effects to socioeconomic resources under this alternative would be the same as those described under the No Action Alternative. Under this alternative, there may be temporary and minor beneficial effects associated with the employment and income generated during VLP construction.

Table S-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
Cultural Resources	*Installation and Surrounding Area*: As described in the 2023 FMS PTC EIS § 3.7.4, there would be no effects to archaeological or traditional cultural properties and no adverse effects to architectural resources. *Airspace and Ranges*: As described in the 2023 FMS PTC EIS § 3.7.4, there would be no effects to archaeological or traditional cultural properties and no adverse effects to architectural resources.	*Installation and Surrounding Area*: There would be no effects to archaeological resources or traditional cultural properties and no adverse effects to architectural resources (Section 3.5.2). Consultation with the Arkansas SHPO and federally recognized Tribes is ongoing. *Airspace and Ranges*: There would be no adverse effects to archaeological resources, architectural resources, or traditional cultural properties (Section 3.5.2). Consultation with the Arkansas and Oklahoma SHPOs and federally recognized Tribes is ongoing.	*Installation and Surrounding Area*: There would be no effects to archaeological resources or traditional cultural properties and no adverse effects to architectural resources (Section 3.5.2). Consultation with the Arkansas SHPO and federally recognized Tribes is ongoing. *Airspace and Ranges*: There would be no adverse effects to archaeological resources, architectural resources, or traditional cultural properties (Section 3.5.2). Consultation with the Arkansas and Oklahoma SHPOs and federally recognized Tribes is ongoing.
Biological Resources	*Installation and Surrounding Area*: Consequences to biological resources would be the same as those described in the 2023 FMS PTC EIS § 3.8.4.1. The USFWS concurred that the beddown of the FMS PTC at Ebbing ANG Base may affect but is not likely to adversely affect federally listed species. ESA Section 7 consultation with the USFWS regarding the Ebbing ANG Base/FSRA portion of the FMS PTC beddown was completed on March 30, 2022. *Airspace and Ranges*: Consequences to biological resources within the airspace would be the same as those described in the 2023 FMS PTC EIS § 3.8.4.2. There would be no minor to moderate effects to wildlife from airspace and range operations. The USFWS concurred that the beddown of the FMS PTC at Ebbing ANG Base may affect, but is not likely to adversely affect federally listed species. ESA	*Installation and Surrounding Area*: Consequences to biological resources include vegetation removal in currently maintained and landscaped areas for construction activities. Wildlife would experience increased noise effects from airfield operations compared to the No Action Alternative (Section 3.6.2.1.1). The USFWS concurred that the Proposed Action may affect but is not likely to adversely affect federally listed species. ESA Section 7 consultation with the USFWS regarding the Proposed Action was completed on May 30, 2025. *Airspace and Ranges*: Changes in noise levels in the airspace would range from a decrease of L_{dnmr} 6.3 dBA to an increase of L_{dnmr} 3.1 dBA (decrease of DNL 6 dBA to an increase of DNL 3 dBA), compared to the No Action Alternative. Some wildlife would be exposed to increased noise from airspace and range	*Installation and Surrounding Area*: Consequences to biological resources include vegetation removal in currently maintained and landscaped areas for constructing the VLP. Wildlife would experience increased noise effects from STOVL operations compared to the No Action Alternative (Section 3.6.2.2). *Airspace and Ranges*: Changes in noise levels in the airspace would range from a decrease of L_{dnmr} 6.4 dBA to an increase of L_{dnmr} 2 dBA (decrease of DNL 6 dBA to an increase of DNL 1.9 dBA), compared to the No Action Alternative. Noise effects to wildlife would be consistent with the No Action Alternative and would not be significant (Section 3.6.2.2).

Table S-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
	Section 7 consultation with the USFWS regarding the airspace component of the FMS PTC beddown was completed on December 20, 2022.	operations, but not to a significant level. An increase in munitions and countermeasure use would not result in significant biological resources effects (Section 3.6.2.1.2). The USFWS concurred that the Proposed Action may affect but is not likely to adversely affect federally listed species. ESA Section 7 consultation with the USFWS was completed on May 30, 2025.	
Physical Resources	*Installation and Surrounding Area*: Surface water, groundwater, and wetlands effects would be minimized through required design elements, and permit related BMPs addressed in the 2023 FMS PTC EIS § 3.9.4. There would be no effects to floodplains, topography, and soils (Section 3.7.2.3). *Airspace and Ranges*: There would be no interaction with the resource under the airspace if the No Action Alternative is implemented (Section 3.7.2.3).	*Installation and Surrounding Area*: There would be no effects to topographical features, groundwater, wetlands, or floodplains. Soil erosion and surface water effects would be minimized through required design elements and permit-related BMPs. Aquatic features were identified in the eastern arm/de-arm expansion area and the West VLP Site during 2025 surveys. However, none of these features fit the definition of a jurisdictional waters of the United States (WOTUS). The DAF would coordinate with the USACE Little Rock District, Regulatory Branch prior to construction activities to either pursue an Approved Jurisdictional Determination or a Preliminary Jurisdictional Determination. The DAF would apply for a Clean Water Act Section 404 permit, as appropriate, and coordinate any required mitigations with USACE (Section 3.7.2.1). *Airspace and Ranges*: Increased use of chaff and flares within the airspace have been shown to pose no adverse effects to physical resources. There would be no discernable concentration of chaff or flares deposited in water bodies beneath the airspace (Section 3.7.2.1).	*Installation and Surrounding Area*: There would be no effects to topographical features, groundwater, wetlands, or floodplains. Soil erosion and surface water effects would be minimized through required design elements and permit related BMPs. Aquatic features were identified in the West VLP Site during 2025 surveys. However, none of these features fit the definition of a jurisdictional WOTUS. The DAF would coordinate with the USACE Little Rock District, Regulatory Branch prior to construction activities to either pursue an Approved Jurisdictional Determination or a Preliminary Jurisdictional Determination. The DAF would apply for a Clean Water Act Section 404 permit, as appropriate, and coordinate any required mitigations with USACE (Section 3.7.2.2). *Airspace and Ranges*: There would be no interaction with the resource under the airspace if Alternative 1 is implemented (Section 3.7.2.2).

Table S-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
Air Quality	*Installation and Surrounding Area*: Air emissions would remain consistent with current operations, and no changes in emissions levels would occur. All criteria pollutant emissions would remain within regulatory thresholds. *Airspace and Ranges*: Existing operations in airspace and ranges would remain unchanged, with no changes to emissions levels.	*Installation and Surrounding Area*: Emissions from construction, operations, and increased personnel would remain within regulatory thresholds. Emissions would not adversely affect air quality. *Airspace and Ranges*: Emissions from expanded use of airspace would remain within regulatory thresholds.	*Installation and Surrounding Area*: Emissions from limited construction and existing operations would remain within regulatory thresholds. *Airspace and Ranges*: Emissions associated with airspace use would remain within regulatory thresholds.

Key: % = percent; § = Section; ANG = Air National Guard; BMP = best management practice; EIS = Environmental Impact Statement; dBA = A-weighted decibels; DNL = day-night average sound level; DoD = Department of Defense; ESA = Endangered Species Act; FAA = Federal Aviation Administration; FMS = Foreign Military Sales; L_{dnmr} = onset rate-adjusted monthly day-night average sound level; PTC = Pilot Training Center; ROD = Record of Decision; ROI = region of influence; SHPO = State Historic Preservation Officer; TBD = to be determined; USACE = United States Army Corps of Engineers; USFWS = United States Fish and Wildlife Service; VLP = Vertical Landing Pad

Draft

Supplemental Environmental Impact Statement Expansion of the Foreign Military Sales (FMS) F-35 Pilot Training Center (PTC) at Ebbing Air National Guard (ANG) Base, Arkansas

Volume 1

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ACRONYMS AND ABBREVIATIONS

%	percent
§/§§	Section(s)/Part(s)
188 WG	188th Wing
ACAM	Air Conformity Applicability Model
ADEQ	Arkansas Department of Environmental Quality
AEDT	Aviation Environmental Design Tool
AETC	Air Education and Training Command
AFFF	aqueous film-forming foam
AGL	above ground level
ALP	Airport Layout Plan
ANG	Air National Guard
APHIS	Animal and Plant Health Inspection Service
APE	Area of Potential Effects
ARANG	Arkansas Air National Guard
ATCAA	Air Traffic Control Assigned Airspace
BASH	Bird-Aircraft Strike Hazard
BCR	Bird Conservation Region
BMP	best management practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CY	calendar year
DAF	Department of the Air Force
dB	decibels
dBA	A-weighted decibels
DNL	day-night average sound level
DoD	Department of Defense
EIS	Environmental Impact Statement
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FMS	Foreign Military Sales
FSRA	Fort Smith Regional Airport
GHG	greenhouse gas
Hwy	Highway
I-	Interstate
IDP	Installation Development Plan
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
IR	Instrument Route
L_{dnmr}	onset rate-adjusted monthly day-night average sound level
$L_{eq(8)}$	8-hour equivalent noise level
L_{max}	maximum noise level
LUCs	land use controls
MOA	Military Operations Area

MRNMAP	Military Operating Area and Range Noise Model
MSL	mean sea level
MTR	Military Training Route
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAVAIDS	navigational aids
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NLR	Noise Level Reduction
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PAA	Primary Aerospace Vehicle Authorization
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PSD	Prevention of Significant Deterioration
PTC	Pilot Training Center
R-	Restricted Area
ROD	Record of Decision
ROI	region of influence
RSAF	Republic of Singapore Air Force
RWY	Runway
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
STOVL	Short Takeoff and Vertical Landing
SUA	Special Use Airspace
SWPPP	Stormwater Pollution Prevention Plan
tpy	tons per year
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United State Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VLP	Vertical Landing Pad
VOC	volatile organic compound
VR	Visual Route
WHMP	Wildlife Hazard Management Plan
WOTUS	waters of the United States

1. PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

The Department of the Air Force (DAF) has prepared this Supplemental Environmental Impact Statement (SEIS) to address proposed changes since the completion of the *Beddown of a Foreign Military Sales (FMS) Pilot Training Center (PTC) at Ebbing Air National Guard Base, Arkansas or Selfridge Air National Guard Base, Michigan Final Environmental Impact Statement* (EIS) (hereinafter referred to as the "2023 FMS PTC EIS") (DAF, 2023a), which is incorporated herein by reference. The DAF signed the Record of Decision (ROD) on March 11, 2023, selecting Ebbing Air National Guard (ANG) Base[5] as the location to establish the FMS F-35 PTC, which included up to 24 F-35s, relocation of 12 Republic of Singapore Air Force (RSAF) F-16s, and supporting infrastructure, among other issues (DAF, 2023b). The ROD is incorporated herein by reference.

In the 2023 FMS PTC EIS, the DAF analyzed two locations in the Continental United States for consolidated FMS F-35 training: Ebbing ANG Base, Arkansas, and Selfridge ANG Base, Michigan. The 2023 FMS PTC EIS considered new infrastructure construction, renovation of existing infrastructure, and personnel increases to support 24 FMS F-35 Primary Aerospace Vehicle Authorization (PAA) and 12 RSAF F-16 aircraft (2023 FMS PTC EIS, § 2.2). The first FMS F-35 aircraft arrival and training began in late 2024.

Since the signing of the 2023 FMS PTC EIS ROD, new training requirements have emerged due to additional FMS purchases of F-35 aircraft, including operations that incorporate the F-35B's Short Takeoff and Vertical Landing (STOVL) capabilities. Consequently, the Proposed Action in this SEIS (Chapter 2, *Description of Proposed Action and Alternatives*), includes increasing aircraft capacity at Ebbing ANG Base from 24 to 36 F-35 PAA, revising training requirements, expanding the footprint of the PTC through constructing new infrastructure, renovating existing infrastructure, and increasing personnel.

The DAF is the lead agency for the SEIS while the Federal Aviation Administration (FAA) and United States (U.S.) Forest Service (USFS) are serving as Cooperating Agencies. Section 1.4.1, *Cooperating Agencies*, describes FAA's and USFS's jurisdictions and roles in the proposal. The DAF coordinated with FAA and USFS to develop this document to meet each agency's distinct obligations under the National Environmental Policy Act (NEPA) to support the decision-making of all agencies. The DAF prepared this Draft SEIS in accordance with the NEPA of 1969, as amended (NEPA; 42 U.S. Code [USC] § 4321 et seq.), FAA Order 1050.1F*, Environmental Impacts: Policies and Procedures*, and Forest Service Handbook 1909.15, *National Environmental Policy Handbook*.

[5] Ebbing ANG Base hosts the 188th Wing (188 WG) of the Arkansas ANG (ARANG) and is a tenant at Fort Smith Regional Airport (FSRA) in Fort Smith, Arkansas. Ebbing ANG Base consists of 140 acres of land leased from the airport. The 188 WG uses the civil airfield for military operations.

1.2 PURPOSE OF ACTION

As stated in the 2023 FMS PTC EIS (§ 1.3), the DAF's overall purpose of the action is to establish a permanent FMS F-35 PTC at a single location within the Continental United States for FMS F-35 pilot training.

1.3 NEED FOR ACTION

As stated in the 2023 FMS PTC EIS (§ 1.3), the DAF's overall need for the action is to provide a centralized location for FMS training and pilot production. Among the nations that have agreements with the DAF to purchase F-35s, the RSAF plans to base a number of their aircraft in the United States for an indefinite period. Additionally, 12 RSAF F-16s from Luke Air Force Base, Arizona, needed to be relocated to the FMS PTC location so the RSAF could consolidate pilot training at one location, which was authorized in the 2023 FMS PTC EIS ROD.

After the 2023 FMS PTC EIS ROD was signed, additional FMS nation customer participation in the F-35 enterprise resulted in newly established Letters of Offer and Acceptance with the DAF, effectively creating additional F-35 FMS training customers. The additional FMS nation customers and associated training requirements exceed the current 24 F-35 PAA limit. Therefore, the DAF needs additional F-35 capacity to expand beyond 24 F-35 PAA at Ebbing ANG Base, as authorized in the 2023 FMS PTC EIS ROD, to meet the new requirements.

This SEIS addresses the need for new requirements and refined operational procedures identified since completion of the 2023 FMS PTC EIS. These include increasing the capacity and footprint of the PTC at Ebbing ANG Base/Fort Smith Regional Airport (FSRA), basing 12 additional F-35 PAA, incorporating F-35B STOVL requirements and Vertical Landing Pads (VLPs), implementing new construction and renovation projects, and increasing the number of support personnel.

1.4 INTERAGENCY/INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS

1.4.1 Cooperating Agencies

1.4.1.1 Federal Aviation Administration

FAA is serving as a Cooperating Agency for this SEIS pursuant to 42 USC § 4336a(a)(3) and 42 USC § 4366e(2) (see Appendix B, *Public and Agency Involvement,* Section B.2.1.1 for a copy of FAA's Cooperating Agency letter). FAA has jurisdiction by law and special expertise relating to the DAF's proposal at FSRA[6]. FAA's authorities and special expertise is based on its statutory responsibilities under the Airport and Airway Improvement Act of 1982 (49 USC § 47101), Section 743 of the FAA Reauthorization Act of 2024 (Public Law 118-254), and relevant implementing regulations. FAA is also responsible for providing leadership in planning and developing a safe and efficient national airport system and satisfying the needs of aviation interests of the United States, with

[6] The official location identifying code (ID) for FSRA is "FSM." However, to avoid confusion between the acronyms for the DAF's Proposed Action, "FMS PTC," and the location ID for FSRA, "FSRA" is used throughout this SEIS when referring to the civil airport and for consistency with the 2023 FMS PTC EIS.

due consideration for economics, the environment, local property rights, and safeguarding the public investment. This includes oversight and administration of airport planning and development, airport noise compatibility planning, safety of airport operations, protection of airspace on and immediately adjacent to an airport, and environmental reviews of airport improvement projects. The FAA's Office of Airports is the lead within FAA for the development of this Draft SEIS and coordinated internally to address all resources of concern under FAA's jurisdiction to ensure the environmental review under NEPA and other regulatory processes (e.g., Section 4[f] of the Department of Transportation Act of 1966) are efficient and completed in a timely manner. If FAA receives a request from the City of Fort Smith for approval of certain changes to the Airport Layout Plan (ALP) for FSRA, FAA would be responsible for an environmental review under NEPA and may rely on the information and analyses in the Final SEIS for its decision-making purposes. FAA's role as a Cooperating Agency in this environmental review neither expands nor diminishes its final decision-making authority.

Since the DAF's Proposed Action involves construction of infrastructure necessary to support the military aircraft basing and training activities at FSRA, the City of Fort Smith (Airport Owner/Operator) will need to submit an updated ALP[7] to FAA for certain changes to their ALP. Thus, FAA's federal action[8] is whether to approve changes to the City of Fort Smith's ALP depicting the DAF's proposed infrastructure projects subject to FAA review pursuant to 49 USC § 47107(a)(16) et seq., and Section 743 of the FAA Reauthorization Act of 2024. The purpose of FAA's action is to evaluate the City of Fort Smith's ALP update request for proposals that materially impact the safe and efficient operation of aircraft at, to, or from the civil airport, would adversely affect the safety of people or property adjacent to the airport, and adversely affect the value of prior federal investments to a significant extent. FAA responsibilities under 49 USC § 47101 et seq. and the FAA Reauthorization Act of 2024 establish the framework of the purpose and need for FAA's action.

1.4.1.2 United States Forest Service

USFS is also serving as a Cooperating Agency for this SEIS (see Appendix B, *Public and Agency Involvement*, Section B.2.1.2 for a copy of USFS's Cooperating Agency letter). USFS manages several areas under the airspace including national forests, Wilderness Areas, and Wild and Scenic Rivers. As such, they have specialized expertise in these resources and have contributed to the environmental effects analysis presented in this SEIS.

1.4.2 Interagency/Intergovernmental Coordination and Consultations

The DAF has consulted with federal, state, and local agencies with jurisdiction in areas that could be affected by the Proposed Action. The DAF re-initiated consultation with the U.S. Fish and

[7] An ALP is a scaled, graphical presentation of the existing and future airport facilities and other pertinent information. The ALP serves as a record of present and future aeronautical requirements and is a blueprint for airport development by which the airport authority and FAA ensure all proposed development is consistent with local, state, and federal standards and requirements as well as airport and community land use plans. An up-to-date FAA-approved ALP is required for the airport authority to receive financial assistance from FAA.

[8] Connected actions are those federal actions that are "closely related" and "should be discussed" in the same NEPA document. Proposed actions are connected if they (1) automatically trigger other actions that may require an EIS, (2) cannot or will not proceed unless other actions are taken previously or simultaneously (3) the actions are interdependent parts of a larger action and depend upon the larger action for their justification.

Wildlife Service (USFWS) Arkansas Ecological Services Field Office in accordance with Section 7 of the Endangered Species Act (ESA). Section 3.6, *Biological Resources*, of the SEIS provides details on the DAF's consultation with the USFWS. For intergovernmental consultations related to cultural resources, the DAF has contacted the Arkansas and Oklahoma State Historic Preservation Officers (SHPOs) regarding this Proposed Action. Results of consultations are discussed in Section 3.5, *Cultural Resources*.

1.4.3 Government-to-Government Consultations

Pursuant with the National Historic Preservation Act of 1966 implementing regulations (36 Code of Federal Regulations [CFR] § 800); Department of Defense (DoD) Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*; DAF Instruction 90-2002, *Interactions with Federally Recognized Tribes*; and DAF Manual 32-7003, *Environmental Conservation*, the DAF has consulted with federally recognized Tribes that may be affected by the Proposed Action. Appendix B, *Public and Agency Involvement,* Section B.2.2.4, provides the list of Tribes the DAF contacted. Refer to Section 3.5, *Cultural Resources*, for the results of government-to-government consultations.

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The DAF proposes to expand the permanent FMS PTC mission at Ebbing ANG Base over what was analyzed and authorized in the 2023 FMS PTC EIS and ROD, which included 24 F-35 and 12 F-16 aircraft, and associated operations, personnel, and facilities. This Proposed Action would beddown an additional 12 F-35s for a total of 36 F-35 PAA and 12 F-16 aircraft at Ebbing ANG Base. There would also be an increase in F-35 operations (Section 2.1.1, *Aircraft Operations*), personnel (Section 2.1.2, *Personnel/Manpower*), and new facilities (Section 2.1.3, *Facility Requirements*). The actual number of F-35s present at Ebbing ANG Base at any one time may vary based on customer countries' needs. However, the steady state number of F-35s would not exceed 36 PAA, and FMS PTC operations would not exceed those analyzed in this SEIS. The analysis is based on the maximum number of FMS PTC operations that would be authorized. Additionally, while the 2023 FMS PTC EIS did not include F-35B STOVL operations, they are included as part of this Proposed Action.

This section describes the elements of the Proposed Action and makes comparisons to what was analyzed in the 2023 FMS PTC EIS and authorized in the ROD.

2.1.1 Aircraft Operations

F-35 operations under the Proposed Action would occur within existing designated Special Use Airspace (SUA). **Table 2.1-1** provides a summary of F-35 training activities associated with the FMS PTC.

Table 2.1-1. Proposed Action FMS PTC F-35 Training Activities

Major Mission	Training Activities [(a)]	Airspace Type
Basic Fighter Maneuvers	G-force awareness, maneuverability, break turns, high-angle-of-attack maneuvering, acceleration maneuvering, gun tracking, offensive and defensive positioning, air refueling, and stall recovery.	MOAs and ATCAAs
Surface Attack Tactics	Single to multiple aircraft attacking a wide range of simulated ground targets using different ingress and egress methods, delivery tactics, ordnance types, angles of attack, and combat scenarios.	MOAs, ATCAAs, and Restricted Areas (over weapons delivery ranges)
Air Combat Maneuvers	Multi-aircraft formations and tactics, systems check, G-force awareness, two-versus-four and four-versus-six aircraft intercepts, combat air patrol, defense of airspace sector from composite force attack, intercept and destroy bomber aircraft, and avoid adversary fighters.	MOAs and ATCAAs
Close Air Support	Air support for ground-based offensive and defensive operations, work with Joint Terminal Attack Controllers, and use Surface Attack Tactics and Basic Surface Attack components.	MOAs, ATCAAs, and Restricted Areas (over weapons delivery ranges)

Table 2.1-1. Proposed Action FMS PTC F-35 Training Activities

Major Mission	Training Activities [a]	Airspace Type
Air Combat Tactics	Multi-aircraft and multi-adversary defense and combat air patrol, defense of airspace sector from composite force attack, intercept and destroy bomber aircraft, avoid adversary fighters, strike-force rendezvous and protection, and supersonic engagement.	MOAs and ATCAAs
VLP Maneuvers [b]	F-35Bs have vertical landing capabilities. Periodic vertical landing maneuvers and practice are required for aircrew proficiency, and in the event of an actual F-35B emergency requiring a vertical landing.	Ebbing ANG Base VLP (FSRA airfield)

Source: (DAF, 2023a)
Key: ANG = Air National Guard; ATCAA = Air Traffic Control Assigned Airspace; EIS = Environmental Impact Statement; FMS = Foreign Military Sales; FSRA = Fort Smith Regional Airport; MOA = Military Operations Area; PTC = Pilot Training Center; SEIS = Supplemental Environmental Impact Statement; VLP = Vertical Landing Pad
Notes:
a. All F-35 training activities are for the F-35A and F-35B, except where otherwise noted in this table.
b. VLP maneuvers were not considered in the 2023 FMS PTC EIS and is a new major mission category being assessed in this SEIS.

As described **Table 2.1-1**, the Proposed Action would require VLP maneuvers based on F-35B vertical landing capabilities. This component of F-35 training is a new major mission category that was not included in the 2023 FMS PTC EIS because the F-35Bs were modeled to operate in conventional mode to fly like F-35As. Details regarding flight procedures can be found in Appendix C, *Noise*.

2.1.1.1 Airfield Operations

The 188th Wing (188 WG) of the Arkansas ANG (ARANG) is the host command based at Ebbing ANG Base and is a tenant of FSRA. The 33rd Fighter Wing operationally commands F-35 and F-16 aircraft being based at Ebbing ANG Base as the 85th Fighter Group tenant unit. FMS PTC training operations would predominantly occur at Ebbing ANG Base, utilizing FSRA's civil airfield for FMS PTC aircraft. As depicted in **Figure 2.1-1**, FSRA has two runways, Runway (RWY) 08/26 (9,318 by 150 feet) and RWY 02/20 (5,001 by 150 feet). A project extending RWY 08/26 by 1,300 feet was completed in calendar year (CY) 2023. The RSAF F-16 and FMS PTC F-35 training missions occur at Ebbing ANG Base/FSRA, along with 188 WG's operational support to MQ-9 sorties[9] and transient military aircraft, such as the C-130 from the 314th Airlift Wing. Daily use of the FSRA runway requires coordination with the FAA Air Traffic Organization/Air Traffic Control Tower and FSRA commercial operations so that the two do not conflict with each other.

The FSRA airfield would be utilized for FMS PTC F-35 training operations under the Proposed Action and would include VLP maneuvers. **Table 2.1-2** lists the civilian, transient, and military aircraft operations proposed at FSRA under the Proposed Action, as well as a comparison to the 2023 FMS PTC EIS.

[9] "Sorties" can be different for various squad types. For the SEIS noise analysis, a sortie is one aircraft taking off from the airfield, training in the local airspace, and returning to the airfield. Thus, a sortie will generate at least two operations and one or more airspace events.

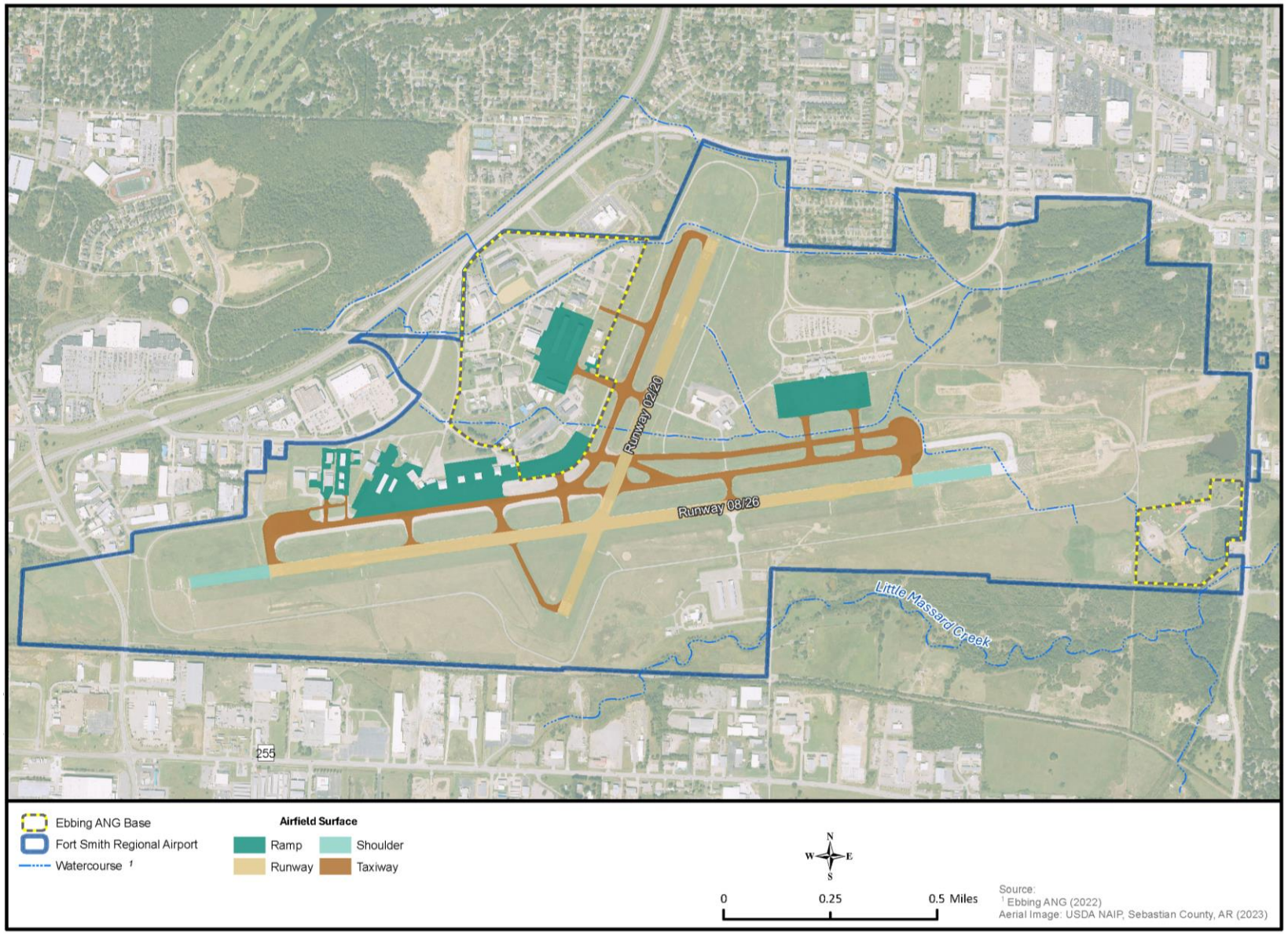


Figure 2.1-1. Ebbing ANG Base/FSRA Airfield Surface Map

Table 2.1-2. Annual Aircraft Flight Operations [a] at FSRA Under the Proposed Action

Aircraft Operation Type	2023 FMS PTC EIS	Proposed Action [b]	Total
F-35A	11,664	-234	11,430
F-35B	2,340	5,340	7,680
Agile Combat Employment [c]	0	0	576
Civilian Aircraft	28,321	0	28,321
Transient Military Aircraft [d]	9,006	0	9,006
Blue Air Aircraft	948	0	948
RSAF F-16	11,700	0	11,700
Total	**63,979**	**5,106**	**69,661**

Source: (DAF, 2023a)
Key: EIS = Environmental Impact Statement; FMS = Foreign Military Sales; FSRA = Fort Smith Regional Airport; PAA = Primary Aerospace Vehicle Authorization; PTC = Pilot Training Center; RSAF = Republic of Singapore Air Force
Notes:
a. "Flight Operations" are specific to airfield flights, and it refers to each time an aircraft crosses a runway threshold.
b. Proposed Action FMS PTC operations numbers consider the 12 additional F-35 PAA and incorporate a refinement of operations assessed in the 2023 FMS PTC EIS that were based on an immature syllabus. Additionally, the 2023 FMS PTC EIS assessed F-35B flight operations as conventional operations, similar to F-35A operations.
c. Agile Combat Employment is a new large force exercise since completion of the 2023 FMS PTC EIS. It is included in this table under total flight operations at FSRA but is not part of the Proposed Action. However, the number of Agile Combat Employment flight operations is included in the noise modeling and analyses.
d. Transient military aircraft include C-130 from the 314th Airlift Wing and other military users of FSRA.

2.1.1.2 Airspace and Ranges

Figure 2.1-2 depicts the airspace units and ranges that would be utilized by the 12 additional F-35 aircraft proposed for Ebbing ANG Base. These are the same airspace and ranges originally included and described in the 2023 FMS PTC EIS (§ 2.2.1). Aircraft operating out of Ebbing ANG Base/FSRA primarily utilize the Hog Military Operations Area (MOA)[10]; the Shirley MOA; a corridor between the Hog and Shirley MOAs called the "Pig Path"; Military Training Routes (MTRs)[11] consisting of Visual Routes[12] (VRs), including VR-189, VR-1102, VR-1103, VR-1104, VR-1113, VR-1130, and VR-1182; and Instrument Routes[13] (IRs) consisting of IR-117, IR-120, IR-121, and IR-164. Primary training activities are listed and described in **Table 2.1-3**. While predominant FMS PTC training operations would occur in the primary use airspace, FMS PTC aircraft training may occasionally occur in other SUA, Air Traffic Control Assigned Airspace (ATCAA), and MTRs as discussed in the 2023 FMS PTC EIS (§ 2.2.1). Operations on the "Pig Path" would be relatively infrequent and would consist primarily of FMS PTC aircraft transiting between the Hog and Shirley MOA airspace complexes.

[10] A MOA is airspace designated outside of Class A airspace, to separate or segregate certain nonhazardous military activities from Instrument Flight Rules traffic and to identify for Visual Flight Rules traffic where these activities are conducted.
[11] Generally, MTRs are established below 10,000 feet mean sea level for operations at speeds in excess of 250 knots.
[12] Visual Flight Rules means that the aircraft may operate without the use of instrumentation during nice and clear weather. Clouds, heavy precipitation, low visibility, and otherwise adverse weather conditions should be avoided under Visual Flight Rules.
[13] Instrument Flight Rules implies that the flight may operate in cloudy or otherwise adverse weather conditions using instruments only.

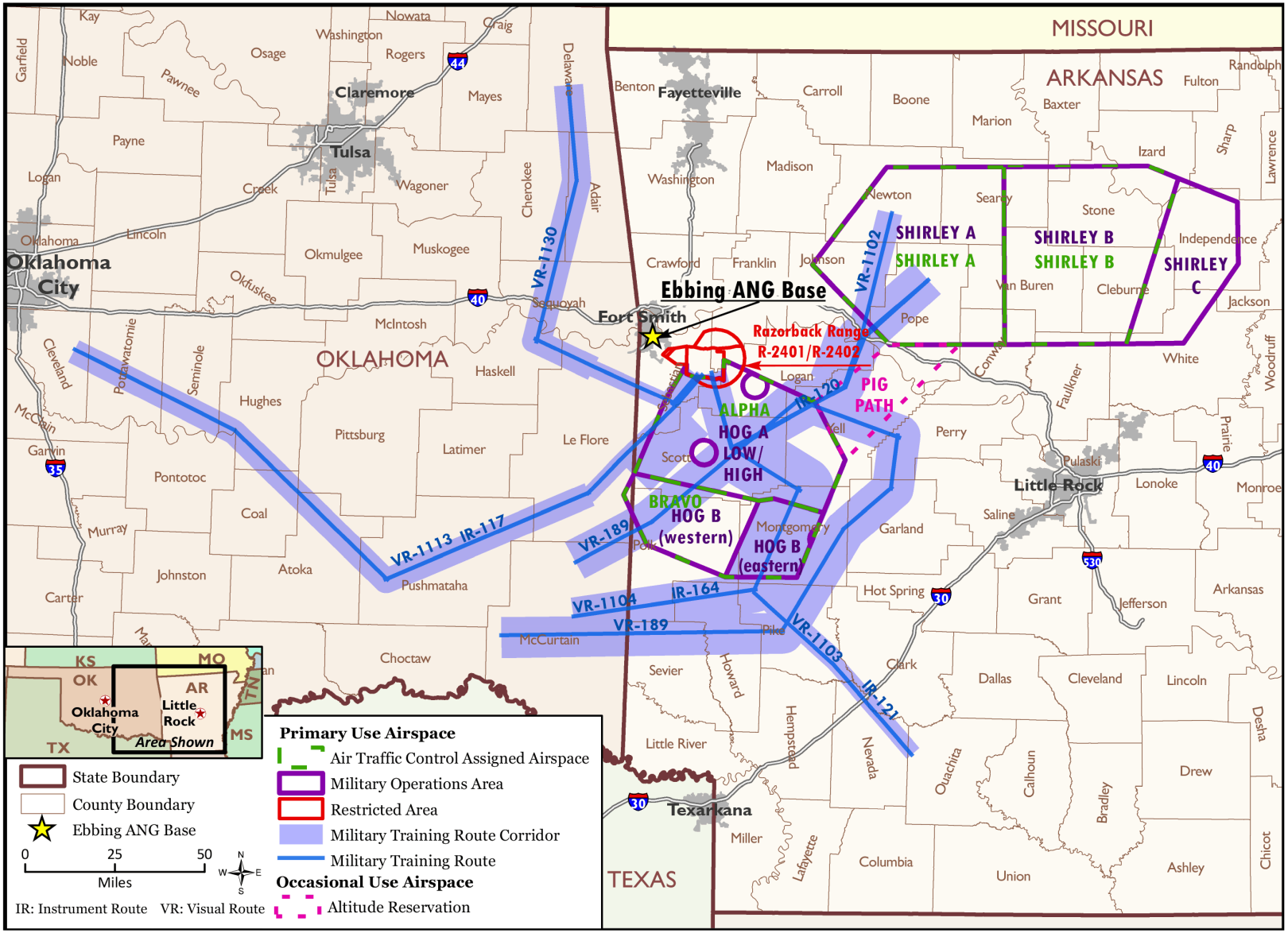


Figure 2.1-2. Ebbing ANG Base Operational Airspace and Ranges

Table 2.1-3. Airspace Altitudes and Supersonic Authorizations Under the Proposed Action

Airspace Unit	Floor (feet MSL [a])	Ceiling (feet MSL)	Supersonic Conducted (Yes/No)
Hog A MOA	100 feet AGL	To BNI 18,000	N
Hog A ATCAA	18,000	29,000	Yes, above FL 300
Hog B MOA	100 feet AGL excluding below 6,000 west of line running roughly north-south through center of MOA [b]	To BNI 18,000	No
Hog B ATCAA	18,000	29,000	Yes, above FL 300
R-2401 A/B (Razorback Range)	Surface	30,000	No
R-2402 A/B/C (Razorback Range)	Surface	30,000	No
Shirley A MOA	11,000	To BNI 18,000	No
Shirley B MOA	11,000	To BNI 18,000	No
Shirley C MOA	11,000	To BNI 18,000	No
Shirley ATCAA	18,000	29,000	Yes, above FL 300

Source: (DAF, 2023a)
Key: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; BNI = but not including (all MOAs extend to 18,000 feet MSL unless otherwise noted); FL = Flight Level; MOA = Military Operations Area; MSL = mean sea level; R- = Restricted Area; SUA = Special Use Airspace
Notes:
a. MSL is the elevation (on the ground) or altitude (in the air) of an object, relative to the average sea level. The elevation of a mountain, for example, is marked by its highest point and is typically illustrated as a small circle on a topographic map with the MSL height shown in either feet or meters or both. Because aircraft fly across vast landscapes, where points above the ground can and do vary, MSL is used to denote the "plane" on which the floors and ceilings of SUA are established and the altitude at which aircraft must operate within that SUA.
b. Hog B MOA excludes areas west of a line running roughly north to south from 34 degrees 40 minutes 58 seconds north of the equator and 95 degrees 50 minutes 18 seconds west of the prime meridian to 34 degrees 22 minutes 30 seconds north of the equator and 94 degrees 0 minutes 1 second west of the prime meridian at altitudes up to 6,000 feet MSL.

The 188 WG's primary range is Razorback Range, encompassed by Restricted Area (R-)2401 and R-2402; it is 15 nautical miles to the center point of the range from Fort Smith. R-2401A and R-2402A/B/C are scheduled by the 188 WG through Fort Chaffee (U.S. Army). The Arkansas Army National Guard manages R-2401A/B and R-2402A and the ARANG owns R-2402B/C. The Arkansas Army National Guard (Fort Chaffee Range Control) schedules the restricted airspace surrounding Razorback Range via an agreement. **Table 2.1-3** presents the airspace altitudes and supersonic authorizations for airspace units associated with the Proposed Action.

Airspace events under the Proposed Action are shown in **Table 2.1-4**. Overall, the Proposed Action would increase airspace events by 13 percent (%) as compared to the 2023 FMS PTC EIS.

In addition to MOAs, ATCAAs, and Restricted Areas, low-level MTRs would be used in FMS F-35 training events. **Table 2.1-5** lists the MTRs and their associated minimum and maximum altitudes and widths.

Annual proposed MTR events are shown in **Table 2.1-6**. Overall, the Proposed Action would increase annual MTR events by 2% as compared to the 2023 FMS PTC EIS.

Military nighttime operations occurring between 10:00 p.m. and 7:00 a.m. would decrease by approximately 26% at the airfield and 23% within the airspace under the Proposed Action as compared to the 2023 FMS PTC EIS (**Table 2.1-7**).

Table 2.1-4. Annual Airspace Events [a] Under the Proposed Action

Airspace Unit	2023 FMS PTC EIS	Proposed Action [b]	Total	% Increase
Hog A/B MOAs/ATCAAs and Razorback Range [c]	6,976	689	7,665	10%
Shirley A/B/C MOAs/ATCAAs	4,925	839	5,764	17%
Total	**11,901**	**1,528**	**13,429**	**13%**

Source: (DAF, 2023a)
Key: % = percent; ATCAA = Air Traffic Control Assigned Airspace; EIS = Environmental Impact Statement; FMS = Foreign Military Sales; MOA = Military Operations Area; PTC = Pilot Training Center; R- = Restricted Area
Notes:
a. An "event" is one aircraft flying in one airspace or a block of airspace units.
b. The Proposed Action considers that F-35A and F-35B aircraft operate similarly in the airspace and event numbers in this table are inclusive of both.
c. Razorback Range consists of R-2401 A/B and R-2402 A/B/C.

Table 2.1-5. Military Training Route Use Under the Proposed Action

MTR	Min/Max Altitudes	Min/Max Width
VR189	500 feet AGL/5,000 feet MSL	5 NM each side of centerline
VR1102	100 feet AGL/1,500 feet MSL	3 to 8 NM each side of centerline
VR1103	100 feet AGL/1,500 feet MSL	2 to 8 NM each side of centerline
VR1104	100 feet AGL/1,500 feet MSL	3 to 8 NM each side of centerline
VR1113	Surface to 1,000 feet AGL/1,500 MSL	2 to 10 NM each side of centerline
VR1130	500 to 1,000 feet AGL/1,500 feet MSL	2 to 5 NM each side of centerline
IR117	Surface to 500 feet AGL/4,000 feet MSL	2 to 10 NM each side of centerline
IR120	100 to 1,000 feet AGL/5,000 feet MSL	3 to 8 NM each side of centerline
IR121	100 feet AGL/4,000 feet MSL	2 to 8 NM each side of centerline
IR164	100 feet AGL/4,000 feet MSL	3 to 8 NM either side of centerline

Source: (DAF, 2023a)
Key: AGL = above ground level; IR = Instrument Route; Max = maximum; Min = minimum; MSL = mean sea level; MTR = Military Training Route; NM = nautical miles; VR = Visual Route

Table 2.1-6. Annual Events [a] Within Military Training Routes Under the Proposed Action

MTR	2023 FMS PTC EIS [b]	Proposed Action [c]	Total	% Increase
VR189	124	4	128	3%
VR1102	16	1	17	6%
VR1103	72	1	73	1%
VR1104	33	1	34	3%
VR1113	77	3	80	4%
VR1130	36	2	38	6%
IR117	100	2	102	2%
IR120	12	1	13	8%
IR121	620	1	621	0.2%
IR164	28	4	32	14%
Total	**1,118**	**20**	**1,138**	**2%**

Source: (DAF, 2023a)
Key: % = percent; EIS = Environmental Impact Statement; FMS = Foreign Military Sales; IR = Instrument Route; MTR = Military Training Route; PTC = Pilot Training Center; VR = Visual Route
Notes:
a. An "event" is one aircraft flying in one MTR.
b. Annual events include F-35, F-16, and other operations associated with the 2023 FMS PTC EIS.
c. Annual events include only F-35 operations associated with this Proposed Action.

Table 2.1-7. Annual Nighttime [a] Operations [b] and Events [c] Under the Proposed Action

Operations	2023 FMS PTC EIS		Proposed Action		Total	
	Airfield Operations	Airspace Events [d]	Airfield Operations	Airspace Events	Airfield Operations	Airspace Events
Civilian Operations	1,643	0	0	0	1,643	0
Military Operations	1,018	312	-262	-72	756	240
Total	**2,661**	**312**	**-262**	**-72**	**2,399**	**240**

Source: (DAF, 2023a)
Key: - = minus; EIS = Environmental Impact Statement; FMS = Foreign Military Sales; PTC = Pilot Training Center
Notes:
a. Night operations are those considered after 10:00 p.m. and prior to 7:00 a.m.
b. "Operations" are specific to airfield flights, and it refers to each time an aircraft crosses a runway threshold.
c. "Events" are used to describe airspace flights. An "event" is one aircraft flying in one airspace unit.
d. Airspace events include all military aircraft operations, including F-16, F-35, and other transient aircraft. Of this total, 133 events are associated with F-16s and F-35s.

2.1.1.3 Munitions and Countermeasure Use

Munitions and countermeasure use under the Proposed Action would be conducted in the same ranges and airspace as authorized and described in the 2023 FMS PTC EIS (§ 2.2.1). Razorback Range (R-2401/R-2402) contains varied target sets for supporting laser and air-to-ground weapons training. Live weapons are not permitted in the Razorback Range. However, live-fire training would be conducted during formal training exercises at Fort Johnson (formerly Fort Polk), Louisiana.

Chaff and flares are currently authorized in the airspace, with certain restrictions. The Hog A MOA allows for flares above 2,000 feet above ground level (AGL) and the Hog B MOA allows for flares above 6,000 feet mean sea level (MSL). In the Shirley MOA, use of flares is allowed above 11,000 feet MSL. RR-188 chaff is authorized in the Hog and Shirley MOAs/ATCAAs, R-2401A, and R-2402A/B/C. Restricted airspace above/surrounding Razorback Range (R-2401A/B and R-2402A/B/C) allows for flares above 1,000 feet AGL when "Fire Danger Low" conditions are in place. When "Fire Danger Mod" conditions exist, use must be above 2,000 feet AGL. An 8-year average of countermeasure usage in the Hog and Shirley MOAs/ATCAAs is approximately 12,716 flares and 9,185 chaff cartridges. Countermeasure use in the restricted airspace above Razorback Range (R-2401A and R-2402A) averages 7,004 flares and 3,058 chaff cartridges. While these amounts are primarily associated with fighter aircraft, other aircraft may dispense countermeasures during operations and exercises, including illumination flares.

The Proposed Action would include munitions and countermeasure use as shown in **Table 2.1-8**.

Table 2.1-8. Annual Munitions and Countermeasure Use Under the Proposed Action

Munition/Countermeasure	Permitted Range	2023 FMS PTC EIS [a]	Proposed Action	Total
GBU-12 (FSWD) (inert)	Fort Johnson, LA[b]	48	-48	0
GBU-12 (FSWD) (live)	Fort Johnson, LA[b]	32	16	48
GBU-12 (FSWD) (inert)	R-2401/R-2402	0	196	196
GBU-31 (FSWD) (inert)	R-2401/R-2402	116	50	166

Table 2.1-8. Annual Munitions and Countermeasure Use Under the Proposed Action

Munition/Countermeasure	Permitted Range	2023 FMS PTC EIS [a]	Proposed Action	Total
GBU-31 (FSWD) (live)	Fort Johnson, LA[b]	0	40	40
BDU-33	R-2401/R-2402	500	400	900
BDU-33	Fort Johnson, LA[b]	0	100	100
BDU-50	R-2401/R-2402	16	-4	12
BDU-50	Fort Johnson, LA[b]	0	4	4
BDU-56	R-2401/R-2402	16	-4	12
BDU-56	Fort Johnson, LA[b]	0	4	4
GBU-10 (inert)	R-2401/R-2402	0	34	34
GBU-10 (live)	Fort Johnson, LA[b]	0	16	16
GBU-38 (FSWD) (inert)	R-2401/R-2402	0	82	82
GBU-38 (FSWD) (live)	Fort Johnson, LA[b]	0	48	48
GBU-49 (FSWD) (inert)	R-2401/R-2402	0	144	144
GBU-49 (FSWD) (live)	Fort Johnson, LA[b]	0	48	48
GBU-54 (FSWD) (inert)	R-2401/R-2402	0	72	72
GBU-54 (FSWD) (live)	Fort Johnson, LA[b]	0	48	48
GBU-56 (inert)	R-2401/R-2402	0	8	8
GBU-56 (live)	Fort Johnson, LA[b]	0	4	4
20-millimeter	R-2401/R-2402	15,000	8,000	23,000
20-millimeter	Fort Johnson, LA[b]	0	2,000	2,000
25-millimeter TP (PGU-23)	R-2401/R-2402	28,000	115,500	143,500
MJU-61/B Training Flares	Authorized Airspace	15,000	4,000	19,000
Chaff	Authorized Airspace	0	8,000	8,000

Source: (DAF, 2023a)
Key: - = minus; BDU = Bomb Dummy Unit; EIS = Environmental Impact Statement; FMS = Foreign Military Sales; FSWD = Full-Scale Weapons Delivery; GBU = Guided Bomb Unit; LA = Louisiana; MJU = Mobile Jettison Unit; PGU = Precision Guided Unit; PTC = Pilot Training Center; R- = Restricted Area; TP = Target Practice
Note:
a. Munitions and countermeasure use in this column include totals of all proposed expenditures listed in the 2023 FMS PTC EIS, Table 2.2.5.
b. Fort Johnson was formerly Fort Polk.

2.1.2 Personnel/Manpower

The Proposed Action would add 271 personnel and 325 dependents, for a total of an additional 596 persons at Ebbing ANG Base, as shown in **Table 2.1-9**. There would be a 31% increase in total persons over the 2023 FMS PTC EIS ROD.

Table 2.1-9. Number of Personnel and Dependents at Ebbing ANG Base Under the Proposed Action

Mission Personnel Type	2023 FMS PTC EIS ROD			Proposed Action [(a)]			% Increase	
	Personnel	Dependents	Total	Personnel	Dependents [(b)]	Total	Personnel	Dependents
F-16/F-35 Security Forces	24	72	96	12 [a]	14 [a]	26	50% [a]	20% [(a)]
F-35 DAF	30	56	86	30	36	66	100%	64%
F-35 Contractor MX	260	600	860	225	270	495	87%	45%
F-16/F-35 Medical	8	24	32	4 [a]	5 [a]	9	50% [a]	20% [(a)]
F-16 DAF, DAF Civilian, and RSAF Pilots/MX	303	556	859	0	0	0	0%	0%
Total	**625**	**1,308**	**1,933**	**271**	**325**	**596**	**43%**	**25%**

Sources: (DoD, 2022; DAF, 2023b)
Key: % = percent; ANG = Air National Guard; DAF = Department of the Air Force; EIS = Environmental Impact Statement; FMS = Foreign Military Sales; FSRA = Fort Smith Regional Airport; MX = maintenance; PTC = Pilot Training Center; ROD = Record of Decision; RSAF = Republic of Singapore Air Force
Notes:
a. Personnel and dependent numbers for the Proposed Action are only associated with the F-35.
b. Number of dependents for the Proposed Action were calculated using the 1.2 dependent per personnel ratio based on the 2022 *Demographics Profile of the Military Community* published by the Department of Defense.

2.1.3 Facility Requirements

Construction and renovation projects would occur at Ebbing ANG Base/FSRA to support the 12 new F-35 PAA and STOVL operations. These projects are listed in **Table 2.1-10** and shown in **Figure 2.1-3**. These projects are in addition to the construction and renovation projects described and listed in the 2023 FMS PTC EIS (§ 2.2.3), which would continue to occur.

All FMS PTC facilities under the Proposed Action would primarily be developed near the main ramp. However, the VLP, arm/de-arm expansions, and a portion of the main ramp expansion are proposed for other parts of the FSRA airfield, outside Ebbing ANG Base boundaries. During construction, temporary staging areas would be located on current Ebbing ANG Base paved areas or previously disturbed areas. These areas are depicted in **Figure 2.1-3**.

Figure 2.1-4 shows the entire facilities footprint for all construction and renovation projects under this Proposed Action, as well as those included in the 2023 FMS PTC EIS, to support a total of 36 F-35 and 12 F-16 aircraft. However, since the completion of the 2023 FMS PTC EIS, facilities siting was modified based on design and updated locations are represented in **Figure 2.1-4**. These updated locations occur on previously disturbed areas on Ebbing ANG Base.

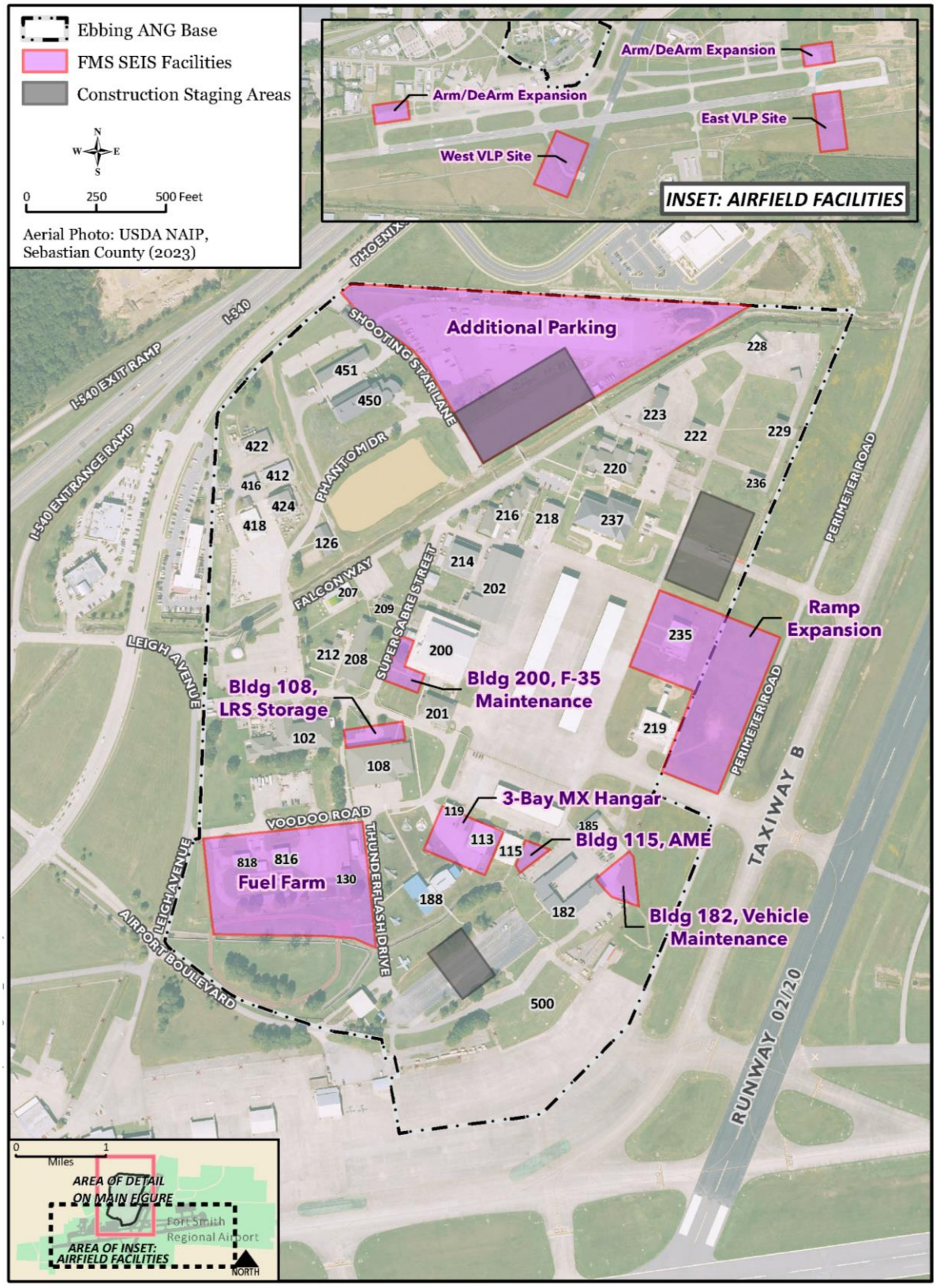


Figure 2.1-3. New FMS PTC Facilities at Ebbing ANG Base/FSRA Under the Proposed Action

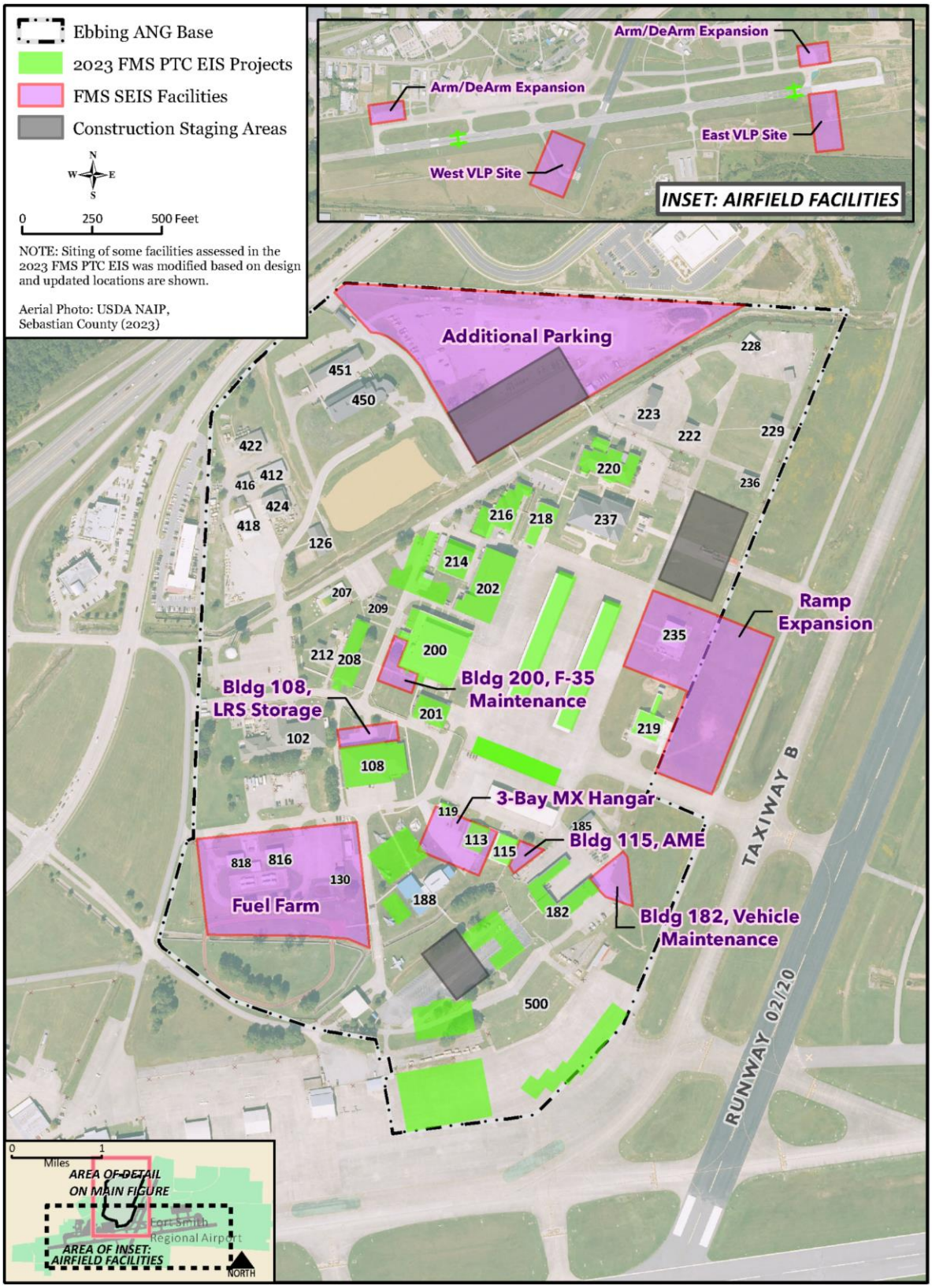


Figure 2.1-4. All FMS PTC Facilities at Ebbing ANG Base/FSRA

Table 2.1-10. Construction and Renovation Projects at Ebbing ANG Base/FSRA Under the Proposed Action

Ebbing ANG Base Facility Number	Proposed Facility Use	Required Facility Area	Description	Total Area of New Ground Disturbance and Impervious Surface	Proposed Project Occurs on Ebbing ANG Base or FSRA
108	LRS Storage	15,000 sq. ft. (0.34 acre)	Add to/Alter existing building to support PAA increase	15,000 sq. ft. (0.34 acre)	Ebbing ANG Base
115	AME Back Shops	10,000 sq. ft. (0.23 acre)	Add to/Alter existing building to support PAA increase	10,000 sq. ft. (0.23 acre)	Ebbing ANG Base
182	Back Shops, Vehicle Maintenance	20,000 sq. ft. (0.46 acre)	Add to/Alter existing building to support PAA increase	20,000 sq. ft. (0.46 acre)	Ebbing ANG Base
200	F-35 Maintenance	3,000 sq. ft. (0.07 acre)	Add to/Alter existing building to support PAA increase	3,000 sq. ft. (0.07 acre)	Ebbing ANG Base
Existing Fuel Farm	Fuel Storage Expansion	221,000 sq. ft. (5.07 acres)	Expansion to existing fuel storage farm to provide adequate fuel supply capacity	221,000 sq. ft. (5.07 acres)	Ebbing ANG Base
113 and 119/New Construction [(a)]	Three-Bay Hangar	40,000 sq. ft. (0.92 acre)	Demolish buildings 113 and 119 to construct new MX hangar to support F-35 PAA increase	30,484 sq. ft. (0.70 acre)	Ebbing ANG Base
New Construction [(a)]	Main Ramp Expansion	203,000 sq. ft. (4.66 acres)	Expansion to main ramp to provide aircraft parking capacity for PAA increase	203,000 sq. ft. (4.66 acres)	Both
New Construction [(a)]	Arm/De-Arm Expansion (x2)	10,000 sq. ft. each (0.23 acre each)	Capacity expansion to launch eight F-16 aircraft simultaneously	20,000 sq. ft. (0.46 acre)	FSRA
New Construction [(a)]	VLP	118,400 sq. ft. (2.72 acres)	Provide emergency vertical landing capability for RSAF F-35B aircraft	118,400 sq. ft. (2.72 acres)	FSRA
Additional Construction	Parking Lot	304,920 sq. ft. (7 acres)	Expansion of existing parking lot	304,920 sq. ft. (7 acres)	Ebbing ANG Base

Table 2.1-10. Construction and Renovation Projects at Ebbing ANG Base/FSRA Under the Proposed Action

Ebbing ANG Base Facility Number	Proposed Facility Use	Required Facility Area	Description	Total Area of New Ground Disturbance and Impervious Surface	Proposed Project Occurs on Ebbing ANG Base or FSRA
New Construction (a)	Parking Lot	181,645 sq. ft. (4.17 acres)	Required for parking capacity due to MILCON and FSRM projects, and to replace removal of existing parking	181,645 sq. ft. (4.17 acres)	Ebbing ANG Base
New Construction (a)	Parking Lot	81,022 sq. ft. (1.86 acres)	Required for parking capacity due to MILCON and FSRM projects, and to replace removal of existing parking	81,022 sq. ft. (1.86 acres)	Ebbing ANG Base
Total New Ground Disturbance and New Impervious Surface Areas			**1,208,471 sq. ft. (27.74 acres)**		

Key: AFI = Air Force Instruction; AME = Aircraft Munitions Equipment; ANG = Air National Guard; AFI = Air Force Instruction; FSRA = Fort Smith Regional Airport; FSRM = Facilities Sustainment, Restoration and Modernization; LRS = Logistics Readiness Squadron; MILCON = military construction; MX = maintenance; PAA = Primary Aerospace Vehicle Authorization; RSAF = Republic of Singapore Air Force; sq. ft. = square feet; VLP = Vertical Landing Pad

Note:

a. New construction has not been assigned a facility number on Ebbing ANG Base; however, new construction projects are displayed and identified in **Figure 2.1-3** as their Proposed Facility Use.

2.1.3.1 VLP Site Subalternatives

To support the proposed F-35B STOVL operations, the DAF would construct one 220-feet by 220-feet VLP with a 100-feet by 700-feet taxiway within the FSRA airfield. This SEIS evaluates two alternative locations to site the VLP: the West VLP Site Subalternative and the East VLP Site Subalternative. The exact location and configuration of the concrete VLP within the area depicted in **Figure 2.1-3** will be determined during project design and is not anticipated to impact navigational aids (NAVAIDS), airport design surfaces[14], or Perimeter Road; however, the entire area would not be disturbed. **Table 2.1-10** presents the proposed area of ground disturbance.

As shown in the airfield inset of **Figure 2.1-3**, the West VLP Site Subalternative would construct the VLP and connecting taxiway along the southwestern end of RWY 02/20 and the East VLP Site Subalternative would construct the VLP and connecting taxiway along the southeastern end of RWY 08/26.

[14] Airport development concept includes improvements to the airside and landside area to satisfy the FAA design and safety standards found in the Advisory Circular 150/5300-13B *Airport Design*.

2.2 NO ACTION ALTERNATIVE

NEPA requires consideration and analysis of a no action alternative for the purposes of presenting a comparative analysis to the action alternatives. The No Action Alternative, consistent with DAF policy and FAA Order 1050.1F, serves as a baseline against which the effects of the Proposed Action and Alternatives are compared and contrasted in this SEIS.

Under the No Action Alternative in this SEIS, the DAF would not expand the FMS PTC mission at Ebbing ANG Base and the DAF would proceed with the implementation of the 2023 FMS PTC ROD issued on March 11, 2023. The 2023 FMS PTC EIS (§ 2.2) presents aircraft operations, personnel/manpower, and facility requirements assessed at Ebbing ANG Base/FSRA for the FMS PTC beddown action. The total number of aircraft, operations, and personnel at Ebbing ANG Base/FSRA would not change from what was authorized in the 2023 FMS PTC EIS ROD. Additionally, only those construction and renovation projects assessed in the 2023 FMS PTC EIS for Ebbing ANG Base/FSRA would occur.

If the No Action Alternative were implemented, the DAF would need to undertake a new basing action to determine another location that meets the underlying purpose and need. This would require additional NEPA analysis. That process and subsequent beddown would not meet national security agreements with FMS customer countries.

2.3 ALTERNATIVE 1: REFINE OPERATIONS FROM THE 2023 FMS PTC EIS

Under Alternative 1, the DAF would not beddown the additional 12 F-35 PAA, but FMS PTC operations would be modified for the existing 24 F-35 PAA to satisfy new requirements and refined operational procedures identified for F-35A and F-35B aircraft since completion of the 2023 FMS PTC EIS. The numbers of annual military operations at FSRA, airspace events, MTR events, nighttime operations and events, as well as use of munitions and countermeasures would not change from those listed under the 2023 FMS PTC EIS columns in **Table 2.1-2, Table 2.1-4, Table 2.1-6, Table 2.1-7, and Table 2.1-8, respectively**. However, Alternative 1 proposes the following changes from the No Action Alternative:

- F-35B aircraft would conduct STOVL operations. Therefore, Alternative 1 includes construction of a VLP at one of the sites identified in Section 2.1.3.1, *Proposed Action, VLP Site Subalternatives*; these subalternatives are also carried forward for detailed analyses.
- F-35A and F-35B flight tracks and flight profiles would be revised based on an updated training syllabus.
- Afterburner would be used on 95% of departures for both the F-35A and F-35B.
- There would be no reduced-power departures, allowing the F-35 aircraft to accelerate to a 350-knot climb airspeed.

Personnel numbers would not change from the No Action Alternative, and aside from the VLP, no additional construction activities would occur under this alternative.

2.4 ALTERNATIVES ELIMINATED

The 2023 FMS PTC EIS (§ 2.4) identified and described the FMS PTC beddown alternative selection standards and site-specific project alternative selection standards, which are applicable to continuing the FMS PTC mission at Ebbing ANG Base.

To meet the need of incorporating F-35B STOVL operations, as discussed above in Section 1.3, *Need for Action*, the DAF consulted and coordinated with Naval Facilities Engineering Systems Command[15], FSRA, and local FAA representatives to evaluate a range of alternatives for siting and constructing a new VLP. During discussions, they identified six areas along RWYs 02/20 and 08/26 to site the VLP, as shown in **Figure 2.4-1.** and labeled as 1 through 6 on the map. Each of these areas were evaluated based on the following considerations:

- Minimize disruption to civil aircraft operations.
- Avoid impacting NAVAIDS.
- Reduce potential effects to the civilian aviation terminal and the Veterans Affairs Clinic.
- Avoid penetrating airport design surfaces.

Area 1 was eliminated due to potential disruption to civil aircraft operations. Areas 2 and 6 were eliminated to avoid impacting NAVAIDS and Area 4 was eliminated to reduce potential effects to the civilian aviation terminal and the Veterans Affairs Clinic. Therefore, after coordination with FSRA and local FAA representatives, the DAF identified Areas 3 and 5 as the most viable options because they satisfied the evaluation criteria listed above. Area 5 is hereafter referred to as the West VLP Site and Area 3 is the East VLP Site shown in **Figure 2.1-3**.

[15] Naval Facilities Engineering Systems Command provides the U.S. Navy and Marine Corps with facilities and expeditionary expertise. The DAF consulted with Naval Facilities Engineering Systems Command because the Marine Corps currently flies the F-35B and has constructed VLPs on their installations. Their direct experience with the aircraft and STOVL operations were used to inform potential siting locations at for the VLP.

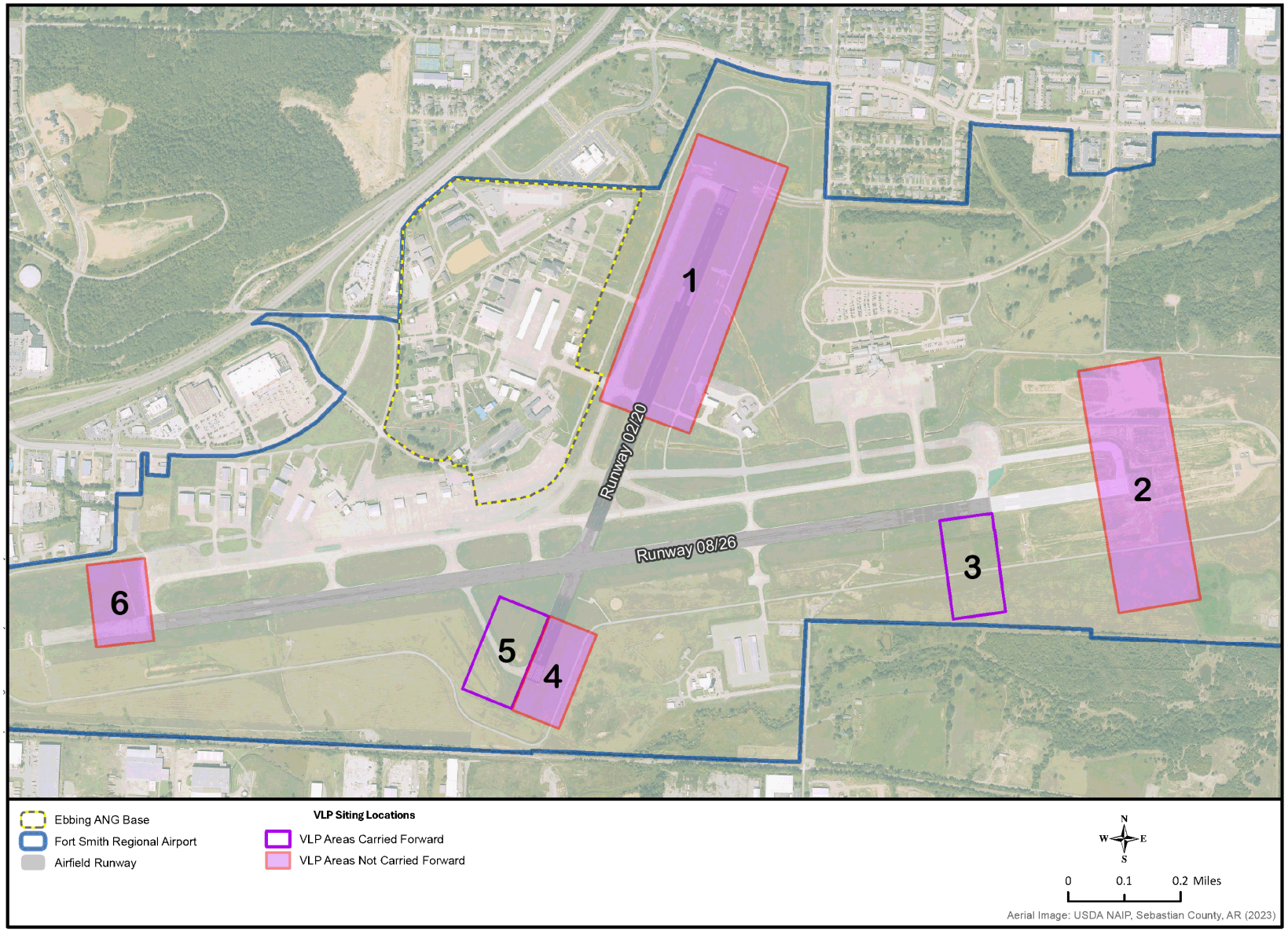


Figure 2.4-1. VLP Siting Areas Evaluated at FSRA

2.5 PERMITS, LICENSES, AND OTHER AUTHORIZATIONS

Table 2.5-1 lists permits, licenses, and other authorizations that the DAF must obtain that are specific to the Proposed Action and Alternatives.

Table 2.5-1. Permits, Licenses, and Other Authorizations

Permit/License/ Approval	Principal Regulation Citation(s)	Lead Agency	When Required	Status
Section 106 Consultation	National Historic Preservation Act (PL 113-287) (54 USC §§ 300101–320303); 36 CFR § 800, *Protection of Historic Properties*	Arkansas and Oklahoma State Historic Preservation Officers; Federally Recognized Indian Tribes	Prior to implementing the Proposed Action or Alternative 1	Initial consultation letters sent on April 30, 2025; consultation is ongoing
Government-to-Government Consultation with Federally Recognized Indian Tribes	Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*; DoDI 4710.02, *Interactions with Federally Recognized Tribes*; and Department of the Air Force Instruction 90-2002, *Interactions with Federally Recognized Tribes*	Federally Recognized Indian Tribes (see Appendix B, *Public and Agency Involvement,* Section B.2.2 for a list of Tribes)	Prior to implementing the Proposed Action or Alternative 1	Initial consultation letters sent on April 30, 2025; consultation is ongoing
ESA Section 7 Consultation	Endangered Species Act (PL 93-205) (16 USC §§ 1531–1544); 50 CFR § 402, *Interagency Cooperation – Endangered Species Act of 1973*	USFWS	Prior to implementing the Proposed Action or Alternative 1	Initial consultation letters sent on April 30, 2025; consultation was completed on May 30, 2025 (Appendix B, *Public and Agency Involvement*)
National Pollutant Discharge Elimination System Permit	Clean Water Act (PL 95.217) (33 USC § 1251); 40 CFR § 122, *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System*	USEPA	Prior to implementing the Proposed Action or Alternative 1	Awaiting Record of Decision (ROD) for this SEIS
Clean Water Act Section 404 permit	Clean Water Act (PL 95.217) (33 USC § 1251); 33 CFR §§ 320-332	USACE	Prior to construction activities	Awaiting ROD for this SEIS

Table 2.5-1. Permits, Licenses, and Other Authorizations

Permit/License/ Approval	Principal Regulation Citation(s)	Lead Agency	When Required	Status
Air Quality Construction Permit	Clean Air Act (PL 91-604) (42 USC § 7401); 40 CFR §§ 50-99; Arkansas State Implementation Plan	ADEQ	Prior to construction activities that emit regulated pollutants	Awaiting ROD for this SEIS
Hazardous Waste Generator ID	Resource Conservation and Recovery Act (RCRA) (PL 94-580) (42 USC § 6901); 40 CFR §§ 239-282; Arkansas Hazardous Waste Regulations	ADEQ and USEPA	Ongoing for facility compliance	Active
Waste Disposal Permits (if needed for contaminated soils)	RCRA (PL 94-580) (42 USC § 6901); 40 CFR §§ 239-282 Comprehensive Environmental Response, Compensation, and Liability Act (PL 96-510) (42 USC § 9601); 40 CFR § 307, *CERCLA Claims Procedures*	ADEQ and USEPA	If contaminated soils are generated during construction	Awaiting ROD for this SEIS
Occupational Health and Safety Plan	Occupational Safety and Health Act (OSHA) (PL 91-596) (29 § USC 651); 29 CFR § 1910, *Occupational Safety and Health Standards,* Air Force Occupational Safety and Health (AFOSH) standards	OSHA and DAF	Prior to and during construction and operations	Active (existing protocols will be followed)
Explosives Safety Plan (if applicable)	Department of Defense Explosives Safety Standards (DoDI 6055.09)	DAF	If explosives are stored or used at new locations	Awaiting ROD for this SEIS

Key: §/§§ = Section(s)/Part(s); ADEQ = Arkansas Department of Environmental Quality; AFOSH = Air Force Occupational Safety and Health; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; DAF = Department of the Air Force; DoDI = Department of Defense Explosives Safety Standards; EPA = Environmental Protection Agency; ESA = Endangered Species Act; ID = identifier; OSHA = Occupational Safety and Health Act; PL = Public Law; RCRA = Resource Conservation and Recovery Act; ROD = Record of Decision; TBD = to be determined; USACE = United States Army Corps of Engineers; USEPA = United States Environmental Protection Agency; USC = United States Code; USFWS = United States Fish and Wildlife Service

2.6 COMPARISON OF ENVIRONMENTAL CONSEQUENCES AND MITIGATIONS BY ALTERNATIVE

Table 2.6-1 presents a summary of potential environmental consequences and potential mitigations for this SEIS by alternative and environmental resource area.

Table 2.6-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
Noise	*Installation and Surrounding Area*: There would be no additional noise effects, and noise levels would be as described in the 2023 FMS PTC EIS § 3.3.5 (Section 3.2.2.3.1). *Airspace and Ranges*: There would be no additional noise effects. Noise levels would be as described in the 2023 FMS PTC EIS § 3.3.4.2 and would remain below L_{dnmr} 65 dBA and DNL 65 dBA (Section 3.2.2.3.2).	*Installation and Surrounding Area*: Up to an additional 1,788 acres of land affected by DNL 65 dBA or greater and up to an additional 6,493 people affected by DNL 65 dBA or greater (Section 3.2.2.1.1). Noise increases at multiple representative points of interest would be adverse and significant. *Airspace and Ranges*: Time-averaged noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA (Section 3.2.2.1.2). Therefore, noise effects would not be significant.	*Installation and Surrounding Area*: Up to an additional 870 acres of land affected by DNL 65 dBA or greater and up to an additional 4,426 people affected by DNL 65 dBA or greater (Section 3.2.2.1.1). Noise increases at multiple representative points of interest would be adverse and significant. *Airspace and Ranges*: Time-averaged noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA (Section 3.2.2.2.2). Therefore, noise effects would not be significant.
Land Use	*Installation and Surrounding Area*: Noise levels at Ebbing ANG Base/FSRA would be the same as what was described and authorized in the 2023 FMS PTC EIS § 3.4.5.1 and ROD (see Section 3.3.1.1). Significant adverse effects to residential land use would continue. Some commercial and public/quasi-public uses in the surrounding area could also continue to experience moderate adverse effects. *Airspace and Ranges*: Noise levels in the airspace would not change from what was described in the 2023 FMS PTC EIS § 3.4.4.2. There would be low-to-moderate adverse effects on underlying land uses and associated activities.	*Installation and Surrounding Area*: The land area outside the Ebbing ANG Base/FSRA boundary exposed to noise levels of DNL 65 dBA and greater under the West and East VLP Site Subalternatives would increase by 1,764 and 1,788 acres respectively. Notably, the area of residential land exposed to noise of DNL 65 dBA and greater would increase by 556 and 561 acres, respectively. The effects on residential land use are adverse and significant under both subalternatives. *Airspace and Ranges*: Noise levels in the airspace would remain below L_{dnmr} 65 dBA and DNL 65 dBA, which is compatible with all land use categories in developed areas. Some noise-sensitive land uses would experience up to L_{dnmr}	*Installation and Surrounding Area*: The land area outside the Ebbing ANG Base/FSRA boundary exposed to noise levels of DNL 65 dBA and greater under the West and East VLP Site Subalternatives would increase by 863 and 870 acres, respectively. Notably, the area of residential land exposed to noise of DNL 65 dBA and greater would increase by 322 and 323 acres, respectively. The effects on residential land use are adverse and significant under both subalternatives. *Airspace and Ranges*: Noise levels in the airspace would remain below L_{dnmr} 65 dBA and DNL 65 dBA, which is compatible with all land use categories in developed areas. Some noise-sensitive land uses would experience up to

Table 2.6-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
		3.1 dBA (DNL 3 dBA) time-averaged noise increases. These small increases may be perceived as adverse effects to visitors or users of these areas where an otherwise quiet setting is expected for primitive recreation. However, the resulting time-averaged noise-level increases would not be significant based on DoD and FAA guidelines for outdoor recreational uses.	L_{dnmr} 2 dBA (DNL 1.9 dBA) time-averaged noise increases. These small increases may be perceived as adverse effects to visitors or users of these areas where an otherwise quiet setting is expected for primitive recreation. However, the resulting time-averaged noise-level increases would not be significant based on DoD and FAA guidelines for outdoor recreational uses.
Socioeconomics	*Installation and Surrounding Area*: There would be no additional incoming personnel or dependents associated beyond what was authorized in the 2023 FMS PTC EIS and ROD. Socioeconomic conditions would continue as under existing conditions and trends.	*Installation and Surrounding Area*: There would be an increase of 596 people to the ROI by 2029. The population increase would be minor (less than 5% of the total projected population in the ROI) and would remain within the range of Sebastian County's projected population for the year 2029. Some beneficial effects may occur from additional employment and income associated with incoming personal and construction activities. An additional 271 housing units may be demanded by the end state of 2029 under this alternative. An estimated 204 children of school age would be associated with the incoming personnel and may result in larger class sizes and additional pressures for resources and expenditures but would also result in additional funding from additional enrollment.	*Installation and Surrounding Area*: Potential effects to socioeconomic resources under this alternative would be the same as those described under the No Action Alternative. Under this alternative, there may be temporary and minor beneficial effects associated with the employment and income generated during VLP construction.

Table 2.6-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
Cultural Resources	*Installation and Surrounding Area*: As described in the 2023 FMS PTC EIS § 3.7.4, there would be no effects to archaeological or traditional cultural properties and no adverse effects to architectural resources. *Airspace and Ranges*: As described in the 2023 FMS PTC EIS § 3.7.4, there would be no effects to archaeological or traditional cultural properties and no adverse effects to architectural resources.	*Installation and Surrounding Area*: There would be no effects to archaeological resources or traditional cultural properties and no adverse effects to architectural resources (Section 3.5.2). Consultation with the Arkansas SHPO and federally recognized Tribes is ongoing. *Airspace and Ranges*: There would be no adverse effects to archaeological resources, architectural resources, or traditional cultural properties (Section 3.5.2). Consultation with the Arkansas and Oklahoma SHPOs and federally recognized Tribes is ongoing.	*Installation and Surrounding Area*: There would be no effects to archaeological resources or traditional cultural properties and no adverse effects to architectural resources (Section 3.5.2). Consultation with the Arkansas SHPO and federally recognized Tribes is ongoing. *Airspace and Ranges*: There would be no adverse effects to archaeological resources, architectural resources, or traditional cultural properties (Section 3.5.2). Consultation with the Arkansas and Oklahoma SHPOs and federally recognized Tribes is ongoing.
Biological Resources	*Installation and Surrounding Area*: Consequences to biological resources would be the same as those described in the 2023 FMS PTC EIS § 3.8.4.1. The USFWS concurred that the beddown of the FMS PTC at Ebbing ANG Base may affect but is not likely to adversely affect federally listed species. ESA Section 7 consultation with the USFWS regarding the Ebbing ANG Base/FSRA portion of the FMS PTC beddown was completed on March 30, 2022. *Airspace and Ranges*: Consequences to biological resources within the airspace would be the same as those described in the 2023 FMS PTC EIS § 3.8.4.2. There would be no minor to moderate effects to wildlife from airspace and range operations. The USFWS concurred that the beddown of the FMS PTC at Ebbing ANG Base may affect, but is not likely to	*Installation and Surrounding Area*: Consequences to biological resources include vegetation removal in currently maintained and landscaped areas for construction activities. Wildlife would experience increased noise effects from airfield operations compared to the No Action Alternative (Section 3.6.2.1.1). The USFWS concurred that the Proposed Action may affect but is not likely to adversely affect federally listed species. ESA Section 7 consultation with the USFWS regarding the Proposed Action was completed on May 30, 2025. *Airspace and Ranges*: Changes in noise levels in the airspace would range from a decrease of L_{dnmr} 6.3 dBA to an increase of L_{dnmr} 3.1 dBA (decrease of DNL 6 dBA to an increase of DNL 3 dBA), compared to the No Action Alternative. Some wildlife	*Installation and Surrounding Area*: Consequences to biological resources include vegetation removal in currently maintained and landscaped areas for constructing the VLP. Wildlife would experience increased noise effects from STOVL operations compared to the No Action Alternative (Section 3.6.2.2). *Airspace and Ranges*: Changes in noise levels in the airspace would range from a decrease of L_{dnmr} 6.4 dBA to an increase of L_{dnmr} 2 dBA (decrease of DNL 6 dBA to an increase of DNL 1.9 dBA), compared to the No Action Alternative. Noise effects to wildlife would be consistent with the No Action Alternative and would not be significant (Section 3.6.2.2).

Table 2.6-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
	adversely affect federally listed species. ESA Section 7 consultation with the USFWS regarding the airspace component of the FMS PTC beddown was completed on December 20, 2022.	would be exposed to increased noise from airspace and range operations, but not to a significant level. An increase in munitions and countermeasure use would not result in significant biological resources effects (Section 3.6.2.1.2). The USFWS concurred that the Proposed Action may affect but is not likely to adversely affect federally listed species. ESA Section 7 consultation with the USFWS was completed on May 30, 2025.	
Physical Resources	*Installation and Surrounding Area*: Surface water, groundwater, and wetlands effects would be minimized through required design elements, and permit related BMPs addressed in the 2023 FMS PTC EIS § 3.9.4. There would be no effects to floodplains, topography, and soils (Section 3.7.2.3). *Airspace and Ranges*: There would be no interaction with the resource under the airspace if the No Action Alternative is implemented (Section 3.7.2.3).	*Installation and Surrounding Area*: There would be no effects to topographical features, groundwater, wetlands, or floodplains. Soil erosion and surface water effects would be minimized through required design elements and permit-related BMPs. Aquatic features were identified in the eastern arm/de-arm expansion area and the West VLP Site during 2025 surveys. However, none of these features fit the definition of a jurisdictional waters of the United States (WOTUS). The DAF would coordinate with the USACE Little Rock District, Regulatory Branch prior to construction activities to either pursue an Approved Jurisdictional Determination or a Preliminary Jurisdictional Determination. The DAF would apply for a Clean Water Act Section 404 permit, as appropriate, and coordinate any required mitigations with USACE (Section 3.7.2.1). *Airspace and Ranges*: Increased use of chaff and flares within the airspace have been shown to pose	*Installation and Surrounding Area*: There would be no effects to topographical features, groundwater, wetlands, or floodplains. Soil erosion and surface water effects would be minimized through required design elements and permit related BMPs. Aquatic features were identified in the West VLP Site during 2025 surveys. However, none of these features fit the definition of a jurisdictional WOTUS. The DAF would coordinate with the USACE Little Rock District, Regulatory Branch prior to construction activities to either pursue an Approved Jurisdictional Determination or a Preliminary Jurisdictional Determination. The DAF would apply for a Clean Water Act Section 404 permit, as appropriate, and coordinate any required mitigations with USACE (Section 3.7.2.2). *Airspace and Ranges*: There would be no interaction with the resource under the airspace if Alternative 1 is implemented (Section 3.7.2.2).

Table 2.6-1. Comparison of Environmental Effects by Alternative

Resource Area	No Action Alternative	Proposed Action	Alternative 1
		no adverse effects to physical resources. There would be no discernable concentration of chaff or flares deposited in water bodies beneath the airspace (Section 3.7.2.1).	
Air Quality	*Installation and Surrounding Area*: Air emissions would remain consistent with current operations, and no changes in emissions levels would occur. All criteria pollutant emissions would remain within regulatory thresholds. *Airspace and Ranges*: Existing operations in airspace and ranges would remain unchanged, with no changes to emissions levels.	*Installation and Surrounding Area*: Emissions from construction, operations, and increased personnel would remain within regulatory thresholds. Emissions would not adversely affect air quality. *Airspace and Ranges*: Emissions from expanded use of airspace would remain within regulatory thresholds.	*Installation and Surrounding Area*: Emissions from limited construction and existing operations would remain within regulatory thresholds. *Airspace and Ranges*: Emissions associated with airspace use would remain within regulatory thresholds.

Key: % = percent; § = Section; ANG = Air National Guard; BMP = best management practice; EIS = Environmental Impact Statement; dBA = A-weighted decibels; DNL = day-night average sound level; DoD = Department of Defense; ESA = Endangered Species Act; FAA = Federal Aviation Administration; FMS = Foreign Military Sales; L_{dnmr} = onset rate-adjusted monthly day-night average sound level; PTC = Pilot Training Center; ROD = Record of Decision; ROI = region of influence; SHPO = State Historic Preservation Officer; TBD = to be determined; USACE = United States Army Corps of Engineers; USFWS = United States Fish and Wildlife Service; VLP = Vertical Landing Pad

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the affected environment of resource areas potentially affected by the Proposed Action and Alternatives and presents an analysis of potential effects. For each resource area analyzed in this SEIS, this chapter defines the resource, describes the region of influence (ROI), explains the analysis methodology, and presents the environmental consequences of the Proposed Action, Alternative 1, and the No Action Alternative.

The types of activities proposed in the SEIS are similar to those assessed in the 2023 FMS PTC EIS and approved in the ROD. Therefore, as a supplemental document, this SEIS leverages the analyses presented in the 2023 FMS PTC EIS, where appropriate. Because this SEIS is supplementing the 2023 FMS PTC EIS and ROD, the analyses of the Proposed Action and Alternative 1 are compared to the ROD-selected conditions assessed in the 2023 FMS PTC EIS, which is this SEIS's No Action Alternative. Therefore, the No Action Alternative presents a summary of effects presented in the 2023 FMS PTC EIS and authorized in the ROD. This allows the reader and decision-makers to easily compare the consequences of the SEIS action alternatives (i.e., Proposed Action and Alternative 1) to the No Action Alternative (2023 FMS PTC EIS and ROD).

3.1.1 Resources Not Carried Forward for Detailed Analysis

Based on review of the details of the SEIS Proposed Action and Alternatives and taking into account previous NEPA analysis, the DAF identified the resource areas listed in **Table 3.1-1** that are not carried forward for detailed analyses for either the installation, the airspace, or both.

Table 3.1-1. Resource Areas Not Carried Forward for Detailed Analysis

Resource Area	Affected Environment Component	Rationale for Not Carrying Forward for Detailed Analysis
Socioeconomics	Airspace	Socioeconomic effects to areas under the airspace and ranges were not evaluated because the proposed use would be consistent with ongoing activities and there are no development or other socioeconomic-related activities occurring under the airspace. Noise analysis presented in Section 3.2, *Noise*, shows that time-averaged noise levels in the airspace would not exceed 65 dBA for the Proposed Action or Alternative 1. Therefore, socioeconomic resources under the airspace would not be significantly affected.
Hazardous Materials and Hazardous and Solid Wastes	Installation and Airspace	Utilization of hazardous materials and resulting generation of hazardous waste would not affect installation generator status or result in significant effects. Management of hazardous wastes would be performed according to prescribed procedures in the Hazardous Waste Management Plan (ANG, 2022). Toxic substances such as asbestos and lead-based paint would be managed according to the Ebbing ANG Base Asbestos Management Plan (ANG, 2006). If encountered during construction-related activities, contaminated groundwater and soils would be stored, transported, and disposed in accordance with applicable

Table 3.1-1. Resource Areas Not Carried Forward for Detailed Analysis

Resource Area	Affected Environment Component	Rationale for Not Carrying Forward for Detailed Analysis
		federal, state, and local regulations; DAF policy and regulations; and base policies. Disposal of construction debris at Ebbing ANG Base/FSRA is typically the responsibility of construction contractors. Contractors are required to adhere to all applicable federal, state, and local regulations regarding waste disposal, ensuring that debris is transported to authorized disposal facilities like the Fort Smith Landfill. Any construction debris contaminated with hazardous waste, asbestos, lead-based paint, or other hazardous components, would be managed in accordance with AFMAN 32-7002 and the installation's Integrated Solid Waste Management Plan and Hazardous Waste Management Plan. Hazardous materials spill response and pollution prevention would be performed in accordance with the installation's Oil and Hazardous Substances Spill Prevention and Response Plan and Stormwater Pollution Prevention Plan. Environmental Restoration Program sites would be managed according to DAF and NGB protocols and federal, state, and local regulations. PFOS and PFOA are members of a family of emerging contaminants known as PFAS that are directly related to the former use of a certain AFFF formulation, a fire-suppressing agent that was used by the DoD. PFOS/PFOA issues are discussed in Section 3.3, *Land Use*, as ERP land use constraints. Use of chaff and flares in the airspace have been shown to have no significant effects to the environment (DAF, 2023c). There would be no hazardous materials, or hazardous or solid wastes generated in the airspace, therefore no effects would occur.
Health and Safety	Installation and Airspace	Ebbing ANG Base began operating F-35 aircraft in September 2024. Since the overall F-35 program's inception, the U.S. Air Force Safety Center has documented the average annual "Class A" and "Class B" mishap rate for F-35 over the last 10 years as 2.22 (for both) per 100,000 flight hours (DAF, 2022). Therefore, the potential for F-35 mishaps is considered low and standard airfield safety procedures would be implemented. All construction activities at Ebbing ANG Base/FSRA would be accomplished by technically qualified personnel and would be conducted in accordance with applicable DAF safety requirements, approved technical data, and Air Force Occupational Safety and Health standards; consequently, no significant effects would occur. Munitions handling, storage, and countermeasure use would follow established DAF explosive safety directives. All activities involving munitions and countermeasures in the airspace would be conducted by trained personnel using approved technical procedures to ensure safety and compliance. There would be no significant health and safety concerns under the Proposed Action and Alternatives.

Table 3.1-1. Resource Areas Not Carried Forward for Detailed Analysis

Resource Area	Affected Environment Component	Rationale for Not Carrying Forward for Detailed Analysis
Transportation	Installation and Airspace	The road system on Ebbing ANG Base currently functions adequately although the road network is inefficient with no redundancy for higher traffic events. Changes in personnel may affect on-base and off-base traffic operations, and construction activities may cause short-term increases in traffic congestion. However, there would be no significant effects to overall level of service on and around Ebbing ANG Base/FSRA. There would be no changes to roadways under the airspace and no effects to transportation in these areas.
Utilities and Infrastructure	Installation and Airspace	Utilities and infrastructure uses would be consistent with Installation Development Plans and would not involve substantive changes outside the boundary of Ebbing ANG Base/FSRA. Existing utilities and infrastructure would have the capacity to accommodate additional personnel without stressing the existing local and regional systems.
Airspace Management and Use	Installation and Airspace	Existing airspace would be utilized according to established procedures and authorizations. Effects on joint airspace uses by both military and civilian aircraft would be expected to be minimal. However, this SEIS does evaluate potential noise increases in the airspace from the additional F-35 aircraft and changes in training operations (Section 3.2, *Noise*).
Visual Resources	Installation and Airspace	Visual resources resource area was not evaluated in detail because size, orientation, and appearance of proposed new structures conform with surrounding visual context of airfield and industrial-type uses at Ebbing ANG Base. Additionally, the visibility of military aircraft, particularly low-flying aircraft, is extremely transitory. Moreover, there would be no physical changes to the ground under the airspace and ranges. Therefore, visual resources are not discussed further.

Key: AFFF = aqueous film-forming foam; AFMAN = Air Force Manual; ANG = Air National Guard; DAF = Department of the Air Force; dBA = A-weighted decibels; DoD = Department of Defense; EIS = Environmental Impact Statement; ERP = Environmental Restoration Program; FMS = Foreign Military Sales; FSRA = Fort Smith Regional Airport; NGB = National Guard Bureau; PFAS = per- and polyfluoroalkyl substances; PFOA = perfluorooctanoic acid; PFOS = perfluorooctane sulfonate; SEIS = Supplemental Environmental Impact Statement

3.1.2 Past, Present, Reasonably Foreseeable Future Actions Considered

The baseline analysis under the No Action Alternative also includes evaluation of potential effects associated with other development and infrastructure improvement projects that would occur either on or in the vicinity of Ebbing ANG Base/FSRA, which are listed in **Table 3.1-2**. Projects included in this table are actions that have already occurred within the last 5 years or are expected to occur up to 1 year after the ROD signature date for this SEIS. This table also lists the resource areas that are potentially affected by each project and therefore are incorporated into the respective No Action Alternative baseline analyses.

Table 3.1-2. Past and Present Actions

Aspect	Description	Timeframe	Resources Potentially Affected
Fort Smith Regional Airport Passenger Facility Charge (PFC) Projects (FAA, 2021)	PFC projects include (1) rehabilitation of Runway 07/25, (2) construction of security screening checkpoint improvements, (3) installation of perimeter security fencing, (4) replacement of terminal building boiler	2021-2022	Air quality, noise, safety, earth, water, biological and cultural resources, infrastructure, land use, and socioeconomics

Table 3.1-2. Past and Present Actions

Aspect	Description	Timeframe	Resources Potentially Affected
	system, and (5) replacement of terminal lighting control system.		
Fort Smith Regional Airport Runway 8-26 Extension (Garver, 2022)	Projects include (1) construction of a 1,300-foot runway extension to Runway 8-26 and blast pad, (2) extension of Taxiway A, (3) relocation of RPZ and acquisition of 0.53 acre for RPZ, (4) security fence relocation, and (5) relocation and upgrade of airport lighting systems and antennas.	Construction started in 2022; completed in 2023	Airspace, air quality, noise, safety, earth, water, biological and cultural resources, infrastructure, land use, and socioeconomics
Proposed Veterans Administration Hospital (ARANG, 2022)	A vacant parcel of land to the north of Ebbing ANG Base cantonment (west side) is a proposed site for the Veterans Administration Hospital.	Construction completed; opened in 2022	Air quality, noise, earth, water, biological and cultural resources, infrastructure, land use, and socioeconomics
Fort Chaffee Redevelopment Authority - Chaffee Crossing 2021 Annual Report (FCRA, 2022)	▪ Mars Petcare will undergo a $145 million manufacturing expansion of 200,000 square feet, adding 120 new jobs. ▪ TGE Global Entertainment will construct a 92,000 square-foot film-making studio with up to 150 jobs on 20 acres. ▪ Sixteen new neighborhoods were started in 2021 with 1,040 residential units representing $200 million in capital investments.	Construction in 2022-2025	Air quality, noise, earth, water, biological and cultural resources, infrastructure, land use, and socioeconomics

Key: $ = dollar; ANG = Air National Guard; PFC = Passenger Facility Charge; RPZ = runway protection zone

Reasonably foreseeable future actions and predictable environmental trends (hereinafter referred to as "foreseeable actions and trends") in the areas are also considered as part of the cumulative effects analysis for each resource. Predictable environmental trends considered in this SEIS are trends generally agreed upon by the greater scientific community and/or those that could result from foreseeable actions. **Table 3.1-3** lists reasonably foreseeable actions and trends that are considered in this SEIS.

A future action is considered a foreseeable action for this SEIS if it is (1) included in a federal, state, or local planning document; (2) likely to occur based on the recommendations of federal, state, or local planning agencies; (3) an existing permit application; or (4) a fiscal appropriation that is likely (or reasonably certain) to occur. For purposes of this analysis, foreseeable actions were considered if they could result in potential effects that could have temporal or geographic overlap with potential effects of the Proposed Action.

Foreseeable actions are limited in scope to 2030, as projects beyond 5 years from publication of this document are too speculative in nature to be adequately addressed; in such cases these are identified in the context of environmental trends (e.g., community development, population growth, etc.).

Table 3.1-3. Reasonably Foreseeable Future Actions and Environmental Trends

Aspect	Description	Timeframe	Resources Potentially Affected
Reasonably Foreseeable Future Actions			
188th Wing Fort Smith Municipal Airport Installation Development Plan (IDP) Task 8 Final Submittal (ARANG, 2022)	The IDP Program identified 23 planning actions and/or projects. These projects would encompass demolition, renovation, and new construction, along with infrastructure updates.	2022-2030	Air quality, noise, safety, earth, water, biological and cultural resources, infrastructure, land use, and socioeconomics
Arkansas Department of Aeronautics (ADOA), 2036 Arkansas Statewide Airport System Plan Update (ADOA, 2021)	Two municipal airports (Bentonville and Melbourne) beneath/or immediately adjacent to the training military airspace are projected to move from Level 2 to Level 3 [(a)] due to projected use and expected growth. Bentonville has been included in the National Plan of Integrated Airport Systems and are eligible for FAA funding of improvements. Mena Intermountain Municipal, beneath the Hog MOA, would be elevated to Level 5 [(b)].	Completion by 2030	Airspace, air quality, noise, safety, earth, water, biological and cultural resources, infrastructure, land use, and socioeconomics
Arkansas Department of Transportation I-49 Extension I-40 to Arkansas Highway 22 (Trobaugh, 2022)	The new section of I-49 will be 13.6 miles long and cost an estimated $787 million. It would extend north from Arkansas Highway 22 near Barling in Sebastian County to the interchange of I-40 and I-49 at Alma in Crawford County.	Construction ongoing through 2030	Air quality, noise, earth, water, biological and cultural resources, infrastructure, land use, and socioeconomics
Predictable Environmental Trends			
Extreme Weather	Long-term environmental effects in the Southeast region that encompasses Arkansas may include an increase in days with heavy precipitation and flooding, warmer nights, an increase in ambient ozone concentrations, an increase in wildfires, and changes to ecosystems.		All resources
Population/Demographic Trends	This would include changes in population and demographics within the affected environment. Trends are detailed within Section 3.4, *Socioeconomics*. These may be the direct result of other reasonably foreseeable future actions identified (such as roadway improvements and housing construction).		Socioeconomics
Trends in Property Values	This would include changes in property values within the affected environment. Trends are detailed in Section 3.4, *Socioeconomics*.		Socioeconomics
Community Development Trends	Notwithstanding the reasonably foreseeable future actions identified above, this accounts for the overall trend of community development as represented by a combination of identified projects and those that may occur in the future that are not captured in this document (e.g., projects that may arise over time).		Natural resources, socioeconomics, air quality
Air Emissions Trends	This would include changes in air emissions that could result in an increase or reduction in criteria pollutant emissions within the affected environment. Trends are detailed in Section 3.8, *Air Quality*.		Air quality

Key: ADOA = Arkansas Department of Aeronautics; FAA = Federal Aviation Administration; I- = Interstate; IDP = Installation Development Plan; MOA = Military Operations Area; U.S. = United States

Notes:

a. Level 2 and Level 3 airports, according to the Worldwide Airport Slot Guidelines, are categorized based on the level of coordination needed to manage air traffic due to capacity and demand. Level 2 airports are "schedule-facilitated" where potential congestion is managed through voluntary cooperation between airlines and the airport. Level 3 airports, also known as "coordinated" airports, experience significant demand exceeding capacity, requiring mandatory slot allocation for all flights.

Table 3.1-3. Reasonably Foreseeable Future Actions and Environmental Trends

Aspect	Description	Timeframe	Resources Potentially Affected
Reasonably Foreseeable Future Actions			

b. Level 5 is the highest level of achievement within the Airport Carbon Accreditation program. It signifies a commitment to net-zero carbon emissions.

3.2 NOISE

Although degradation of the acoustic environment (noise) can affect several resource areas, this section focuses on potential noise effects on human annoyance, human health, and structures. Noise effects on biological resources (e.g., wildlife), cultural resources, land use and recreation, and socioeconomics are discussed in Section 3.6, *Biological Resources*, Section 3.5, *Cultural Resources*, Section 3.3, *Land Use*, and Section 3.4, *Socioeconomics*, respectively.

In accordance with DoD policy, multiple noise measurement metrics are used in this SEIS to describe the acoustic environment and predict noise effects. Noise metrics as well as methods used to calculate noise levels and assess potential noise effects in this SEIS are discussed in the 2023 FMS PTC EIS § 3.3 and described in greater detail in the 2023 FMS PTC EIS, Appendix C. The SEIS Appendix C, *Noise*, explains the updates in the noise analysis methods and input parameters used in this SEIS, which are summarized in the subsections below.

Analysis Methodology

The DAF modeled civilian aircraft noise levels near Ebbing ANG Base/FSRA using FAA's Aviation Environmental Design Tool (AEDT) for this SEIS. This analysis was conducted in conjunction with military aircraft noise modeling methods described in the 2023 FMS PTC EIS § 3.3.1.1 and reflects new operational scenarios for the Proposed Action and Alternative 1. Modeled military aircraft operational procedures and other operational parameters for the Proposed Action and Alternative 1 were defined according to inputs from pilots and other subject matter experts. Civilian aircraft operational data inputs were obtained from FSRA and FAA. Certain civilian operational modeling parameters were derived from radar data. No changes were made to modeled Ebbing ANG Base transient military aircraft operations. Modeling of these operations in the 2023 FMS PTC EIS remains representative of expected operations in CY 2029. Overall military and civilian aircraft noise exposure levels were summed using AEDT to yield overall noise exposure levels, which is consistent with the approach described in the 2023 FMS PTC EIS.

The number of permanent off-base residents that would be affected by elevated aviation noise based on the noise modeling results and were estimated using the U.S. Census Bureau's 2022 American Community Survey for the Proposed Action and Alternative 1, whereas estimates in the 2023 FMS PTC EIS were based on 2019 American Community Survey data. The methods used in this SEIS to estimate numbers of residents within noise contours is otherwise identical to the method described in the 2023 FMS PTC EIS § 3.3.1.1. Additionally, this SEIS assessed potential noise effects near Ebbing ANG Base/FSRA in the form of annoyance, speech interference, classroom interference, sleep disturbance, potential for hearing loss, workplace noise, nonauditory health, and structural damage using the same methods described in the 2023 FMS PTC EIS § 3.3.1.1.

This SEIS uses the same training airspace and range operations computer noise models as described in § 3.3.1.2 of the 2023 FMS PTC EIS with one exception. Between the time of publication of the 2023 FMS PTC FMS EIS and the current analysis, improvements have been made to the subsonic aircraft operations noise model Military Operating Area and Range Noise Model (MRNMAP) to improve accuracy (Downing & Page, 2023). The metrics used to describe noise levels and the methods used to assess effects associated with the calculated noise levels are the same as described in the 2023 FMS PTC FMS EIS § 3.3.1.2.

The 2023 FMS PTC EIS and the March 2023 ROD established a new baseline condition for Ebbing ANG Base/FSRA by authorizing the beddown of 12 F-16 and 24 F-35 aircraft, along with associated construction and FMS PTC training operations. As stated in Section 2.2, *No Action Alternative*, this is the No Action Alternative for the SEIS. (Note this is different from the No Action Alternative described in the 2023 FMS PTC EIS § 2.5, where the EIS analysis assessed the potential effects of not implementing the FMS PTC beddown at Ebbing ANG Base.) Since this SEIS is supplementing the 2023 FMS PTC EIS and ROD, the analyses of the Proposed Action and Alternative 1 are compared to the ROD-selected conditions assessed in the 2023 FMS PTC EIS, or this SEIS's No Action Alternative.

The DAF acknowledges there have been changes in existing conditions since the 2023 FMS PTC EIS was prepared and the ROD was signed in March 2023. Specifically, the number of projected civilian aircraft operations has decreased from what was presented in the 2023 FMS PTC EIS (Table 2.2-1). Noise contours modeled for airfield operations at FSRA are primarily influenced by military aircraft operations because they are louder than civilian aircraft. While civilian aircraft contribute to the overall acoustical environment around FSRA, it is only to a negligible extent in terms of day-night average sound level (DNL). To illustrate these changes, **Figure 3.2-1** depicts the distinction between noise exposures from civilian and military operations for the No Action Alternative to be consistent with the 2023 FMS PTC EIS. As shown on the map, the civilian-only contours are much smaller than the military contours of the same noise level. Additionally, when combining civilian aircraft with military aircraft, the resulting effect is negligible (less than 0.1 A-weighted decibels [dBA]) on the DNL contours (see insets A and B of the figure). Also, the changes occur at the airport where there are no sensitive receptors or people living. Although civilian aircraft operations are now forecasted to be lower than what was assessed in the 2023 FMS PTC EIS, the corresponding change in the combined DNL contours would not be discernible. Thus, since the resulting contours are effectively identical, comparing the Proposed Action and Alternative 1 to the ROD-selected conditions assessed in the 2023 FMS PTC EIS (i.e., No Action Alternative for this SEIS) provides a valid comparison of the analysis this SEIS is supplementing as a result of the proposed expansion of the FMS PTC at Ebbing ANG Base.

3.2.1 Affected Environment

The ROI for noise includes areas on and near Ebbing ANG Base/FSRA as well as areas beneath training airspace that would be affected by elevated noise levels associated with implementation of the Proposed Action and Alternatives. The acoustic environment within the ROI is described in the 2023 FMS PTC EIS § 3.3.2. Current conditions are described below for areas on and near Ebbing ANG Base/FSRA, as well as for areas beneath the airspace and ranges.

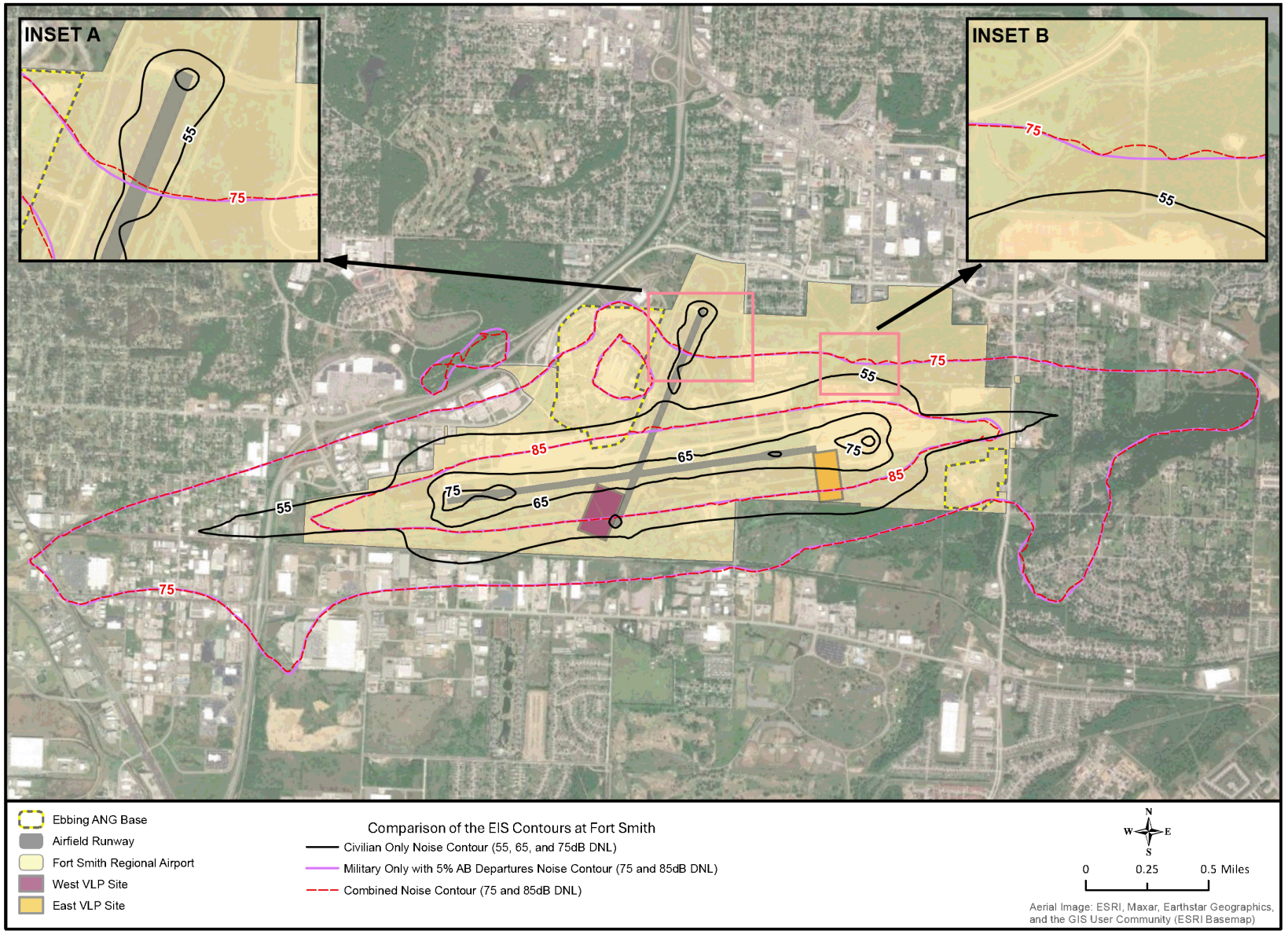


Figure 3.2-1. Comparison of the 2023 FMS PTC EIS Civilian and Military Aircraft Noise Contours

3.2.1.1 Installation and Surrounding Area

At the time of this analysis, aircraft operations and associated noise levels near Ebbing ANG Base/FSRA are changing. FMS PTC operations are expected to become increasingly common in coming months and years, as described in the 2023 FMS PTC EIS § 2.2. As the FMS PTC operations become more common, noise levels experienced near Ebbing ANG Base/FSRA will increase and are expected to reach noise levels described in the 2023 FMS PTC EIS § 3.3.5 by CY 2029. The FMS PTC operations will follow operational procedures which will reduce the overall number of off-base/FSRA acres exposed to DNL 65 dBA relative to unmitigated FMS PTC operations. Mitigation measures, which are described in the 2023 FMS PTC EIS § 3.3.5 and selected in the ROD include adjustments to aircraft arrival/departure routing to increase the distance between aircraft and noise-sensitive locations, adjustments to practice approach flight paths, limitation of afterburner departures to not more than 5% of total departures, and reduced-power departures. Civilian aircraft, transient military aircraft, and "Blue Air" (a civilian firm providing aircraft support to military training operations) will continue to occur and contribute to overall noise levels near Ebbing ANG Base/FSRA. An eastward extension of RWY 8-26 by 1,300 feet was completed in August 2023, which is reflected in noise levels calculated for the 2023 FMS PTC EIS. Under the ROD-selected mitigated Proposed Action scenario described in the 2023 FMS PTC EIS § 3.3.5, 6,436 off-airport acres and an estimated 9,427 residents would be exposed to noise levels exceeding DNL 65 dBA. Noise levels near Ebbing ANG Base/FSRA are expected to increase to these levels, as described for the 2023 FMS PTC EIS, by CY 2029.

As noted in the 2023 FMS PTC EIS § 3.3.2.1, nearby human activities are a primary factor in predicting ambient noise levels. Land use patterns near Ebbing ANG Base/FSRA have not changed substantively since the 2023 FMS PTC EIS, and ambient noise levels can also be assumed to have remained approximately the same.

3.2.1.2 Airspace and Ranges

At the time of this analysis, aircraft operations and associated noise in the airspace and ranges are changing and are expected to increase in coming months and years to levels described the 2023 FMS PTC EIS § 3.3.4.2. The 2023 FMS PTC EIS Figure 3.3-5 shows noise levels reflecting the currently approved FMS PTC operations tempo in the airspace. Time-averaged noise levels would range from less than onset rate-adjusted monthly day-night average sound level (L_{dnmr}) 45 dBA (DNL 45 dBA) up to L_{dnmr} 61.9 dBA (DNL 60.4 dBA). The highest number of events exceeding 85 dBA maximum noise level (L_{max}) would be 5.5 beneath R-2402B and also multiple MTRs.

Additionally, aircraft munitions training noise and supersonic noise levels are described in the 2023 FMS PTC FMS EIS § 3.3.4.2. Air-to-ground munitions use at Razorback Range would continue to generate peak noise levels at the closest noise-sensitive locations that are associated with a low risk of complaints (i.e., noise levels below 115 peak sound level). The closest noise-sensitive locations are residences located more than 2 miles north of the air-to-ground gunnery targets.

3.2.2 Environmental Consequences

Aircraft noise levels presented in this section reflect the maximum number of military and civilian aircraft operations, as shown in **Table 2.1-2**, from the base at any given time. Noise levels generated during construction associated with this SEIS would be like levels described in the 2023 FMS PTC EIS § 3.3.4. Construction noise may be disturbing in nearby areas of the base and would be like noise associated with other activities that occur on a military installation. Noise effects associated with personnel increases would be limited to on-base areas, which are not considered noise sensitive. Therefore, construction noise and increased personnel are not discussed further.

3.2.2.1 Proposed Action

Under the Proposed Action, the same FMS PTC aircraft types would be flown as were analyzed in the 2023 FMS PTC EIS, but the tempo of FMS PTC operations and other operational details would differ. Changes to FMS PTC operations that affect DNL under the Proposed Action include the following.

Operations tempo. The proposed net increase of 5,106 F-35 operations per year at Ebbing ANG Base/FSRA relative to the No Action Alternative would contribute modeled DNL increases. It is worth noting that the number of F-35A operations flown at Ebbing ANG Base/FSRA would decrease by 234 to 11,430 per year while the number of F-35B operations would increase by 5,340 to 7,680 operations per year (**Table 2.1-2**).

Late-night operations. The number of military operations conducted during the late-night period between 10:00 p.m. and 7:00 a.m., known as acoustic night, would decrease by 262 for a total of 756 military nighttime operations per year (**Table 2.1-7**). Because operations conducted in this time period are assessed by adding 10 decibels (dB) per operation in calculation of DNL, this net decrease results in DNL values being lower than they would otherwise be.

Afterburner use. As described in the 2023 FMS PTC EIS § 3.3.4.1, aircraft departures that make use of the afterburner generate a different signature from departures that do not. The afterburner generates an enormous amount of thrust, causing the aircraft to accelerate and gain altitude more quickly than departures that do not use the afterburner. In general, afterburner departures generate higher noise levels than non-afterburner departures in areas near the runway but generate lower noise levels than non-afterburner departures in areas further from the runway. Under the Proposed Action, restrictions on afterburner use by F-35 aircraft established in the 2023 FMS PTC EIS ROD (i.e., restriction to 5% of all F-35 aircraft departures) would be removed and 95% of all F-35 aircraft departures would be expected to use the afterburner. The proposed increase in afterburner use is one reason why noise levels under the Proposed Action would be higher than levels calculated in the 2023 FMS PTC EIS near the runway, but the same or lower in other locations.

F-35B STOVL operations. F-35B aircraft would conduct STOVL operations, which were not part of the action considered in the 2023 FMS PTC EIS. F-35B vertical landing operations would generate elevated noise levels near the VLP. Noise levels have been calculated for the West VLP and for the East VLP Subalternatives.

Flight procedure updates. F-35A, F-35B, and F-16 modeled flight profiles have been revised to reflect updated training requirements and to better represent procedures currently being flown. The effect of these changes on DNL is complex and contributes to DNL increasing in some locations and decreasing in other locations relative to 2023 FMS PTC EIS conditions. The updated flight procedures do not include reduced-power departures and modifications to flight paths that were included as noise mitigation measures in the 2023 FMS PTC EIS ROD. Details regarding flight procedures can be found in Appendix C, *Noise*.

Agile Combat Employment. As noted in Section 2.1.1, *Proposed Action, Aircraft Operations*, Agile Combat Employment is a new large force exercise since completion of the 2023 FMS PTC EIS, which is not a part of the SEIS Proposed Action but is included in the analysis. Although the exercise would involve operations by fighter aircraft and other aircraft types, the number of operations per year (576) is less than 1% of the total number of operations per year at Ebbing ANG Base/FSRA and is not a main contributor to modeled noise-level changes.

3.2.2.1.1 Installation and Surrounding Area

Changes to noise levels under the Proposed Action for several categories of potential noise effects are discussed below.

Annoyance and Land Use Compatibility

Operational changes under the Proposed Action would result in differences in time-averaged noise levels (DNL dBA) as shown in **Figure 3.2-2** and **Figure 3.2-3**. In most areas to the north and to the south of Ebbing ANG Base/FSRA, the DNL 65 dBA noise contour line would expand by approximately 0.25 to 0.5 miles compared to the DNL 65 dBA noise contour line for the No Action Alternative. Along the extended centerline of RWY 08/26 and in a small number of other locations, the DNL 65 dBA contour line would move closer to the airfield by as much as 1,100 feet.

Social surveys have consistently found that people exposed to higher DNL are more likely to be annoyed by noise than people exposed to lower DNL (Schultz, 1978; Finegold et al., 1994; Miedema & Vos, 1998). A recent nationwide survey conducted by FAA suggests that people are currently more likely to represent themselves as being highly annoyed than was indicated in older social surveys when exposed to the same aircraft DNL (FAA, 2024a). Noise levels greater than DNL 65 dBA are considered incompatible with noise-sensitive land uses, such as residential, in accordance with DoD and FAA guidelines.

Based on data used for military and civil aircraft operations and FAA criteria for evaluating and explaining the effects of aviation noise, there is potential for significant impacts to communities surrounding the Ebbing ANG Base/FSRA, including residences, schools, hospitals, parks, and recreation areas, that will be exposed to DNL 65 dBA or greater noise levels under the Proposed Action. Depending upon public review comments, the effects of aviation noise will be explained in more detail in the Final SEIS.

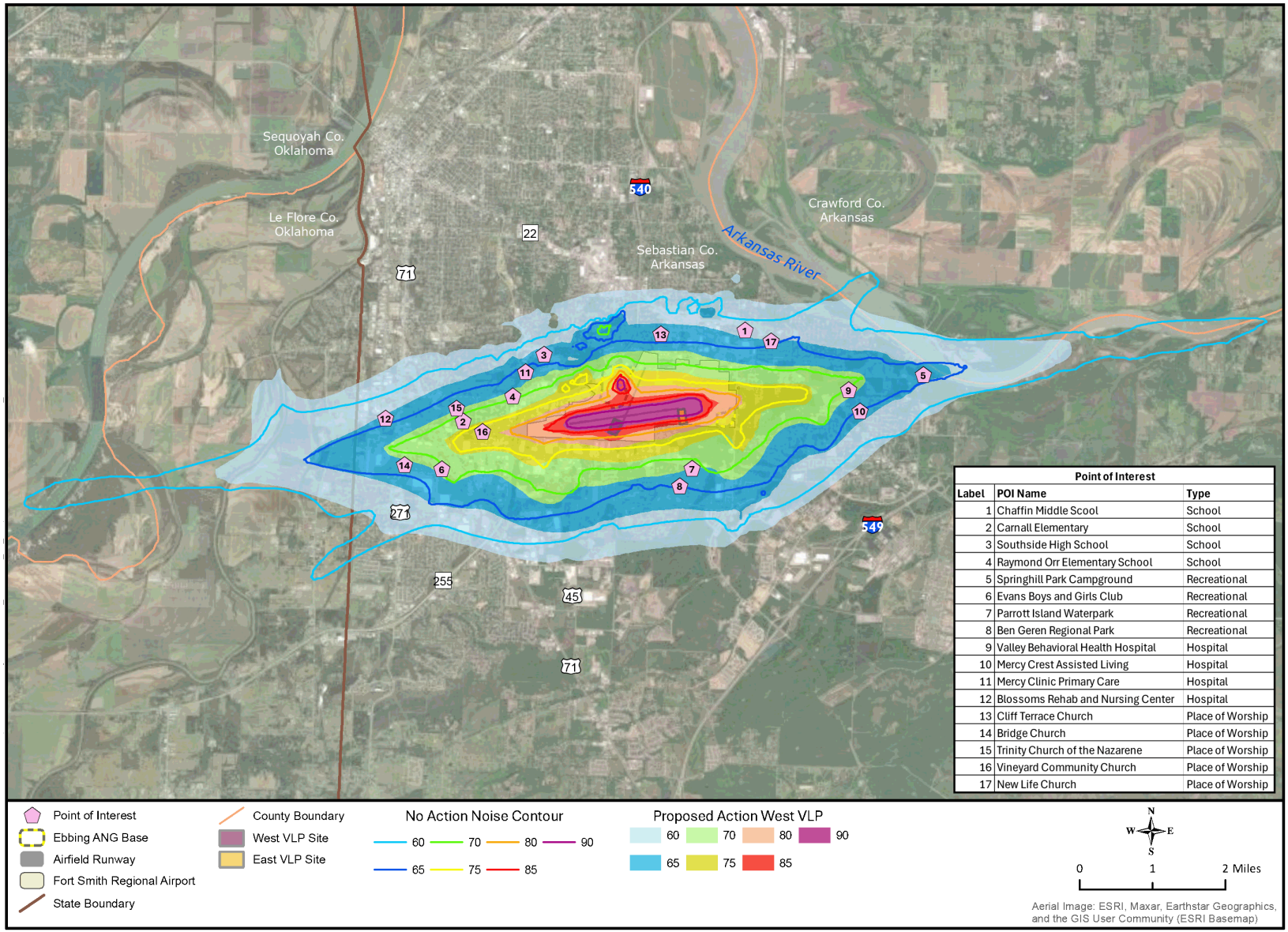


Figure 3.2-2. Noise Contours Under the Proposed Action (West VLP Site) and the No Action Alternative

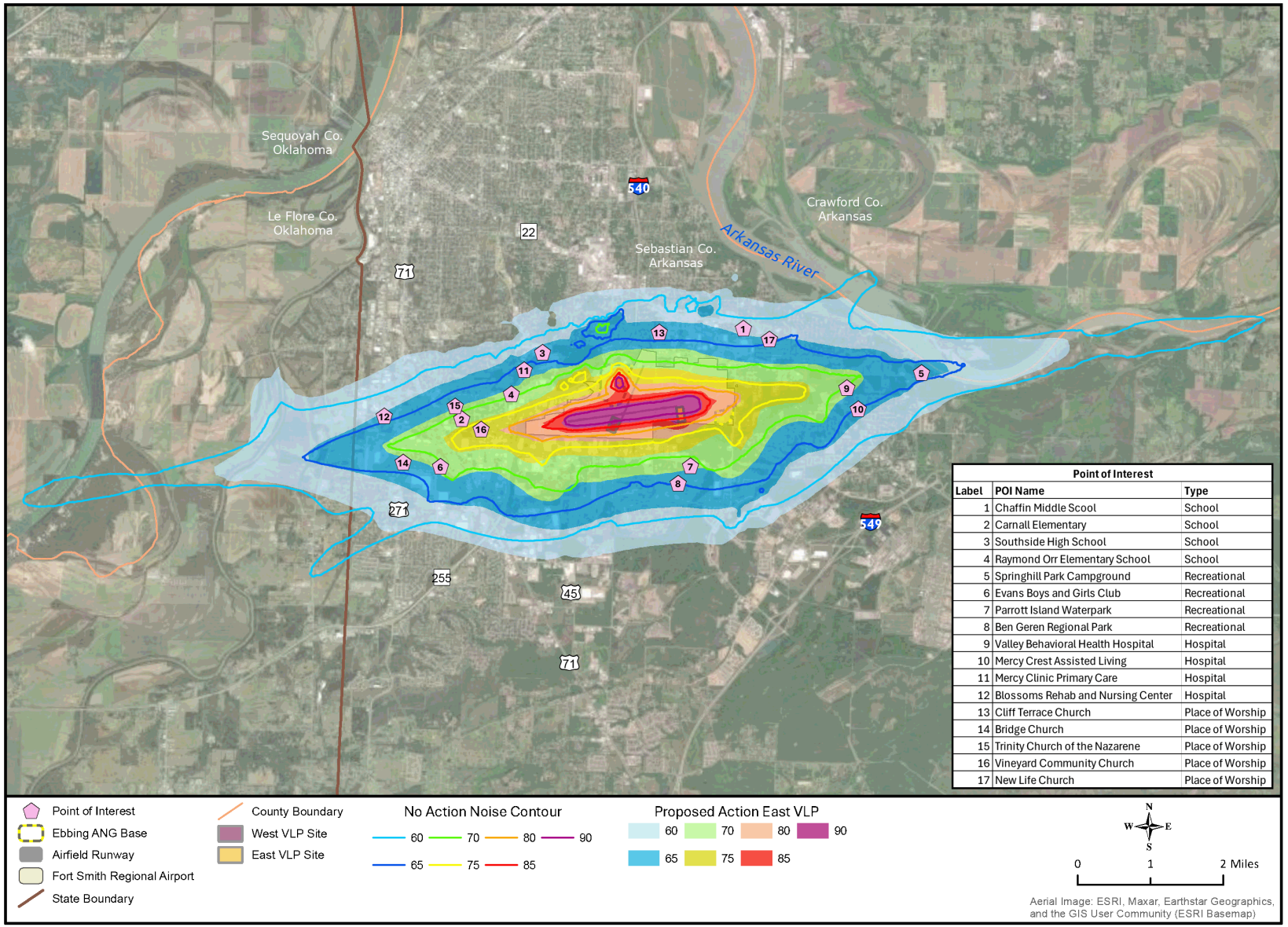


Figure 3.2-3. Noise Contours Under the Proposed Action (East VLP Site) and the No Action Alternative

Under the Proposed Action, the number of off-base/FSRA acres exposed to noise levels greater than DNL 65 dBA would be 1,764 higher (27%) under the West VLP Subalternative and 1,788 higher (28%) under the East VLP Subalternative compared to the No Action Alternative (**Table 3.2-1**).

Table 3.2-1. Off-Base/FSRA Acres at DNL 65 dBA or Greater Under the Proposed Action (West VLP and East VLP Options)

DNL (dBA)	No Action Alternative	Proposed Action			
		West VLP		East VLP	
	Acres	Acres	Change	Acres	Change
65–69	3,573	4,428	+855	4,434	+861
70–74	1,985	2,406	+421	2,412	+427
75–79	804	1,151	+347	1,163	+359
80–84	74	208	+134	188	+114
≥85	0	7	+7	27	+27
Total	**6,436**	**8,200**	**+1,764**	**8,224**	**+1,788**

Source: Data derived from noise analysis and GIS data (see **Figure 3.2-2** and **Figure 3.2-3**).
Key: ≥ = greater than or equal to; + = plus; dBA = A-weighted decibels; DNL = day-night average sound level; GIS = geographic information system; VLP = Vertical Landing Pad

The estimated number of people affected by noise levels greater than DNL 65 dBA under the Proposed Action West VLP and East VLP Subalternatives would be 15,876 and 15,920, respectively (**Table 3.2-2**). These estimated numbers of residents would be higher than the number estimated in the No Action Alternative by 6,449 and 6,493, respectively.

Table 3.2-2. Estimated Number of Residents Exposed to Noise Levels Greater Than DNL 65 dBA Under the Proposed Action (West VLP and East VLP Options)

DNL (dBA)	No Action Alternative	Proposed Action			
		West VLP		East VLP	
	Residents	Residents	Change	Residents	Change
65–69	6,521	10,912	+4,391	11,002	+4,481
70–74	2,389	4,113	+1,724	4,064	+1,675
75–79	517	851	+334	854	+337
80–84	0	0	0	0	0
≥85	0	0	0	0	0
Total	**9,427**	**15,876**	**+6,449**	**15,920**	**+6,493**

Source: Data derived from noise analysis and GIS data (see **Figure 3.2-2** and **Figure 3.2-3**).
Key: ≥ = greater than or equal to; + = plus; dBA = A-weighted decibels; DNL = day-night average sound level; GIS = geographic information system; VLP = Vertical Landing Pad

Table 3.2-3 presents DNL levels at the representative noise-sensitive locations shown in **Figure 3.2-2** and **Figure 3.2-3**. Noise-level differences would range from a decrease of DNL 0.4 dBA to an increase of 3.5 dBA under the Subalternatives. Changes in noise level would be considered significant, based on FAA significance criteria, at 10 locations where the noise level would exceed DNL 65 dBA and would increase by DNL 1.5 dBA or greater.

Table 3.2-3. DNL at Representative Noise-Sensitive Locations Under the Proposed Action (West VLP and East VLP Options)

Location Description	ID	No Action Alternative	Proposed Action			
			West VLP		East VLP	
			DNL (dBA)	Change	DNL (dBA)	Change
Chaffin Middle School	1	61.6	63.9	+2.3	64	+2.4
Carnall Elementary	2	71.8	73	+1.2	73	+1.2
Southside High School	3	62.8	**66.1**	**+3.3**	**66.1**	**+3.3**
Raymond Orr Elementary School	4	69.3	**71.1**	**+1.8**	**71.1**	**+1.8**
Springhill Park Campground	5	66.2	65.8	-0.4	65.8	-0.4
Evans Boys and Girls Club	6	69.6	71	+1.4	71	+1.4
Parrott Island Waterpark	7	68.3	**70.3**	**+2.0**	**70.7**	**+2.4**
Ben Geren Regional Park	8	65.1	**68**	**+2.9**	**68.2**	**+3.1**
Valley Behavioral Health Hospital	9	69.9	71.2	+1.3	71.2	+1.3
Mercy Crest Assisted Living	10	64.9	**66.7**	**+1.8**	**66.7**	**+1.8**
Mercy Clinic Primary Care	11	64.8	**67.3**	**+2.5**	**67.3**	**+2.5**
Blossoms Rehab and Nursing Center	12	63.7	**65.6**	**+1.9**	**65.6**	**+1.9**
Cliff Terrace Church	13	63.4	**66.8**	**+3.4**	**66.9**	**+3.5**
Bridge Church	14	67.1	**69**	**+1.9**	**69**	**+1.9**
Trinity Church of the Nazarene	15	67.9	**69.5**	**+1.6**	**69.5**	**+1.6**
Vineyard Community Church	16	77.7	78.9	+1.2	78.9	+1.2
New Life Church	17	63.9	65.2	+1.3	65.2	+1.3

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: + = plus; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; ID = identification number; VLP = Vertical Landing Pad
Note:
Bolded text refers to results that would be considered significant increases per FAA significance criteria where the noise level would exceed DNL 65 dBA and would increase by DNL 1.5 dBA or greater.

Speech Interference

The number of potential outdoor speech-interference events per average daytime hour would remain the same, increase by one, or decrease by one under the Proposed Action West VLP and East VLP Subalternatives (**Table 3.2-4**). Aircraft noise events that exceed 50 dBA, even momentarily, were assumed to interfere with speech for the purposes of this analysis.

Table 3.2-4. Number of Outdoor Speech-Interference Events per Average Daytime Hour Under the Proposed Action (West VLP and East VLP Options)

Location Description	ID	No Action Alternative	Proposed Action			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Chaffin Middle School	1	6	7	+1	7	+1
Carnall Elementary	2	6	7	+1	7	+1
Southside High School	3	7	7	0	7	0
Raymond Orr Elementary School	4	7	7	0	7	0
Springhill Park Campground	5	5	5	0	5	0
Evans Boys and Girls Club	6	6	6	0	6	0
Parrott Island Waterpark	7	7	7	0	7	0
Ben Geren Regional Park	8	7	7	0	7	0
Valley Behavioral Health Hospital	9	6	6	0	6	0
Mercy Crest Assisted Living	10	5	5	0	5	0
Mercy Clinic Primary Care	11	7	6	-1	5	-1
Blossoms Rehab and Nursing Center	12	5	5	0	5	0
Cliff Terrace Church	13	7	7	0	7	0
Bridge Church	14	5	6	+1	6	+1

Table 3.2-4. Number of Outdoor Speech-Interference Events per Average Daytime Hour Under the Proposed Action (West VLP and East VLP Options)

Location Description	ID	No Action Alternative	Proposed Action			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Trinity Church of the Nazarene	15	6	6	0	6	0
Vineyard Community Church	16	7	7	0	7	0
New Life Church	17	6	7	+1	7	+1

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: + = plus; ID = identification number; VLP = Vertical Landing Pad

Classroom Noise

Noise interference with learning in schools is of particular concern because noise can interrupt communication or interfere with concentration. At all four of the schools studied, exterior noise levels would continue to exceed 60 dBA 8-hour equivalent noise level ($L_{eq(8)}$) under the Proposed Action and would increase by up to 3 dBA $L_{eq(8)}$ (**Table 3.2-5**). These levels indicate that interior classroom noise levels likely exceed the 40 dBA $L_{eq(8)}$ maximum background noise level recommended for classrooms. As shown in **Table 3.2-6**, the number of noise events with potential to interfere with speech per average daytime hour would remain the same or increase by as much as one with windows open and with windows closed under the Proposed Action West VLP and East VLP Subalternatives.

Table 3.2-5. School Day Outdoor Equivalent Noise Levels Under the Proposed Action (West VLP and East VLP Options)

Location Description	ID	No Action Alternative	Proposed Action			
			West VLP		East VLP	
		$L_{eq(8hr)}$ (dBA)	$L_{eq(8hr)}$ (dBA)	Change	$L_{eq(8hr)}$ (dBA)	Change
Chaffin Middle School	1	63	65	+2	65	+2
Carnall Elementary	2	73	74	+1	74	+1
Southside High School	3	64	67	+3	67	+3
Raymond Orr Elementary School	4	70	72	+2	72	+2

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: + = plus; dBA = A-weighted decibels; ID = identification number; $L_{eq(8hr)}$ = 8-hour equivalent noise level; VLP = Vertical Landing Pad

Table 3.2-6. School Day Potential Speech Interference Events per Average Daytime Hour Under the Proposed Action (West VLP and East VLP Options)

Location Description	ID	No Action Alternative (Windows Open)	Proposed Action (Windows Open)			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Chaffin Middle School	1	3	4	+1	4	+1
Carnall Elementary	2	5	5	0	5	0
Southside High School	3	3	4	+1	4	+1
Raymond Orr Elementary School	4	4	5	+1	5	+1
Location Description	**ID**	**No Action Alternative (Windows Closed)**	**Proposed Action (Windows Closed)**			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Chaffin Middle School	1	2	3	+1	3	+1
Carnall Elementary	2	3	4	+1	4	+1

Table 3.2-6. School Day Potential Speech Interference Events per Average Daytime Hour Under the Proposed Action (West VLP and East VLP Options)

Location Description	ID	No Action Alternative (Windows Open)	Proposed Action (Windows Open)			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Southside High School	3	2	3	+1	3	+1
Raymond Orr Elementary School	4	3	4	+1	4	+1

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: + = plus; dBA = A-weighted decibels; ID = identification number; VLP = Vertical Landing Pad

Sleep Disturbance

The number of FMS PTC operations conducted during the late-night period between 10:00 p.m. and 7:00 a.m. per year would be 262 fewer under the Proposed Action (**Table 2.1-7**) than under the 2023 FMS PTC EIS. The probability of being awakened at least once per night would remain the same or decrease by up to 2% if windows are open at the locations studied (**Table 3.2-7**). If windows are closed, changes in the likelihood of awakening would range between a decrease of 1% to an increase of 1% as compared to the analysis results in the 2023 FMS PTC EIS, § 3.3.4.1.4, (**Table 3.2-8**). The analysis assumes standard building attenuation of 15 dB with windows open and 25 dB with windows closed. Sleep disturbance probabilities listed for parks and schools are indicative of effects in nearby residential areas and are not intended to imply that people regularly sleep in parks or schools.

Table 3.2-7. Percent of People Awakened by Aircraft Noise at Least Once per Night Under the Proposed Action (West VLP and East VLP Options) With Windows Open

Location Description	ID	No Action Alternative (Windows Open)	Proposed Action (Windows Open)			
			West VLP		East VLP	
		% Awakened	% Awakened	Change	% Awakened	Change
Chaffin Middle School	1	4%	4%	0	4%	0
Carnall Elementary	2	6%	5%	-1%	5%	-1%
Southside High School	3	4%	4%	0	4%	0
Raymond Orr Elementary School	4	5%	5%	0	5%	0
Springhill Park Campground	5	5%	4%	-1%	4%	-1%
Evans Boys and Girls Club	6	5%	5%	0	5%	0
Parrott Island Waterpark	7	5%	5%	0	5%	0
Ben Geren Regional Park	8	5%	4%	-1%	4%	-1%
Valley Behavioral Health Hospital	9	6%	5%	-1%	5%	-1%
Mercy Crest Assisted Living	10	4%	4%	0	4%	0
Mercy Clinic Primary Care	11	4%	4%	0	4%	0
Blossoms Rehab and Nursing Center	12	4%	4%	0	4%	0
Cliff Terrace Church	13	4%	4%	0	4%	0
Bridge Church	14	5%	4%	-1%	4%	-1%
Trinity Church of the Nazarene	15	5%	4%	-1%	4%	-1%
Vineyard Community Church	16	8%	6%	-2%	6%	-2%
New Life Church	17	4%	4%	0	4%	0

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: % = percent; - = minus; ID = identification number; VLP = Vertical Landing Pad

Table 3.2-8. Percent of People Awakened by Aircraft Noise at Least Once per Night Under the Proposed Action (West VLP and East VLP Options) With Windows Closed

Location Description	ID	No Action Alternative (Windows Closed)	Proposed Action (Windows Closed)			
			West VLP		East VLP	
		% Awakened	% Awakened	Change	% Awakened	Change
Chaffin Middle School	1	2%	2%	0	2%	0
Carnall Elementary	2	4%	3%	-1%	3%	-1%
Southside High School	3	2%	2%	0	2%	0
Raymond Orr Elementary School	4	3%	3%	0	3%	0
Springhill Park Campground	5	3%	2%	-1%	2%	-1%
Evans Boys and Girls Club	6	3%	3%	0	3%	0
Parrott Island Waterpark	7	3%	3%	0	3%	0
Ben Geren Regional Park	8	2%	3%	+1%	3%	+1%
Valley Behavioral Health Hospital	9	4%	3%	-1%	3%	-1%
Mercy Crest Assisted Living	10	3%	2%	-1%	2%	-1%
Mercy Clinic Primary Care	11	3%	2%	-1%	2%	-1%
Blossoms Rehab and Nursing Center	12	3%	2%	-1%	2%	-1%
Cliff Terrace Church	13	2%	2%	0	2%	0
Bridge Church	14	3%	3%	0	3%	0
Trinity Church of the Nazarene	15	3%	3%	0	3%	0
Vineyard Community Church	16	5%	4%	-1%	4%	-1%
New Life Church	17	3%	2%	-1%	2%	-1%

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: % = percent; - = minus; + = plus; ID = identification number; VLP = Vertical Landing Pad

Potential Hearing Loss

In accordance with DoD policy, which is described in the 2023 FMS PTC EIS § 3.3.1.1.5, the DNL 80 dBA noise contour was used to identify populations at the greatest risk of hearing loss resulting from exposure lasting 8 hours per day, 5 days per week and continuing for 40 years. Although off-base/FSRA land would be affected by greater than DNL 80 dBA, land use in these areas is not residential, but consists of Agricultural/Open Space/Vacant, Commercial, Industrial, Public/Quasi-Public, and Roadway/Infrastructure land uses. There would be no residents within the DNL 80 dBA contour under the Proposed Action (see **Table 3.2-2**) and potential hearing loss risk would be minimal.

Workplace Noise

Under the Proposed Action, workplace noise would be managed using the same programs and in accordance with the same regulations identified in the 2023 FMS PTC EIS. The DAF and FAA hearing conservation programs are designed to protect workers on Ebbing ANG Base/FSRA by identifying all areas where workers are exposed to hazardous noise and requiring hearing protection and monitoring as necessary to minimize hearing loss risk. Businesses outside of airport boundaries exposed to noise exceeding potentially hazardous levels would utilize existing workplace hearing conservation programs to identify and mitigate employee hearing loss risk. Customers at businesses exposed to noise levels exceeding DNL 80 dBA would not be expected to be exposed to these noise levels for sufficient time (8 hours per day, 5 days a week, for 40 years) to pose a risk of long-term hearing loss.

3.2.2.1.2 Airspace and Ranges

The number of annual airspace events in SUAs and on MTRs would increase under the Proposed Action by the amounts shown in **Table 2.1-4** and **Table 2.1-6**, respectively. Operational changes would also include changes to airspace usage patterns, such as the percent of total time spent training in various altitude bands. **Table 3.2-9** lists noise levels calculated for areas beneath primary training airspace SUAs, MTRs, and avoidance areas, as well as for areas where multiple training airspaces overlap. Changes in calculated noise levels reflect operational changes that would occur under the Proposed Action as well as improvements to the model MRNMAP that have been made since the 2023 FMS PTC EIS and corrections to certain noise model input parameters (details of the model improvements and input corrections can be found in Appendix C, *Noise*). The locations of airspace units are shown in **Figure 2.1-2**. Differences in subsonic time-averaged noise level (i.e., L_{dnmr} dBA) under the Proposed Action relative to the 2023 FMS PTC EIS § 3.3.4.2 would range from a decrease of L_{dnmr} 6.3 dBA to an increase of L_{dnmr} 2.5 dBA (decrease of DNL 6 dBA to an increase of DNL 0.3 dBA) beneath SUA and would range from a decrease of L_{dnmr} 3.5 dBA to an increase of L_{dnmr} 3.1 dBA (decrease of DNL 0.6 dBA to an increase of DNL 3 dBA) beneath MTRs. Time-averaged noise levels would remain below DNL 65 dBA, and noise effects beneath Ebbing ANG Base training airspace would not be classified as significant. Changes in numbers of events exceeding 85 dBA L_{max} per average day would range from a decrease of 5.5 events to an increase of 0.4 events beneath SUA and would remain the same or increase by up to 0.3 events beneath MTRs (**Table 3.2-10**).

Table 3.2-9. Airspace Noise Levels (L_{dnmr} [DNL] dBA) Under the Proposed Action

Area Category	Airspace Description	No Action Alternative	Proposed Action	Change
		L_{dnmr} (DNL)	L_{dnmr} (DNL)	L_{dnmr} (DNL)
SUAs (and overlapping airspaces)	Hog A MOA	57.2 (55.9)	55 (53.9)	-2.2 (-2)
	Hog A MOA and MTRs	61.2 (58.8)	61 (58.2)	-0.2 (-0.6)
	Hog B MOA (eastern portion)	57.1 (55.8)	55.2 (53.8)	-1.9 (-2.0)
	Hog B MOA (eastern portion) and MTRs	58.9 (57)	57.7 (55.5)	-1.2 (-1.5)
	Hog B MOA (western portion)	48.2 (48.2)	45.6 (45.6)	-2.6 (-2.6)
	Hog B MOA (western portion) and MTRs	54.3 (52)	54.9 (52)	0.6 (0)
	R-2401A	57.5 (57)	60 (57.3)	2.5 (0.3)
	R-2401B	54.9 (50.4)	54.9 (50.4)	0 (0)
	R-2402A	59.7 (58.8)	61.4 (59)	1.7 (0.2)
	R-2402 and MTRs	61.1 (59.6)	62.5 (59.7)	1.4 (0.1)
	R-2402B	57.2 (56.8)	50.9 (50.9)	-6.3 (-5.9)
	R-2402B and MTRs	61.9 (60.4)	60.2 (58)	-1.7 (-2.4)
	R-2402B and Hog A MOA	60.1 (59.3)	56.3 (55.4)	-3.8 (-3.9)
	R-2402C	57.1 (56.8)	50.8 (50.8)	-6.3 (-6)
	Shirley A MOA	<45 (<45)	<45 (<45)	0 (0)
	Shirley A MOA and MTRs	50.5 (48.5)	51.2 (48.5)	0.7 (0)
	Shirley B MOA	<45 (<45)	<45 (<45)	0 (0)
	Shirley C MOA	<45 (<45)	<45 (<45)	0 (0)
MTRs (portions outside of SUA)	VR-189	53 (49.7)	54.4 (50.9)	1.4 (1.2)
	VR-1102	<45 (<45)	<45 (<45)	0 (0)
	VR-1103	50.3 (47.1)	53 (49.6)	2.7 (2.5)
	VR-1104	48.8 (45.6)	48.1 (<45)	-0.7 (-0.6)
	VR-1113	53.4 (49.7)	56.5 (52.7)	3.1 (3.0)
	VR-1130	50.5 (46.9)	47 (46.9)	-3.5 (0)
	IR-117	52.9 (49.6)	55.7 (52.2)	2.8 (2.6)
	IR-120	46.1 (45.1)	48 (<45)	1.9 (-0.1)

Table 3.2-9. Airspace Noise Levels (L_{dnmr} [DNL] dBA) Under the Proposed Action

Area Category	Airspace Description	No Action Alternative	Proposed Action	Change
		L_{dnmr} (DNL)	L_{dnmr} (DNL)	L_{dnmr} (DNL)
	IR-121	50.1 (47.5)	52.9 (50)	2.8 (2.5)
	IR-164	54.3 (48.3)	53.7 (49.9)	-0.6 (1.6)
	IR-117 and VR-1113	56.2 (52.7)	59.1 (55.5)	2.9 (2.8)
	IR-120 and VR-1102	47.2 (<45)	48.7 (45.7)	1.5 (1.3)
	IR-121 and VR-1103	53.2 (50.3)	56 (52.8)	2.8 (2.5)
	IR-164 and VR-1104	53.8 (49.5)	54.8 (51)	1 (1.5)
Avoidance Areas	Bearce	49.8 (49.8)	51.1 (49.4)	1.3 (-0.4)
	Booneville	50.8 (50.8)	48.6 (48.6)	-2.2 (-2.2)
	Waldron	51.1 (51)	49.3 (49)	-1.8 (-2)

Key: < = less than; - = minus; dBA = A-weighted decibels; DNL = day-night average sound level; EIS = Environmental Impact Statement; FMS = Foreign Military Sales; IR = Instrument Route; L_{dnmr} = onset rate-adjusted monthly day-night average sound level; MOA = Military Operations Area; MTR = Military Training Route; PTC = Pilot Training Center; R- = Restricted Area; ROD = Record of Decision; SUA = Special Use Airspace; VR =Visual Route

Note: FAA evaluates airspace noise using the DNL metric.

Table 3.2-10. Average Number of Events Exceeding 85 dBA L_{max} per Day Under the Proposed Action

Area Category	Airspace Description	No Action Alternative	Proposed Action	Change
SUAs (and overlapping airspaces)	Hog A MOA	1.5	0.6	-0.9
	Hog A MOA and MTRs	1.5	1.2	-0.3
	Hog B MOA (eastern portion)	1.3	0.6	-0.7
	Hog B MOA (eastern portion) and MTRs	1.3	0.7	-0.6
	Hog B MOA (western portion)	1.2	0.4	-0.8
	Hog B MOA (western portion) and MTRs	1.2	0.5	-0.7
	R-2401A	1.9	1.8	-0.1
	R-2401B	0.3	0.7	0.4
	R-2402A	4.7	3.1	-1.6
	R-2402 and MTRs	5.8	3.6	-2.2
	R-2402B	4.2	0	-4.2
	R-2402B and MTRs	5.5	0.5	-5
	R-2402B and Hog A MOA	5.5	0	-5.5
	R-2402C	4.1	0	-4.1
	Shirley A MOA	0.3	0	-0.3
	Shirley A MOA and MTRs	0.3	0	-0.3
	Shirley B MOA	0.3	0	-0.3
	Shirley C MOA	0.3	0	-0.3
MTRs (portions outside of SUA)	VR-189	0	0.1	0.1
	VR-1102	0	0	0
	VR-1103	0	0	0
	VR-1104	0	0	0
	VR-1113	0	0.1	0.1
	VR-1130	0	0.1	0.1
	IR-117	0	0.2	0.2
	IR-120	0	0	0
	IR-121	0	0.1	0.1
	IR-164	0	0	0
	IR-117 and VR-1113	0	0.3	0.3
	IR-120 and VR-1102	0	0	0
	IR-121 and VR-1103	0	0.1	0.1
	IR-164 and VR-1104	0	0	0

Table 3.2-10. Average Number of Events Exceeding 85 dBA L_{max} per Day Under the Proposed Action

Area Category	Airspace Description	No Action Alternative	Proposed Action	Change
Avoidance Areas	Bearce	0	0	0
	Booneville	1.2	0	-1.2
	Waldron	1.2	0	-1.2

Key: - = minus; dBA = A-weighted decibels; ID = identification number; IR = Instrument Route; L_{max} = maximum noise level; MOA = Military Operations Area; MTR = Military Training Route; R- = Restricted Area; SUA = Special Use Airspace; VR =Visual Route

Supersonic operations would continue to be restricted to altitudes above 30,000 feet MSL and would occur in the same airspace units analyzed in the 2023 FMS PTC EIS. Updated information from operational points of contact indicates that there would be fewer supersonic flight segments per sortie on average than was analyzed in the 2023 FMS PTC EIS. This change would result in slightly fewer sonic booms affecting the ground and slightly lower time-average supersonic noise levels despite the 13% increase in FMS PTC sorties flown in SUAs under the Proposed Action. Time-averaged noise levels would remain below C-weighted DNL 45 dB, and effects would continue to be minimal.

The number of munitions used annually by FMS PTC aircraft would increase compared to the No Action Alternative, as described in **Table 2.1-8**. Razorback Range continues to not allow use of high-explosive munitions. Munitions would generate noise levels below 115 peak sound level, which are associated with a low likelihood of complaints, at the closest noise-sensitive locations to Razorback Range.

3.2.2.2 Alternative 1

3.2.2.2.1 Installation and Surrounding Area

Under Alternative 1, the aircraft types and overall operational tempo would be the same as were analyzed in the 2023 FMS PTC EIS (see Section 2.3, *Alternative 1*), but the other changes to FMS PTC operations under the Proposed Action would also occur under Alternative 1. These other changes and their general effect on time-averaged noise levels are described in Section 3.2.2.1, *Proposed Action*. Changes to noise levels under Alternative 1 are discussed below for several categories of potential noise effects.

Annoyance and Land Use Compatibility

Time-averaged noise levels (DNL dBA) under the Alternative 1 West VLP and East VLP Subalternatives are shown in **Figure 3.2-4** and **Figure 3.2-5**, respectively. In most areas to the north and to the south of Ebbing ANG Base/FSRA, the DNL 65 dBA noise contour line would expand relative to the No Action Alternative. Along the extended centerline of RWY 08/26 and in a small number of other locations, the DNL 65 dBA contour line would contract slightly relative to the No Action Alternative.

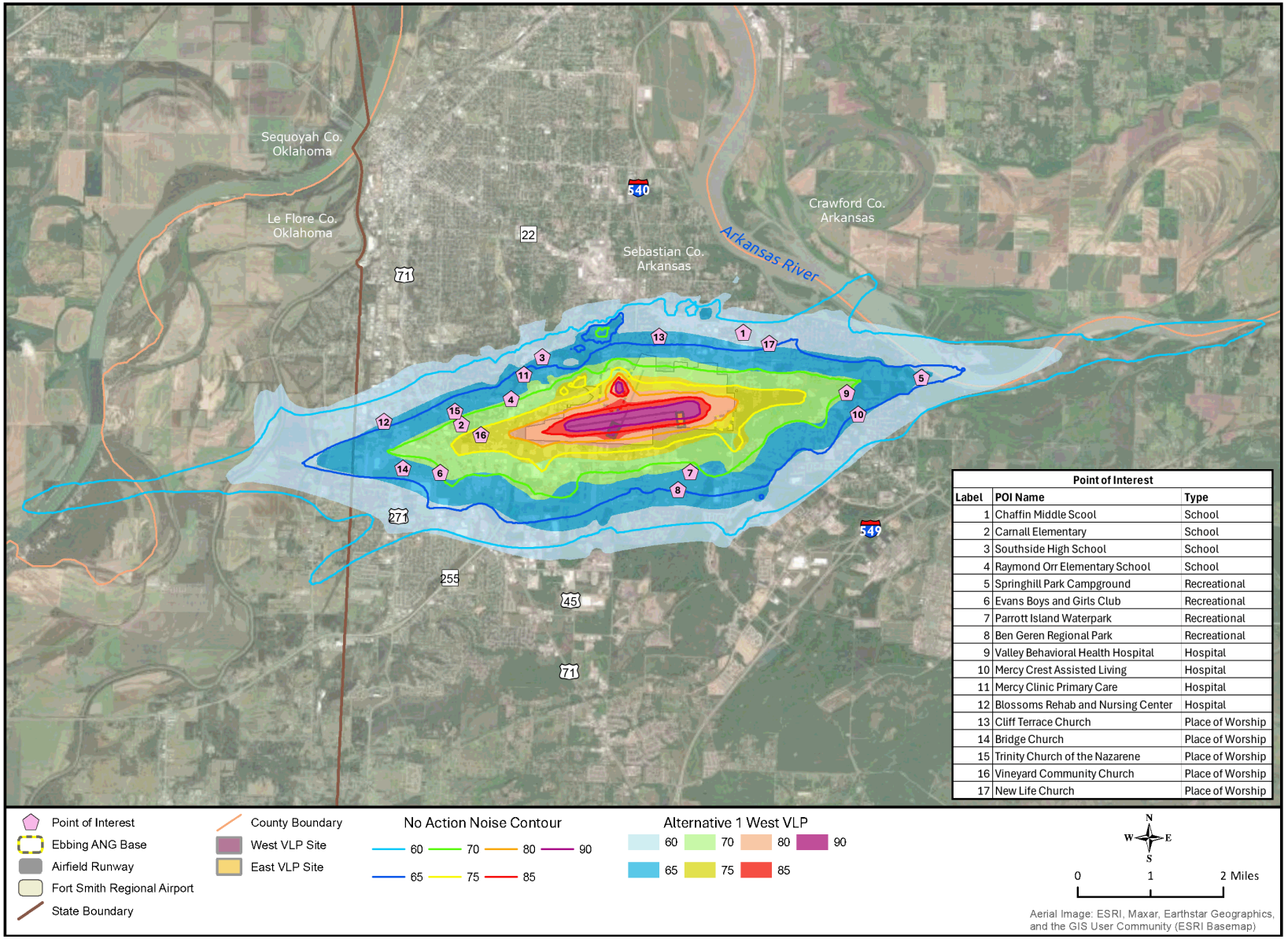


Figure 3.2-4. Noise Contours Under Alternative 1 (West VLP Subalternative) and the No Action Alternative

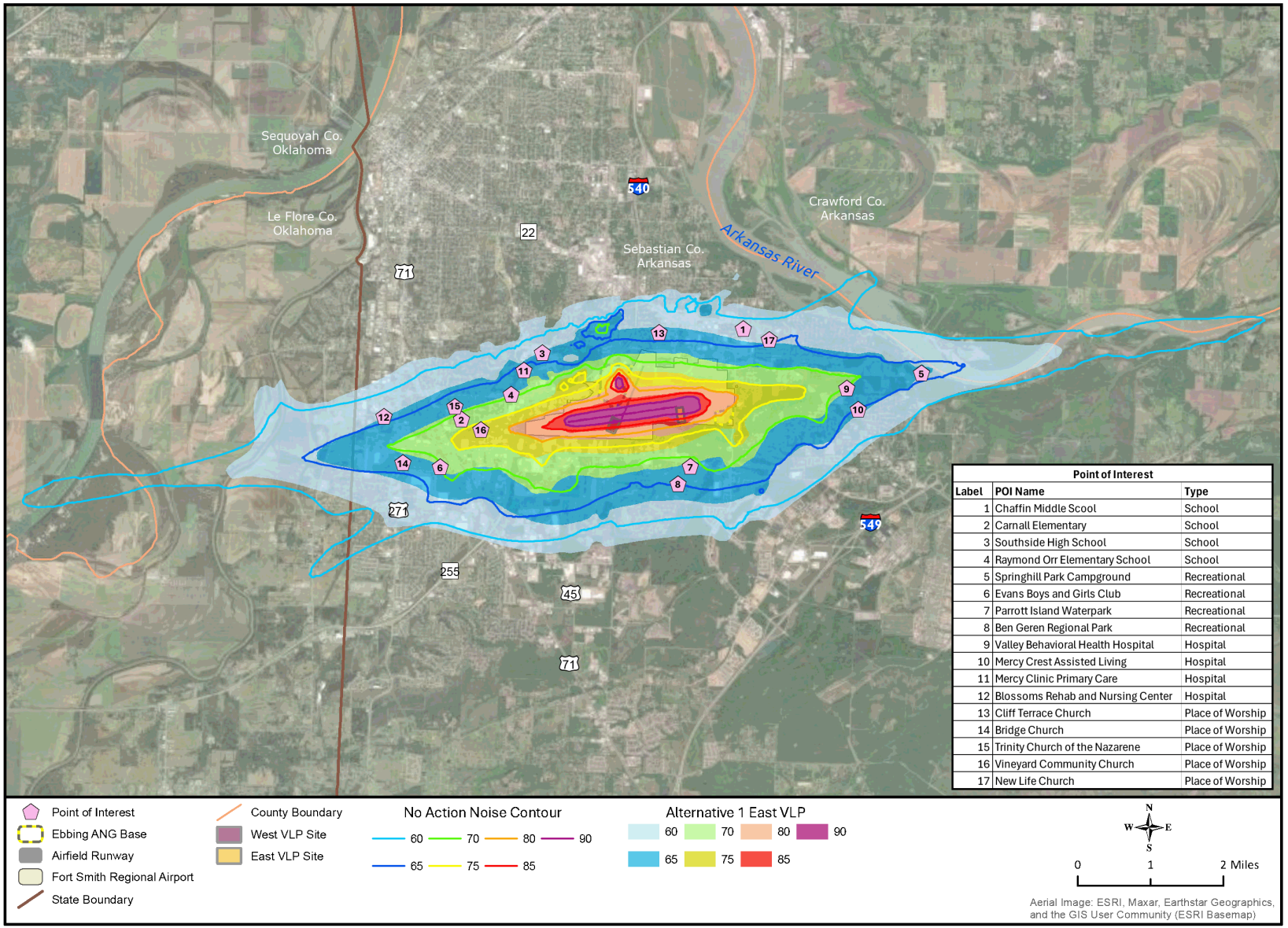


Figure 3.2-5. Noise Contours Under Alternative 1 (East VLP Subalternative) and the No Action Alternative

Based on the findings of several social surveys, people would be more likely to be annoyed by aircraft noise in areas with increased DNL (see Section 3.2.2.1.1, *Installation and Surrounding Area,* and the 2023 FMS PTC EIS, Appendix C, § C.1.2.1 for more details). At noise levels greater than DNL 65 dBA, noise-sensitive land uses, such as residential, are not considered compatible in accordance with DoD and FAA guidelines.

The number of off-base/FSRA acres exposed to noise levels greater than DNL 65 dBA would increase by 863 (13%) under the West VLP Subalternative and by 870 (14%) under the East VLP Subalternative compared to the No Action Alternative (**Table 3.2-11**).

Table 3.2-11. Off-Base/FSRA Acres at DNL 65 dBA or Greater Under Alternative 1 (West VLP and East VLP Subalternatives)

DNL (dBA)	No Action Alternative	Alternative 1			
		West VLP		East VLP	
	Acres	Acres	Change	Acres	Change
65–69	3,573	4,119	+546	4,116	+543
70–74	1,985	2,120	+135	2,124	+139
75–79	804	938	+134	941	+137
80–84	74	119	+45	111	+37
≥85	0	3	+3	14	+14
Total	**6,436**	**7,299**	**+863**	**7,306**	**+870**

Source: Data derived from noise analysis and GIS data (see **Figure 3.2-4** and **Figure 3.2-5**).
Key: ≥ = greater than or equal to; dBA = dBA = A-weighted decibels; DNL = day-night average sound level; GIS = geographic information system; VLP = Vertical Landing Pad

Under Alternative 1 West VLP and East VLP Subalternatives, the estimated number of people affected by noise levels greater than DNL 65 dBA would be 13,873 and 13,853, respectively (**Table 3.2-12**). These estimated numbers of residents would be higher than the No Action Alternative by 4,410 and 4,426, respectively.

Table 3.2-12. Estimated Number of Residents Exposed to Noise Levels Greater Than DNL 65 dBA Under Alternative 1 (West VLP and East VLP Subalternatives)

DNL (dBA)	No Action Alternative	Alternative 1			
		West VLP		East VLP	
	Residents	Residents	Change	Residents	Change
65–69	6,521	9,971	+3,450	10,010	+3,489
70–74	2,389	3,297	+908	3,267	+878
75–79	517	569	+52	576	+59
80–84	0	0	0	0	0
≥85	0	0	0	0	0
Total	**9,427**	**13,837**	**+4,410**	**13,853**	**+4,426**

Source: Data derived from noise analysis and GIS data (see **Figure 3.2-4** and **Figure 3.2-5**).
Key: ≥ = greater than or equal to; + = plus; dBA = dBA = A-weighted decibels; DNL = day-night average sound level; GIS = geographic information system; VLP = Vertical Landing Pad

Table 3.2-12 presents noise-level differences at the representative noise-sensitive locations shown in **Figure 3.2-4**, which would range from a decrease of DNL 1 dBA to an increase of DNL 3 dBA under the Alternative 1 Subalternatives. Changes in noise levels that both exceed DNL 65 dBA and increase by at least 1.5 dBA are considered significant. These conditions would be met at four of the representative locations under both Alternative 1 VLP Site Subalternatives.

Table 3.2-13. DNL at Representative Noise-Sensitive Locations Under Alternative 1 (West VLP and East VLP Subalternatives)

Location Description	ID	No Action Alternative	Proposed Action			
			West VLP		East VLP	
			DNL	Change	DNL	Change
Chaffin Middle School	1	61.6	63	+1.4	63	+1.4
Carnall Elementary	2	71.8	72.1	+0.3	72.1	+0.3
Southside High School	3	62.8	**65.2**	**+2.4**	**65.2**	**+2.4**
Raymond Orr Elementary School	4	69.3	70.2	+0.9	70.2	+0.9
Springhill Park Campground	5	66.2	65.2	-1.0	65.2	-1.0
Evans Boys and Girls Club	6	69.6	70	+0.4	70	+0.4
Parrott Island Waterpark	7	68.3	69.3	+1.0	69.5	+1.2
Ben Geren Regional Park	8	65.1	**67**	**+1.9**	**67.1**	**+2.0**
Valley Behavioral Health Hospital	9	69.9	70.4	+0.5	70.4	+0.5
Mercy Crest Assisted Living	10	64.9	66	+1.1	66	+1.1
Mercy Clinic Primary Care	11	64.8	**66.5**	**+1.7**	**66.5**	**+1.7**
Blossoms Rehab and Nursing Center	12	63.7	64.8	+1.1	64.8	+1.1
Cliff Terrace Church	13	63.4	**66.0**	**+2.6**	**66.0**	**+2.6**
Bridge Church	14	67.1	68.2	+1.1	68.2	+1.1
Trinity Church of the Nazarene	15	67.9	68.6	+0.7	68.6	+0.7
Vineyard Community Church	16	77.7	77.9	+0.2	77.9	+0.2
New Life Church	17	63.9	64.3	+0.4	64.3	+0.4

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: + = plus; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; ID = identification number; VLP = Vertical Landing Pad
Note:
Bolded text refers to results that would be considered significant increases per FAA significance criteria where the noise level would exceed DNL 65 dBA and would increase by DNL 1.5 dBA or greater.

Speech Interference

As shown in **Table 3.2-14**, the number of potential outdoor speech-interference events per average daytime hour would remain the same or decrease by as much as two under the Alternative 1 Subalternatives. Speech interference was assumed to occur, at least momentarily, for any aircraft noise event that would exceed 50 dBA L_{max}.

Table 3.2-14. Number of Outdoor Speech-Interference Events per Average Daytime Hour Under Alternative 1 (West VLP and East VLP Subalternatives)

Location Description	ID	No Action Alternative	Alternative 1			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Chaffin Middle School	1	6	6	0	6	0
Carnall Elementary	2	6	6	0	6	0
Southside High School	3	7	6	-1	6	-1
Raymond Orr Elementary School	4	7	6	-1	6	-1
Springhill Park Campground	5	5	4	-1	4	-1
Evans Boys and Girls Club	6	6	5	-1	5	-1
Parrott Island Waterpark	7	7	6	-1	6	-1
Ben Geren Regional Park	8	7	6	-1	6	-1
Valley Behavioral Health Hospital	9	6	5	-1	5	-1
Mercy Crest Assisted Living	10	5	5	0	5	0
Mercy Clinic Primary Care	11	7	5	-2	5	-2
Blossoms Rehab and Nursing Center	12	5	5	0	5	0
Cliff Terrace Church	13	7	6	-1	6	-1
Bridge Church	14	5	5	0	5	0

Table 3.2-14. Number of Outdoor Speech-Interference Events per Average Daytime Hour Under Alternative 1 (West VLP and East VLP Subalternatives)

Location Description	ID	No Action Alternative	Alternative 1			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Trinity Church of the Nazarene	15	6	6	0	6	0
Vineyard Community Church	16	7	6	-1	6	-1
New Life Church	17	6	6	0	6	0

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: + = plus; ID = identification number; VLP = Vertical Landing Pad

Classroom Noise

Exterior noise levels would continue to exceed 60 dBA $L_{eq(8)}$ at all four of the schools studied under Alternative 1, and would remain the same or increase by up to 2 dBA $L_{eq(8)}$ relative to the No Action Alternative (**Table 3.2-15**). These exterior noise levels indicate that interior classroom noise levels would likely exceed the 40 dBA $L_{eq(8)}$ maximum background noise level recommended for classrooms. Under the Alternative 1 Subalternatives, the number of indoor noise events with potential to interfere with speech per average daytime hour would remain the same or decrease by as much as one with windows open; if windows are closed, the number of events would remain the same or increase by as much as one (**Table 3.2-16**).

Table 3.2-15. School Day Outdoor Equivalent Noise Levels Under Alternative 1 (West VLP and East VLP Subalternatives)

Location Description	ID	No Action Alternative	Alternative 1			
			West VLP		East VLP	
		$L_{eq(8hr)}$ (dB)	$L_{eq(8hr)}$ (dB)	Change	$L_{eq(8hr)}$ (dB)	Change
Chaffin Middle School	1	63	64	+1	64	+1
Carnall Elementary	2	73	73	0	73	0
Southside High School	3	64	66	+2	66	+2
Raymond Orr Elementary School	4	70	71	+1	71	+1

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: + = plus; dB = decibels; ID = identification number; $L_{eq(8hr)}$ = 8-hour equivalent noise level; VLP = Vertical Landing Pad

Table 3.2-16. School Day Potential Speech Interference Events per Average Daytime Hour Under Alternative 1 (West VLP and East VLP Subalternatives)

Location Description	ID	No Action Alternative (Windows Open)	Alternative 1 (Windows Open)			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Chaffin Middle School	1	3	3	0	3	0
Carnall Elementary	2	5	4	-1	4	-1
Southside High School	3	3	3	0	3	0
Raymond Orr Elementary School	4	4	4	0	4	0
Location Description	**ID**	**No Action Alternative (Windows Closed)**	**Alternative 1 (Windows Closed)**			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Chaffin Middle School	1	2	3	+1	3	+1
Carnall Elementary	2	3	3	0	3	0

Table 3.2-16. School Day Potential Speech Interference Events per Average Daytime Hour Under Alternative 1 (West VLP and East VLP Subalternatives)

Location Description	ID	No Action Alternative (Windows Open)	Alternative 1 (Windows Open)			
			West VLP		East VLP	
		Events	Events	Change	Events	Change
Chaffin Middle School	1	3	3	0	3	0
Southside High School	3	2	3	+1	3	+1
Raymond Orr Elementary School	4	3	3	0	3	0

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: - = minus;+ = plus; dB = decibels; ID = identification number; VLP = Vertical Landing Pad

Sleep Disturbance

Under Alternative 1, the number of FMS PTC operations per year conducted between 10:00 p.m. and 7:00 a.m. would be lower than under the No Action Alternative. At the representative locations studied, the probability of being awakened at least once per night would remain the same or decrease relative to the No Action Alternative (**Table 3.2-17** and **Table 3.2-18**).

Table 3.2-17. Percent of People Awakened by Aircraft Noise at Least Once per Night Under Alternative 1 (West VLP and East VLP Subalternatives) With Windows Open

Location Description	ID	No Action Alternative (Windows Open)	Alternative 1 (Windows Open)			
			West VLP		East VLP	
		% Awakened	% Awakened	Change	% Awakened	Change
Chaffin Middle School	1	4%	3%	-1%	3%	-1%
Carnall Elementary	2	6%	5%	-1%	5%	-1%
Southside High School	3	4%	3%	-1%	3%	-1%
Raymond Orr Elementary School	4	5%	4%	-1%	4%	-1%
Springhill Park Campground	5	5%	3%	-2%	3%	-2%
Evans Boys and Girls Club	6	5%	4%	-1%	4%	-1%
Parrott Island Waterpark	7	5%	4%	-1%	4%	-1%
Ben Geren Regional Park	8	5%	4%	-1%	4%	-1%
Valley Behavioral Health Hospital	9	6%	4%	-2%	4%	-2%
Mercy Crest Assisted Living	10	4%	3%	-1%	3%	-1%
Mercy Clinic Primary Care	11	4%	3%	-1%	3%	-1%
Blossoms Rehab and Nursing Center	12	4%	3%	-1%	3%	-1%
Cliff Terrace Church	13	4%	4%	0	4%	0
Bridge Church	14	5%	4%	-1%	4%	-1%
Trinity Church of the Nazarene	15	5%	4%	-1%	4%	-1%
Vineyard Community Church	16	8%	6%	-2%	6%	-2%
New Life Church	17	4%	3%	-1%	3%	-1%

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: % = percent; - = minus; + = plus; ID = identification number; VLP = Vertical Landing Pad

Table 3.2-18. Percent of People Awakened by Aircraft Noise at Least Once per Night Under Alternative 1 (West VLP and East VLP Subalternatives) With Windows Closed

Location Description	ID	No Action Alternative (Windows Closed)	Alternative 1 (Windows Closed)			
			West VLP		East VLP	
		% Awakened	% Awakened	Change	% Awakened	Change
Chaffin Middle School	1	2%	2%	0	2%	0
Carnall Elementary	2	4%	3%	-1%	3%	-1%
Southside High School	3	2%	2%	0	2%	0
Raymond Orr Elementary School	4	3%	3%	0	3%	0
Springhill Park Campground	5	3%	2%	-1%	2%	-1%
Evans Boys and Girls Club	6	3%	3%	0	3%	0
Parrott Island Waterpark	7	3%	3%	0	3%	0
Ben Geren Regional Park	8	2%	2%	0	2%	0
Valley Behavioral Health Hospital	9	4%	3%	-1%	3%	-1%
Mercy Crest Assisted Living	10	3%	2%	-1%	2%	-1%
Mercy Clinic Primary Care	11	3%	2%	-1%	2%	-1%
Blossoms Rehab and Nursing Center	12	3%	2%	-1%	2%	-1%
Cliff Terrace Church	13	2%	2%	0	2%	0
Bridge Church	14	3%	2%	-1%	2%	-1%
Trinity Church of the Nazarene	15	3%	2%	-1%	2%	-1%
Vineyard Community Church	16	5%	4%	-1%	4%	-1%
New Life Church	17	3%	2%	-1%	2%	-1%

Source: Appendix C.2, *Noise Technical Report on the SEIS for Beddown of FMS PTC at Ebbing ANG Base, Arkansas*
Key: % = percent; - = minus; ID = identification number; VLP = Vertical Landing Pad

Potential Hearing Loss

Under the Alternative 1 West and East VLP Subalternatives, no residents would be exposed to noise levels exceeding DNL 80 dBA (see **Table 3.2-12**). The DNL 80 dBA noise contour was used to identify populations at the greatest risk of hearing loss in accordance with DoD policy. Potential hearing loss risk would be minimal.

Workplace Noise

Workplace noise would be managed using the same programs and in accordance with the same regulations identified in the 2023 FMS PTC EIS. As discussed in Section 3.2.2.1.1, *Installation and Surrounding Area* (relative to the Proposed Action), these programs are designed to protect workers by identifying all areas where workers are exposed to hazardous noise and requiring hearing protection and monitoring as necessary to minimize hearing loss risk. Customers at businesses exposed to noise levels exceeding DNL 80 dBA would not be expected to be exposed to these noise levels for sufficient time (8 hours per day, 5 days a week, for 40 years) to pose a risk of long-term hearing loss.

3.2.2.2.2 Airspace and Ranges

Under Alternative 1, the overall annual number of FMS PTC operations conducted in SUAs and MTRs would not change from the No Action Alternative; however, training usage patterns, such as altitude distribution, would be different. Time-averaged noise levels under Alternative 1 beneath the operational airspaces shown **Figure 2.1-2** are listed in **Table 3.2-19**. The changes in

noise level reflect operational changes as well as improvements to the model MRNMAP made since the 2023 FMS PTC EIS (details of the improvements can be found in Appendix C, *Noise*). Differences in subsonic time-averaged noise level (i.e., L_{dnmr} dBA) under Alternative 1 compared to the No Action Alternative would range from a decrease of L_{dnmr} 6.4 dBA to an increase of L_{dnmr} 1.3 dBA (decrease of DNL 6 dBA to no change in DNL) beneath SUA and would range from a decrease of L_{dnmr} 4.4 dBA to an increase of L_{dnmr} 2 dBA (decrease of DNL 1 dBA to an increase of DNL 1.9 dBA) beneath MTRs. Time-averaged noise levels would remain below DNL 65 dBA, and noise effects beneath Ebbing ANG Base training airspace would not be classified as significant.

Table 3.2-19. Airspace Noise Levels (L_{dnmr} [DNL] dBA) Under Alternative 1

Area Category	Airspace Description	No Action Alternative	Alternative 1	Change
		L_{dnmr} (DNL)	L_{dnmr} (DNL)	L_{dnmr} (DNL)
SUAs (and overlapping airspaces)	Hog A MOA	57.2 (55.9)	53.5 (52.3)	-3.7 (-3.6)
	Hog A MOA and MTRs	61.2 (58.8)	59.8 (57.1)	-1.4 (-1.7)
	Hog B MOA (eastern portion)	57.1 (55.8)	53.7 (52.3)	-3.4 (-3.5)
	Hog B MOA (eastern portion) and MTRs	58.9 (57)	56.3 (54.2)	-2.6 (-2.8)
	Hog B MOA (western portion)	48.2 (48.2)	<45 (<45)	-3.2 (-3.2)
	Hog B MOA (western portion) and MTRs	54.3 (52)	53.9 (51)	-0.4 (-1)
	R-2401A	57.5 (57)	58.8 (56.9)	1.3 (-0.1)
	R-2401B	54.9 (50.4)	54.9 (50.4)	0 (0)
	R-2402A	59.7 (58.8)	60.6 (58.8)	0.9 (0)
	R-2402 and MTRs	61.1 (59.6)	61.6 (59.2)	0.5 (-0.4)
	R-2402B	57.2 (56.8)	50.8 (50.8)	-6.4 (-6)
	R-2402B and MTRs	61.9 (60.4)	59.1 (57)	-2.8 (-3.4)
	R-2402B and Hog A MOA	60.1 (59.3)	55.1 (54.4)	-5 (-4.9)
	R-2402C	57.1 (56.8)	50.8 (50.8)	-6.3(-6)
	Shirley A MOA	<45 (<45)	<45 (<45)	0 (0)
	Shirley A MOA and MTRs	50.5 (48.5)	50.1 (47.4)	-0.4 (-1.1)
	Shirley B MOA	<45 (<45)	<45 (<45)	0 (0)
	Shirley C MOA	<45 (<45)	<45 (<45)	0 (0)
MTRs (portions outside of SUA)	VR-189	53 (49.7)	53.4 (50)	0.4 (0.3)
	VR-1102	<45 (<45)	<45 (<45)	0 (0)
	VR-1103	50.3 (47.1)	52.2 (48.9)	1.9 (1.8)
	VR-1104	48.8 (45.6)	47 (<45)	-1.8 (-0.6)
	VR-1113	53.4 (49.7)	55.4 (51.6)	2 (1.9)
	VR-1130	50.5 (46.9)	46.1 (45.9)	-4.4 (-1)
	IR-117	52.9 (49.6)	54.8 (51.4)	1.9 (1.8)
	IR-120	46.1 (45.1)	46.9 (<45)	0.8 (-0.1)
	IR-121	50.1 (47.5)	52.1 (49.4)	2 (1.9)
	IR-164	54.3 (48.3)	52.5 (48.8)	-1.8 (0.5)
	IR-117 and VR-1113	56.2 (54.2)	58.1 (54.5)	1.9 (0.3)
	IR-120 and VR-1102	47.2 (45.1)	47.6 (<45)	0.4 (-0.1)
	IR-121 and VR-1103	53.2 (52)	55.2 (52.2)	2 (0.2)
	IR-164 and VR-1104	53.8 (49.5)	53.6 (50)	-0.2 (0.5)
Avoidance Areas	Bearce	49.8 (49.8)	49.6 (47.9)	-0.2 (-1.9)
	Booneville	50.8 (50.8)	47.2 (47.2)	-3.6 (-3.6)
	Waldron	51.1 (51)	48 (47.6)	-3.1 (-3.4)

Key: - = minus; dBA = A-weighted decibels; DNL = day-night average sound level; ID = identification number; IR = Instrument Route; L_{dnmr} = onset rate-adjusted monthly day-night average sound level; L_{max} = maximum noise level; MOA = Military Operations Area; MTR = Military Training Route; R- = Restricted Area; SUA = Special Use Airspace; VR =Visual Route
Note: FAA evaluates airspace noise using the DNL metric.

As shown in **Table 3.2-20**, changes in numbers of events exceeding 85 dBA L_{max} per average day would range from a decrease of 5.5 events to an increase of 0.4 event beneath SUA and would remain the same or increase by up to 0.3 event beneath MTRs. The highest value (3.6 events exceeding 85 dBA L_{max} per average day) would occur beneath R-2402 where it overlaps with MTR corridors. The relatively low number of events exceeding 85 dBA L_{max} per day reflect the fact that training operations occur within operational airspace that covers large areas, such that overflights at relatively low altitudes are infrequent.

Table 3.2-20. Average Number of Events Exceeding 85 dBA L_{max} per Day Under Alternative 1

Area Category	Airspace Description	No Action Alternative	Alternative 1	Change
SUAs (and overlapping airspaces)	Hog A MOA	1.5	0.5	-1
	Hog A MOA and MTRs	1.5	1.1	-0.4
	Hog B MOA (eastern portion)	1.3	0.5	-0.8
	Hog B MOA (eastern portion) and MTRs	1.3	0.6	-0.7
	Hog B MOA (western portion)	1.2	0.3	-0.9
	Hog B MOA (western portion) and MTRs	1.2	0.4	-0.8
	R-2401A	1.9	1.8	-0.1
	R-2401B	0.3	0.7	0.4
	R-2402A	4.7	3.1	-1.6
	R-2402 and MTRs	5.8	3.6	-2.2
	R-2402B	4.2	0	-4.2
	R-2402B and MTRs	5.5	0.5	-5
	R-2402B and Hog A MOA	5.5	0	-5.5
	R-2402C	4.1	0	-4.1
	Shirley A MOA	0.3	0	-0.3
	Shirley A MOA and MTRs	0.3	0	-0.3
	Shirley B MOA	0.3	0	-0.3
	Shirley C MOA	0.3	0	-0.3
MTRs (portions outside of SUA)	VR-189	0	0.1	0.1
	VR-1102	0	0	0
	VR-1103	0	0	0
	VR-1104	0	0	0
	VR-1113	0	0.1	0.1
	VR-1130	0	0.1	0.1
	IR-117	0	0.2	0.2
	IR-120	0	0	0
	IR-121	0	0.1	0.1
	IR-164	0	0	0
	IR-117 and VR-1113	0	0.3	0.3
	IR-120 and VR-1102	0	0	0
	IR-121 and VR-1103	0	0.1	0.1
	IR-164 and VR-1104	0	0	0
Avoidance Areas	Bearce	0	0	0
	Booneville	1.2	0	-1.2
	Waldron	1.2	0	-1.2

Key: - = minus; dBA = A-weighted decibels; ID = identification number; IR = Instrument Route; L_{max} = maximum noise level; MOA = Military Operations Area; MTR = Military Training Route; R- = Restricted Area; SUA = Special Use Airspace; VR =Visual Route

Under Alternative 1, supersonic operations would occur in the same airspace units and follow restrictions currently in place, occurring only above 30,000 feet MSL. Sonic booms experienced

on the ground would continue to be relatively infrequent, resulting in time-averaged noise levels below 45 dB C-weighted DNL.

Munitions use by FMS PTC aircraft would generate peak sound levels below 115 peak sound level, which are associated with a low likelihood of complaints, at the closest noise-sensitive locations to Razorback Range. High-explosive munitions would not be used at Razorback Range.

3.2.2.3 No Action Alternative

3.2.2.3.1 Installation and Surrounding Area

Noise mitigations described in the 2023 FMS PTC EIS ROD would remain in effect under the No Action Alternative, resulting in noise levels that are described in the 2023 FMS PTC EIS § 3.3.5 and summarized in Section 3.2.1.1, *Installation and Surrounding Area*. There would be no additional noise effects near Ebbing ANG Base/FSRA under the No Action Alternative.

3.2.2.3.2 Airspace and Ranges

Noise levels beneath training airspace units would be as described in the 2023 FMS PTC EIS § 3.3.4.2 and summarized in Section 3.2.1.2, *Airspace and Ranges*. There would be no additional noise effects beneath training airspace under the No Action Alternative. Time-averaged noise levels under airspace would remain below L_{dnmr} 65 dBA and DNL 65 dBA.

3.2.2.4 Cumulative Effects

Cumulative noise effects with other past present, or reasonably foreseeable actions are similar to those described in the 2023 FMS PTC EIS § 4.12.2.1. Actions with cumulative noise effects include activities that contribute additional aircraft operations and facility construction activities within the ROI.

Expected growth in the tempo of civilian operations at FSRA is accounted for in noise levels modeled for the Proposed Action and Alternative 1, and noise levels reflect updated predictions for civilian operations tempo in 2029. The effects of the recently complete expansion of RWY 08-26 on runway noise are also accounted for in noise modeling for Proposed Action and Alternative 1. Agile Combat Employment exercises have begun to occur since the 2023 FMS PTC EIS, and the effects of these exercises on noise levels are included in noise levels described in Section 3.2.2.1, *Proposed Action*, and in Section 3.2.2.2, *Alternative 1*.

Construction, demolition, renovation, and infrastructure projects that have occurred, are occurring or that will occur on Ebbing ANG Base/FSRA and surrounding areas generate localized increases in noise levels. These increases in noise levels are temporary, lasting only for the duration of the project, and localized to the areas immediately surrounding the construction activity. Developments near Ebbing ANG Base/FSRA, including on Fort Chaffee could, in some cases, result in locations that were not previously noise sensitive. Development projects generally result in increased human activity levels, potentially increasing ambient noise levels nearby. Reasonably foreseeable facility development and infrastructure projects within the ROI generally follow existing land use patterns and any increases in noise sensitivity or ambient noise levels would be incremental changes from current conditions.

Reasonably foreseeable actions would not result in significant noise effects. Therefore, reasonably foreseeable actions in conjunction with the Proposed Action or Alternative 1 would

not result in any significant noise effects above those analyzed in Section 3.2.2.1, *Proposed Action*, and Section 3.2.2.2, *Alternative 1*.

3.2.2.5 Mitigations

In general, mitigation measures can be implemented to avoid, minimize, remediate, or compensate for environmental effects. Avoiding, minimizing, or reducing potential effects has guided the development of multiple military aircraft basing alternatives. Mitigation measures are built or designed into the Proposed Action and Alternatives; applied to construction, operation, or maintenance involved in the action; or implemented as compensatory measures. However, there are no specific legal limits that apply to military noise. For example, in 1972, Congress passed the Noise Control Act, which imposed limitations on source noise levels of several types of equipment. However, because noise controls could, in some cases, reduce the combat effectiveness of military equipment, military equipment was exempted from these requirements. For the same reason, FAA limitations on civilian aircraft noise do not apply to military aircraft.

Mitigation options for adverse noise effects include measures that may reduce sound at (1) the receptor and (2) the source. Noise mitigations are considered in terms of potential benefits (i.e., potential noise reductions at sensitive locations) and in term of effects on operational effectiveness of units based at Ebbing ANG Base.

Noise effects mitigation at the receptor typically involves measures to improve structural noise attenuation. Since the 2023 FMS PTC EIS, the Office of the Secretary of Defense's Office of Local Defense Community Cooperation has clarified guidelines for community noise mitigation proposals (OLDCC, 2024). The Consolidated Appropriations Act, 2022 (Public Law 117-103) appropriated funding for the Community Noise Mitigation Program to remain available until September 30, 2025 (GSA, 2024). Although every effort will be made by the DAF to fund identified mitigations, application of some proposed mitigation measures may be subject to Congressional appropriations.

3.3 LAND USE

The 2023 FMS PTC EIS § 3.4 defines land use as a resource area, which is carried forward in this SEIS. This section considers updates to land use management plans, comprehensive plans, and zoning regulations that were used in the 2023 FMS PTC EIS to determine the type and extent of land use in specific areas potentially affected by the FMS PTC beddown.

On military installations, land use is organized according to various operational and support functions, compliant with applicable safety and security directives. For lands under the airspace, land use is characterized by the natural attributes of the land and generally based on the resource productive uses (such as forestry, mining, and energy production), agriculture, conservation, and outdoor recreation; all of which are managed by various entities including county, state, federal, and Tribal agencies according to applicable laws. Specially designated areas such as parks, monuments, refuges/preserves, wilderness, and Wild and Scenic Rivers, have the highest degree of protection due to their special attributes and purposes.

Analysis Methodology

The analysis methodology in this SEIS for assessing effects to land use for Ebbing ANG Base/FSRA is the same as what was used and described in the 2023 FMS PTC EIS § 3.4.1.1. Land use effects in and around Ebbing ANG Base/FSRA are evaluated by determining whether an action is incompatible with an existing land use or reasonably foreseeable land use due to noise, safety, or other issues. The DAF used the following process to determine land use compatibility of the Proposed Action and Alternatives:

1. Use geographic information system calculations to quantify the area of land (and associated land uses) exposed to noise in 5 dBA intervals from DNL 65 dBA to greater than DNL 80 dBA for baseline and proposed conditions.
2. Determine and compare increases or decreases in land use area noise exposure.
3. Use FAA land use compatibility guidelines found in 14 CFR § 150, Appendix A, Table 1: Land Use Compatibility With Yearly Day-Night Average Sound Levels to determine compatibility of noise exposure in affected areas and corresponding land use.
4. Identify noise-sensitive areas with potentially significant effects from increased noise exposure based on FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, criteria.

The 2023 FMS PTC EIS, Appendix B, § B.1.1, describes the recommended land use compatibilities and restrictions for both the DoD (§ B.1.1.1) and FAA (§ B.1.1.2), which are summarized in **Table 3.3-1**. The DAF reviewed the most recent DoD Instruction 4165.57, *Air Installations Compatible Use Zones* (DoD, 2021) and when compared to the information used for the 2023 FMS PTC EIS, no changes were found that would affect the approach to the analysis for this SEIS. The DAF also utilized 14 CFR § 150 to identify compatible and non-compatible land uses. The guidelines presented in 14 CFR § 150, Appendix A, Table 1: Land Use Compatibility With Yearly Day-Night Average Sound Levels have not changed from what was presented in the 2023 FMS PTC EIS, Appendix B (§ B.1.1.2). Therefore, the 2023 FMS PTC EIS Appendix B § B.1.1 has been incorporated by reference.

Table 3.3-1 Land Use Compatibility

Land Use Category	DNL 65 dBA	DNL 70 dBA	DNL 75 dBA	DNL 80 dBA and Greater [f]
Agricultural/Open Space/Vacant [1]	Compatible	Compatible	Compatible	Compatible
Commercial [2]	Compatible	Compatible [b]	Some uses allowed [b]	Incompatible [d]
Industrial [3]	Compatible	Compatible [b]	Compatible [b]	Some uses allowed [f]
Public/Quasi-Public [4]	Compatible [a][b]	Compatible [a][b]	Some uses allowed [b][k]	Incompatible
Recreation [5]	Compatible [h]	Compatible [g][h][i]	Some uses allowed [b][g][i]	Some uses allowed [j]
Residential [6][a]	Incompatible [c]	Incompatible [c]	Incompatible [c]	Incompatible
Roadway/Infrastructure [7]	Compatible	Compatible	Compatible	Compatible [e]
Unclassified	NA	NA	NA	NA

Table 3.3-1 Land Use Compatibility

Land Use Category	DNL 65 dBA	DNL 70 dBA	DNL 75 dBA	DNL 80 dBA and Greater [f]
Water	NA	NA	NA	NA

Source: (DAF, 2023a)
Key: > = greater than; ≥ = greater than or equal to; dB = decibels; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; NA = No Action; NLR = Noise Level Reduction
Notes:
Use table in conjunction with the 2023 FMS PTC EIS, Appendix B, Table 3.

1. Agricultural use exceptions include livestock farming incompatible at levels DNL >75 dBA. Associated residential buildings are allowed up to DNL 75 dBA, with NLR of at least 25 dB and 30 dB.
2. Commercial includes offices, business, professional, wholesale and large-item retail, hardware, and general retail.
3. Industrial includes general manufacturing, photographic and optical, and productive uses (mining, fishing, resource extraction and production).
4. Public/quasi-public includes schools, hospitals, nursing homes, churches, concert halls, and government buildings.
5. Recreation includes outdoor arenas and performance spaces, parks, zoos, golf courses, stables, water parks, amusement parks, resorts, and camps. Associated structures where public gather generally require NLR construction.
6. Residential includes residential single and multi-unit dwellings and transient lodging. Mobile home parks are not allowed at levels DNL ≥65 dBA.
7. Transportation/infrastructure includes roads, rail, utility infrastructure, and parking. Associated inhabited structures require appropriate NLR construction.

a. Residential (including transient lodging) is generally prohibited except where the community determines that residential or school uses must be allowed; measures to achieve outdoor-to-indoor NLR of at least 25 dB in DNL 65–70 dBA and 30 dB in DNL 70–75 dBA contours should be incorporated into building codes. Normal residential construction can be expected to provide a NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.
b. Allowed if buildings where the public is received have suitable NLR construction to achieve 25 and 30 dB indoor-to-outdoor reduction (see 2023 FMS PTC EIS, Appendix B, Table 3).
c. Transient lodging is allowed with appropriate NLR construction as per FAA guidelines.
d. Only wholesale and large-item retail hardware is allowed with NLR construction of 35 dB for offices and public indoor areas as per FAA guidelines and local authority.
e. Only transportation is allowed at DNL levels > 85 dBA, with NLR for supporting structures.
f. No photographic and optical uses allowed at DNL levels ≥ 80 dBA. Fishing, mining, resource production, and extraction are allowed at DNL levels ≥ 80 dBA, but without associated residential use.
g. Compatibility varies by activity. Unsuitable uses are as follows: DNL ≥ 65 dBA for outdoor music/performance spaces, DNL ≥ 70 dBA for zoos and nature exhibits, and DNL ≥ 75 dBA for outdoor spectator arenas.
h. Outdoor arenas require sound reinforcement systems.
i. Structures associated with golf, stables, and water recreation require 25 and 30 dB NLR, as appropriate.
j. Outdoor amusements, parks, resorts, and camps are allowed.
k. Schools, hospitals, nursing homes, churches, auditoriums, and concert halls are incompatible. Government offices are allowed with 30 dB NLR construction.

To evaluate significance related to effects on existing Environmental Restoration Program (ERP)/contaminated sites, the location of these sites was compared with the location of proposed activities. Site-specific conditions, including the existence of land use controls (LUCs), were then analyzed against proposed activities to assess whether these activities could result in health effects to workers or releases of hazardous constituents to the environment.

For land use under the airspace, land use compatibility guidelines do not fully address the effects of noise on noise-sensitive areas such as national parks or designated Wilderness Areas, where a quiet setting is a generally recognized purpose and attribute. This SEIS uses the same analysis methodology described in the 2023 FMS PTC EIS § 3.4.1.2, to assess potential effects to noise-sensitive land uses under the airspace, including national parks, Wilderness Areas, lands with wilderness characteristics, Wild and Scenic Rivers, national wildlife refuges, and historic sites including traditional cultural properties where a quiet setting is a recognized attribute and part of the purpose of the area. Determinations of land use effects are stated as low, moderate, or

substantial, based on the degree of change (intensity) and the degree of sensitivity of the affected area, use, or associated activities (context).

3.3.1 Affected Environment

3.3.1.1 Installation and Surrounding Area

The 2023 FMS PTC EIS § 3.4.2.1 describes the land use on Ebbing ANG Base/FSRA and the surrounding area, which are applicable to this SEIS. These land uses include residential, agricultural/open, commercial, parks/recreational, industrial, and institutional, which are illustrated in **Figure 3.3-1.** Under baseline conditions, as reflected in 2023 FMS PTC EIS Table 3.4-4, the area outside the airport boundary exposed to noise levels of DNL 65 dBA is approximately 6,436 acres, of which 1,390 acres consists of land uses incompatible with noise levels DNL 65 dBA or greater (**Table 3.3-2**). This includes 1,365 acres of residential areas, 19 acres of commercial land, and 6 acres of public/quasi-public land. Additionally, 161 acres of land may be considered incompatible depending on the specific land use, such as occupied structures, type of construction, and type of activity.

Table 3.3-2. Land Use Noise Exposure Surrounding Ebbing ANG Base/FSRA Under Baseline Conditions

Land Use Category	DNL 65 dBA	DNL 70 dBA	DNL 75 dBA	DNL 80 dBA and Greater	Total (acres)
Agricultural/Open Space/Vacant	838	568	242	22	1,670
Commercial	536	452	111	19	1,118
Industrial	261	184	241	17	703
Public/Quasi-Public	219	120	33	6	378
Recreation	181	1	0	0	182
Residential	929	364	72	0	1,365
Roadway/Infrastructure	521	262	102	10	895
Unclassified	2	0	0	0	2
Water	86	34	3	0	123
TOTAL	**3,573**	**1,985**	**804**	**74**	**6,436**

Key: ANG = Air National Guard; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; FSRA = Fort Smith Regional Airport; GIS = geographic information system

Notes:
GIS data was aggregated into selected categories to allow correlation to FAA guidelines to the extent possible. Use table in conjunction with Table 3.3-1.

Environmental Restoration Program Land Use Constraints

The ERP is used by the DoD to identify, characterize, clean up, and restore sites contaminated with toxic and hazardous substances, low-level radioactive materials, petroleum products, or other pollutants and contaminants. As part of the overall program to identify effects from historical operations, the DAF is also currently investigating potential effects related to chemicals known as per- and polyfluoroalkyl substances (PFAS). This family of chemicals was developed in the 1940s and includes perfluorooctane sulfonate (PFOS), which was used in stain- and water-resistant products, and perfluorooctanoic acid (PFOA), which was used for protective coatings. PFAS, which includes PFOS and PFOA, are considered emerging contaminants due to their persistence in the environment and potential for bioaccumulation in humans and wildlife.

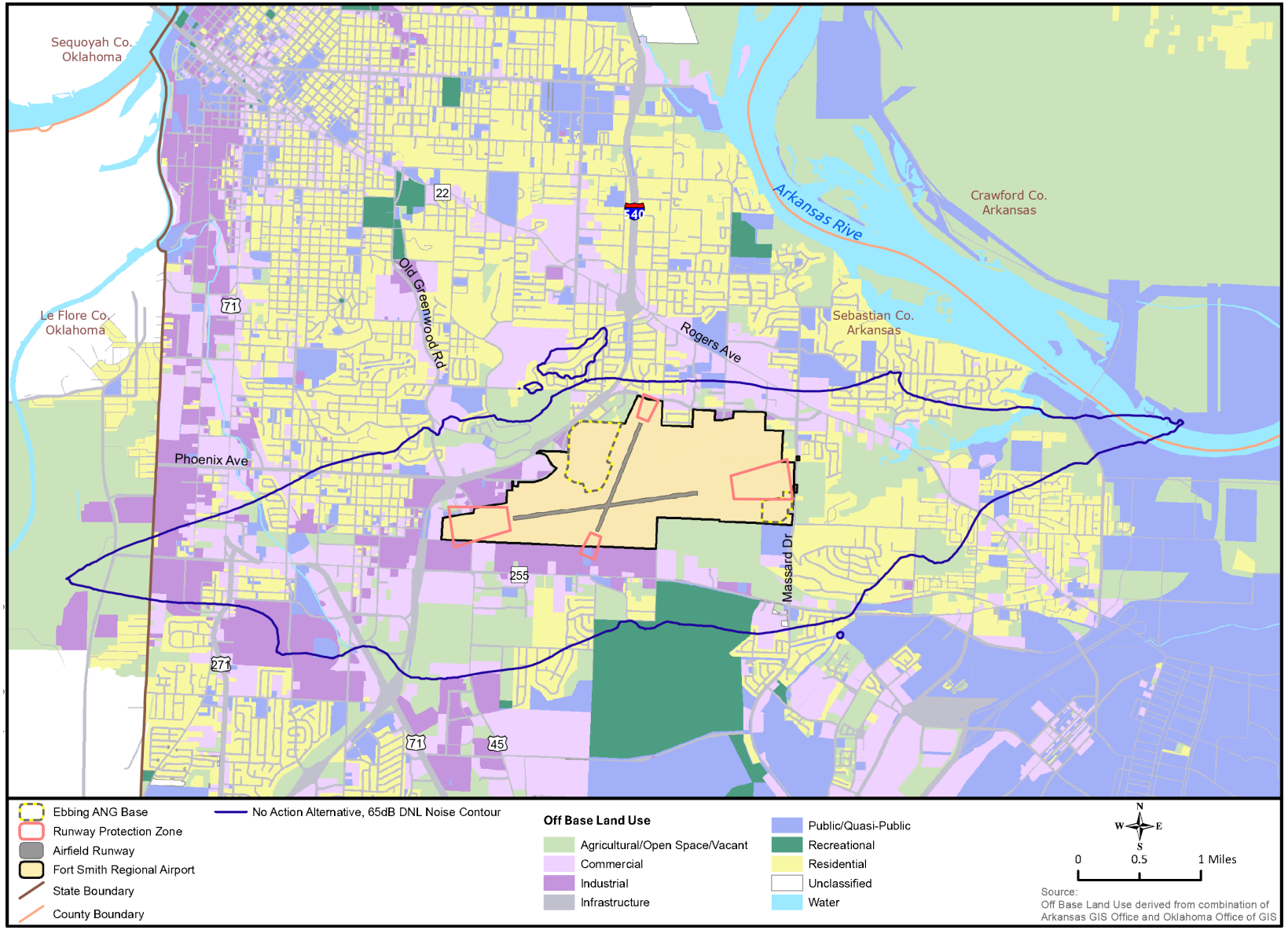


Figure 3.3-1. Ebbing ANG Base/FSRA and Surrounding Land Use

Aqueous film-forming foam (AFFF) containing PFAS (i.e., PFOS and/or PFOA) was developed and deployed by the Navy in the early 1960s and has been used on military bases and at U.S. airports, municipal fire stations and airports, petroleum facilities, and other industries to effectively extinguish hydrocarbon-based fires. Historic use of AFFF, along with other AFFF constituents and co-contaminants has contaminated surrounding soils, sediment, surface water, and groundwater.

At Ebbing ANG Base, 13 potential AFFF (PFAS) release areas have been identified, with 11 sites recommended for further investigation (ANG, 2016). These sites are currently being evaluated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. **Figure 3.3-2** provides a visual representation of these identified PFAS release areas, including key locations such as Outfall 007 and the Former Fire Training Area. These areas are notable because they are designated as AFFF/PFAS Areas of Concern within the proposed areas of construction under the Proposed Action. Specifically, the Former Fire Training Area is located within the Munitions Support Squadrons improvements area, and Outfall 007 is situated within the area designated for ramp expansion. The proximity of these PFAS-contaminated sites to proposed development underscores the importance of managing PFAS-impacted environmental media and adhering to the CERCLA process during project implementation.

To ensure the effective management of these sites, the CERCLA process at Ebbing ANG Base is advancing to the Remedial Investigation phase, during which the ANG will collect detailed information to:

- Characterize site conditions
- Determine the nature and extent of contamination
- Evaluate risks to human health and the environment through baseline ecological and human health risk assessments

The CERCLA process at Ebbing ANG Base will continue independently of any proposed construction or mission-related activities, ensuring that all environmental conditions are properly addressed.

PFAS-containing waste streams at Ebbing ANG Base are managed in compliance with federal, state, DoD, and DAF regulations and guidance. Worker safety during project implementation is also a key consideration in PFAS-impacted areas. Construction activities and any potential disturbances to PFAS-contaminated environmental media within the project footprint will be carefully managed. The ERP Manager will be consulted as part of the CERCLA process and before project implementation to ensure that worker safety protocols are followed.

As part of the CERCLA process, future LUCs may be established to manage any contamination that cannot be fully remediated. LUCs would ensure that exposure to contaminants is minimized by limiting certain land uses, restricting soil disturbance or groundwater extraction, and requiring that monitoring or remedial systems (e.g., groundwater wells) remain undisturbed. LUCs would be codified in site-specific decision documents and would remain in effect until contamination is remediated to levels that allow unrestricted land use. Any future modifications or terminations of LUCs would require approval from regulatory agencies and compliance with applicable public notification requirements.

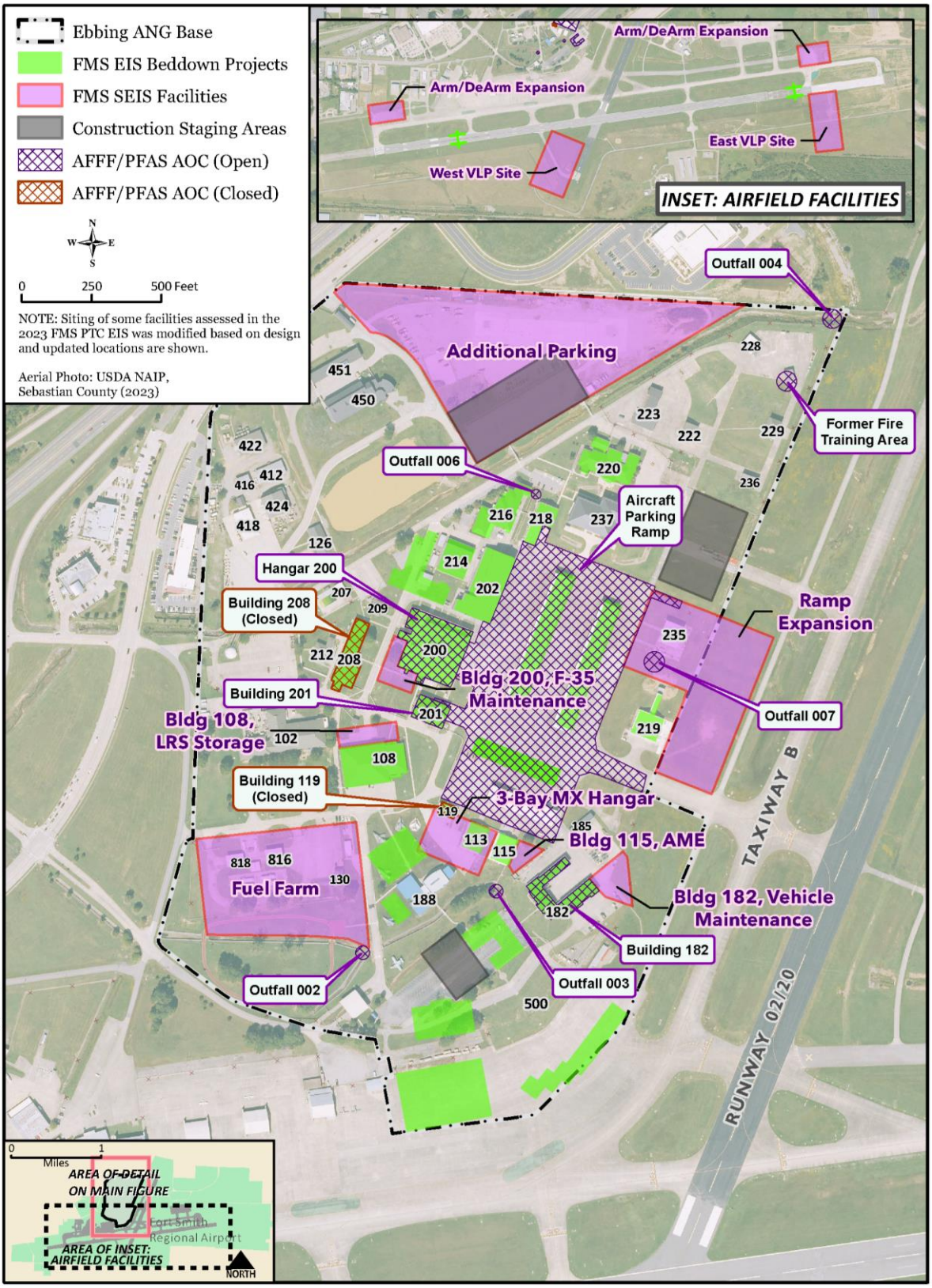


Figure 3.3-2. Ebbing ANG Base AFFF/PFAS Locations

PFAS contamination considerations relative to the proposed mission include worker safety during construction and the proper handling of any PFAS-impacted environmental media encountered. Ebbing ANG Base will continue to adhere to federal, state, and local worker safety regulations and maintain coordination with regulatory agencies and the ERP Manager throughout the CERCLA process.

3.3.1.2 Airspace and Ranges

The airspace ROI for land use has not changed from what was described in the 2023 FMS PTC EIS § 3.4.2.2. The percentages of areas under federal, state, local, Tribal, and non-governmental organizational management within the ROI were presented in the 2023 FMS PTC EIS, Table 3.4-2.

Detailed descriptions of land use under the Hog MOAs/ATCAAs, Shirley MOAs/ATCAAs, MTRs, and Razorback Range are included in the 2023 FMS PTC EIS § 3.4.2.2. These descriptions are still considered valid and applicable to this SEIS and are incorporated by reference.

Generally, the airspace ROI overlies the following federally managed areas, which are listed in detail in the 2023 FMS PTC EIS, Appendix B, Table 4, Table 6, and Table 7:

- 2 national forest management units (Ouachita and Ozark-St. Francis)
- 2 experimental forest areas
- 16 national forest roadless areas
- 13 lakes and reservoirs managed by U.S. Army Corps of Engineers (USACE)
- 8 national recreation areas
- 3 national botanic areas
- 7 national game refuges
- 4 national wildlife refuges
- 3 research natural areas
- 1 national scenic area
- 8 Wild and Scenic Rivers (note: one additional Wild and Scenic River is included in this SEIS. See Appendix D, *Land Use*)
- 10 designated Wilderness Areas
- 1 national park unit

State-managed lands under the airspace ROI are listed in the 2023 FMS PTC EIS, Appendix B, Table 5, which include the following:

- 11 state parks
- 2 game management/hunting areas
- 20 wildlife management areas
- 10 natural areas
- 1 Wilderness Area managed by the Oklahoma Department of Wildlife Conservation
- 4 other state-managed areas

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

3.3.2.1.1 Installation and Surrounding Area

The analysis of land use effects for the Proposed Action evaluates land use compatibility in relation to changes in noise exposure from the No Action Alternative. Compatibility of these land uses with noise exposure is shown in **Table 3.3-1**. This analysis is also complemented by the analysis of compatibility of projected sound levels for representative noise-sensitive locations in the surrounding area, including schools, hospitals, parks, and places of worship (see **Table 3.2-3**). The accident potential hazard associated with the Proposed Action is considered negligible (see **Table 3.1-1**). Therefore, the Proposed Action would not affect land use compatibility from aircraft accident risks.

West VLP Site Subalternative

Figure 3.3-3 shows the projected change in noise exposure compared to the No Action Alternative and **Table 3.3-3** quantifies the area affected by land use category and noise exposure in DNL 5 dBA increments.

Under the Proposed Action, West VLP Site Subalternative, the area outside the airport boundary exposed to noise levels of DNL 65 dBA and greater would increase by 1,764 acres to a total of 8,200 acres. Notably, the area of residential land exposed to noise of DNL 65 dBA and greater would increase by 556 acres to a total of 1,921 acres. The estimated number of residents affected by this expansion is provided in **Table 3.2-2.**

Approximately 329 additional acres of residential land would experience noise levels of DNL 65 dBA up to 70 dBA, and noise levels of DNL 70 dBA up to 75 dBA would affect 166 additional acres. As **Table 3.3-3** indicates, for noise exposure of DNL 65 dBA to 75 dBA, where the local community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Noise levels of DNL 75 dBA and greater would affect 61 additional acres of residential land and are not considered compatible, even with NLR measures. The effects on residential land use is adverse and significant due to noise levels exceeding DNL 65 dBA but can be reduced through various mitigating measures (see Section 3.2.2.5, *Noise*, *Mitigations*).

An additional 241 acres of commercial land use would also be newly exposed to marginally compatible and incompatible noise levels. As indicated in **Table 3.3-3**, most commercial uses exposed to DNL 70 dBA to 80 dBA are compatible if associated structures have the requisite NLR construction. Those businesses and other commercial uses without NLR construction could experience incompatible noise levels. An estimated 12 additional acres of this land lie within the DNL 80 dBA and greater contour, where only large-scale warehouse-type commercial use is possible, with appropriate NLR construction for occupied structures.

Table 3.3-3. Noise Exposure Surrounding Ebbing ANG Base/FSRA – Proposed Action, West VLP Site Subalternative

Land Use Category	DNL 65 dBA - Acres			DNL 70 dBA - Acres			DNL 75 dBA - Acres			≥ DNL 80 dBA - Acres			≥ DNL 65 dBA Total (acres)		
	NAA	PA	Change	NAA	PA	Change	NAA	PA	Change	NAA	PA	Change	NAA	PA	Change
Agricultural/Open Space/Vacant	838	840	+2	568	648	+80	242	351	+109	22	62	+40	1,670	1,901	+231
Commercial	536	613	+77	452	540	+88	111	187	+76	19	31	+12	1,118	1,371	+253
Industrial	261	372	+111	184	96	-88	241	282	+41	17	91	+74	703	841	+138
Public/Quasi-Public	219	304	+85	120	156	+36	33	36	+3	6	12	+6	378	508	+130
Recreation	181	382	+201	1	46	+45	0	0	0	0	0	0	182	428	+246
Residential	929	1,258	+329	364	530	+166	72	133	+61	0	0	0	1,365	1,921	+556
Roadway/Infrastructure	521	597	+76	262	343	+81	102	156	+54	10	19	+9	895	1,115	+220
Unclassified	2	2	0	0	0	0	0	0	0	0	0	0	2	2	0
Water	86	60	-26	34	47	+13	3	6	+3	0	0	0	123	113	-10
Total	**3,573**	**4,428**	**+855**	**1,985**	**2,406**	**+421**	**804**	**1,151**	**+347**	**74**	**215**	**+141**	**6,436**	**8,200**	**+1,764**

Source: (Arkansas GIS Office, 2021)

Key: ≥ = greater than or equal to; - = minus; + = plus; ANG = Air National Guard; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; FSRA = Fort Smith Regional Airport; GIS = geographic information system; NAA = No Action Alternative; NLR = Noise Level Reduction; PA = Proposed Action; VLP = Vertical Landing Pad

Note:

GIS data was aggregated into selected categories to allow correlation to FAA guidelines to the extent possible. Use this table in conjunction with **Table 3.3-1** for land use compatibility.

Approximately 130 additional acres of public/quasi-public land would be exposed to noise levels of DNL 65 dBA and greater. Some of this land is public parkland and vacant land. The data for this land use category includes public facilities such as schools, hospitals, nursing homes, churches, concert halls, and government buildings, although some of these uses can also be found intermixed within other land uses (as shown in **Figure 3.3-3**). Compatibility of most of the land in this category would depend on specific uses and the use of NLR construction. Representative noise-sensitive locations in **Table 3.2-13**, many of which are within the public/quasi-public land use category, would experience noticeable increases in noise. Those without adequate NLR construction would experience adverse effects and incompatible conditions.

An estimated 138 additional acres of industrial use land would be newly exposed to levels of DNL 65 dBA or higher. Most industrial uses are compatible with higher noise exposure, provided occupied buildings where the public are received have NLR modifications or construction. Within the DNL 80 dBA and greater exposure area, some industrial uses may be incompatible (see **Table 3.3-3**). About 443 additional acres of agricultural land (excluding livestock farming), open space, vacant land, and land used for roads and infrastructure would be exposed to DNL 65 dBA and greater. These land uses are compatible with higher noise exposure of DNL 75 dBA and greater, of which 204 additional acres would be exposed. Potential development of vacant land or open space would likely follow the current zoning of the parcels. Where zoning does not incorporate new noise conditions at the airport, incompatible land development could occur on vacant parcels in the future.

About 246 additional acres of recreational use land would be newly exposed to noise levels of DNL 65 dBA and higher, mostly within the north part of Ben Geren Regional Park and a smaller portion (less than an acre) within Massard Prairie Battlefield Park. These noise levels are compatible with underlying outdoor recreational uses, but NLR measures are recommended for future residential uses exposed to noise levels of greater than or equal to DNL 65 dBA and for current and future indoor facilities for public use in areas exposed to DNL 70 dBA and greater.

Based on the context of the effects (residential land areas) and the increase in noise exposure (intensity) greater than DNL 65 dBA, implementation of the Proposed Action, West VLP Site Subalternative would have significant effects on residential land uses surrounding Ebbing ANG Base/FSRA. Commercial and public/quasi-public uses in the surrounding area could experience moderate adverse effects.

East VLP Site Subalternative

As shown in **Figure 3.3-3** and in **Table 3.3-4**, additional acreage exposed under the East VLP Site Subalternative would be similar to the additional acreage exposed by the West VLP Site Subalternative (**Table 3.3-3**). Therefore, effects would also be like those described for the West VLP Site Subalternative. As such, based on the context of the effects (residential land areas) and the increase in noise exposure (intensity) greater than DNL 65 dBA, implementation of the Proposed Action, West VLP Site Subalternative, would have significant effects on residential land uses surrounding Ebbing ANG Base/FSRA. Commercial and public/quasi-public uses in the surrounding area could experience moderate adverse effects.

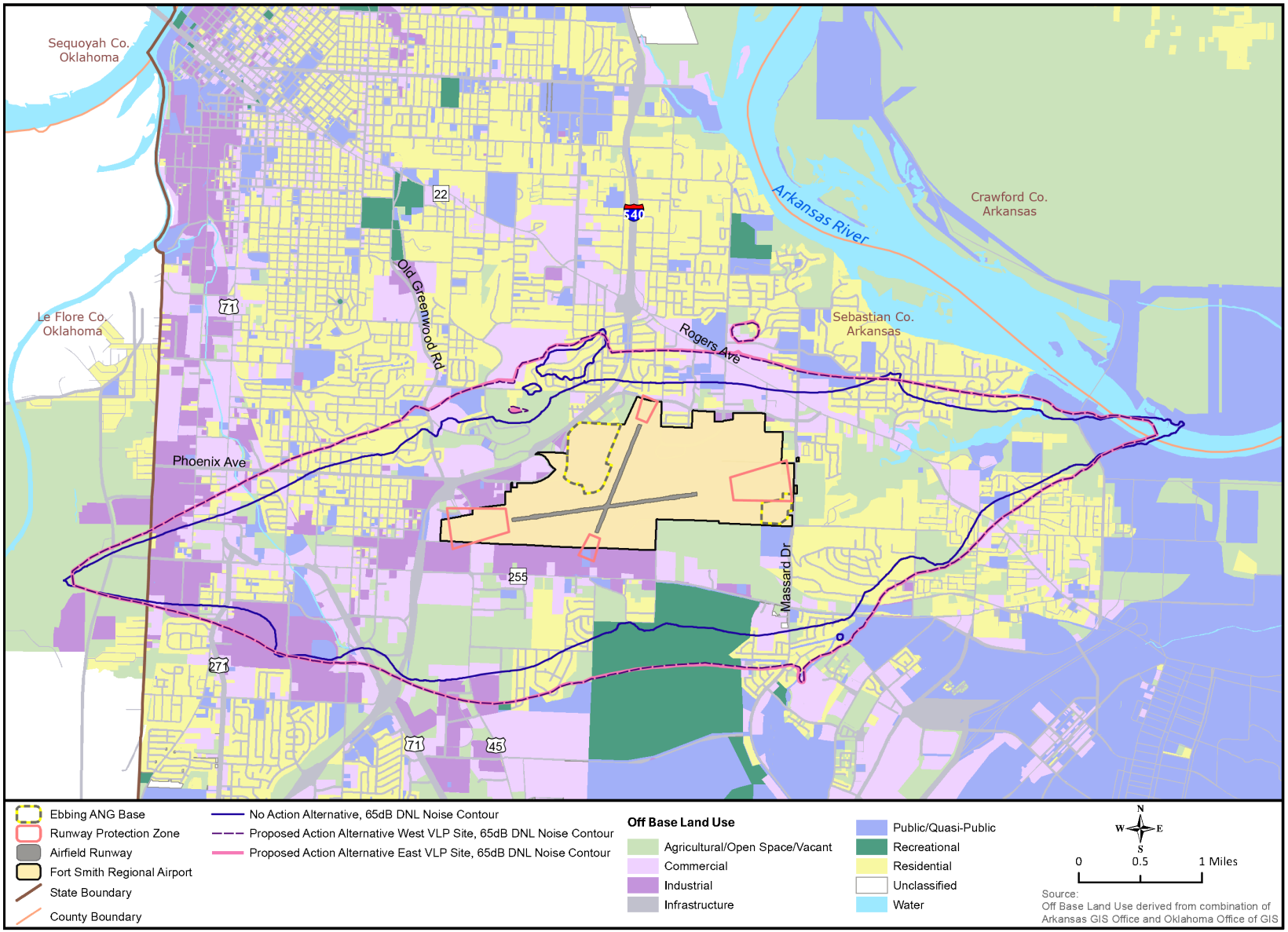


Figure 3.3-3. Noise Exposure and Land Use Surrounding Ebbing ANG Base/FSRA – Proposed Action

Table 3.3-4. Noise Exposure Surrounding Ebbing ANG Base/FSRA – Proposed Action, East VLP Site Subalternative

Land Use Category	DNL 65 dBA - Acres			DNL 70 dBA - Acres			DNL 75 dBA - Acres			≥ DNL 80 dBA - Acres			≥ DNL 65 dBA Total Acres		
	NAA	PA	Change	NAA	PA	Change	NAA	PA	Change	NAA	PA	Change	NAA	PA	Change
Agricultural/Open Space/Vacant	838	848	+10	568	625	+57	242	344	+102	22	85	+63	1,670	1,902	+232
Commercial	536	616	+80	452	550	+98	111	185	+74	19	30	+11	1,118	1,381	+263
Industrial	261	370	+109	184	98	-86	241	299	+58	17	72	+55	703	839	+136
Public/Quasi-Public	219	306	+87	120	159	+39	33	37	+4	6	9	3	378	511	+133
Recreation	181	372	+191	1	59	+58	0	0	0	0	0	0	182	431	+249
Residential	929	1,265	+336	364	526	+162	72	135	+63	0	0	0	1,365	1,926	+561
Roadway/Infrastructure	521	596	+75	262	347	+85	102	156	+54	10	19	+9	895	1,118	+223
Unclassified	2	2	0	0	1	+1	0	0	0	0	0	0	2	3	+1
Water	86	59	-27	34	47	+13	3	7	+4	0	0	0	123	113	-10
Total	**3,573**	**4,434**	**+861**	**1,985**	**2,412**	**+427**	**804**	**1,163**	**+359**	**74**	**215**	**+141**	**6,436**	**8,224**	**+1,788**

Source: (Arkansas GIS Office, 2021)

Key: ≥ = greater than or equal to; - = minus; + = plus; ANG = Air National Guard; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; FSRA = Fort Smith Regional Airport; GIS = geographic information system; NAA = No Action Alternative; NLR = Noise Level Reduction; PA = Proposed Action; VLP = Vertical Landing Pad

Note:

GIS data was aggregated into selected categories to allow correlation to FAA guidelines to the extent possible. Use this table in conjunction with **Table 3.3-1** for land use compatibility.

Projected sound levels for representative noise-sensitive locations in the surrounding area, including schools, hospitals, parks, and places of worship are discussed in Section 3.2.1.1, *Noise, Installation and Surrounding Area*, and **Table 3.2-13**. The estimated number of residents affected by this expansion is provided in **Table 3.2-2**.

Environmental Restoration Program Land Use Constraints

As shown in **Figure 3.3-2**, the general planned areas of construction would overlap with areas associated with ERP sites identified at Ebbing ANG Base, including potential PFAS release sites such as the Former Fire Training Area and Outfall 007. These sites are subject to environmental management under the CERCLA process. LUCs at these sites restrict development to industrial uses and prohibit groundwater extraction for potable purposes.

The planned activities align with the LUCs, ensuring that redevelopment of these sites remains limited to industrial use. Additionally, groundwater in these areas would not be used for potable purposes. While construction activities could involve some interaction with environmental media (e.g., soil, surface water, sediment, or groundwater), exposure is unlikely to result in adverse human health effects due to adherence to established safety protocols and regulatory requirements.

Prior to initiating work on or near ERP sites, the Environmental Office would be notified to ensure compliance with all environmental and safety guidelines. This includes ensuring that any disturbance to existing remediation infrastructure, such as groundwater monitoring wells, is minimized and properly coordinated. Ebbing ANG Base would also collaborate with the Arkansas Department of Environmental Quality (ADEQ) or other relevant agencies, if required, for any activities involving ERP sites.

For ERP sites potentially affected by PFAS contamination, construction activities would avoid these areas to the greatest extent feasible. If avoidance is not possible, all actions would be coordinated with ADEQ, the ERP Manager, and other applicable stakeholders. The DAF is actively advancing investigations at identified PFAS sites under the CERCLA process, including baseline ecological and human health risk assessments.

If contaminated soils need to be removed, transported, treated, or disposed of, all activities would comply with Resource Conservation and Recovery Act regulations for material characterization, transportation, and disposal. Additionally, worker safety would be prioritized through pre-construction site safety briefings. These briefings would include distribution of material safety data sheets, information on the potential presence of hazardous constituents, and detailed safe work practices to mitigate risks to worker health.

With the implementation of these procedures, including strict adherence to CERCLA and Resource Conservation and Recovery Act regulations, there would be no significant effects to ERP sites or human health during construction. Ongoing coordination with the Environmental Office, ADEQ, and other regulatory agencies will ensure that all activities remain compliant with applicable environmental standards and LUCs.

3.3.2.1.2 Airspace and Ranges

The primary source of land use effects in the airspace ROI is the change in noise levels from FMS PTC operations. As stated in Section 2.1.1.3, *Proposed Action*, *Munitions and Countermeasure*

Use, DAF would expend approximately 8,000 cartridges of chaff and 4,000 flares in Hog A/B MOAs, the Shirley MOAs, and Razorback Range. Countermeasures are already expended within these authorized airspace units, which does not present a change in activities that would affect underlying land use compatibility. Munitions would either be expended in Razorback Range or Fort Johnson (formerly Fort Polk), Louisiana, both of which are approved areas for inert and live weapons releases. Chaff and flares would not affect ground or water quality because of sparse distribution across the airspace (see Section 3.7.2.1.2, *Physical Resources, Airspace and Ranges)*. Additionally, no significant effects to wildlife would result from increased countermeasure use (Section 3.6.2.1.2, *Biological Resources, Airspace and Ranges*). As a result, there would be no land use effects from countermeasure use under the Proposed Action. The remainder of this section addresses FMS PTC operations in the airspace.

The proposed airspace is the same as the No Action Alternative and the underlying land uses potentially exposed to increased noise are generally the same as those described in the 2023 FMS PTC EIS, § 3.4.4.2. Noise-sensitive land uses consist of residential areas and areas protected for their quiet and special qualities of naturalness (e.g., Wilderness Areas and Wild and Scenic Rivers). This analysis also considers other areas including those used for outdoor recreation, outdoor occupational activities, agriculture, and resource extractive and energy productive uses.

Aircraft Operations and Events

Section 3.2.2.1, *Noise, Proposed Action,* presents the changes in noise levels in the airspace under the Proposed Action. The wide variety of land uses and associated activities throughout the airspace ROI would experience time-averaged noise-level changes ranging from a decrease of L_{dnmr} 6.3 dBA to an increase of L_{dnmr} 3.1 dBA (decrease of DNL 6 dBA to an increase of DNL 3 dBA). Resulting noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA and, therefore, be compatible with all land use categories in developed areas under DoD and FAA guidelines. Overall, the number of daily events exceeding 85 dBA L_{max} in the airspace would not appreciably increase or would be reduced from the No Action Alternative and supersonic operations would result in slightly lower time-averaged supersonic noise levels in the airspace.

As described in Section 3.3.1.2, *Airspace and Ranges*, and presented in the 2023 FMS PTC EIS, Table 3.4-2, approximately 30% of the airspace ROI consists of federal or state-managed lands, with defined purposes and management frameworks, that are considered to be noise sensitive. Changes in noise levels that were identified above as not being significant would not necessarily be applicable to noise-sensitive land uses. These include national forests, wildlife refuges, national parks, recreation areas, Wilderness Areas, Wild and Scenic Rivers, state parks, hunting areas, and other managed natural areas that not only support specific outdoor recreational activities but also provide pristine and quiet settings. The 2023 FMS PTC EIS, Appendix B, § B.1.2 provides additional information on noise effects on land use and recreation, including discussions on how aircraft overflights affect recreation (§ B.1.2.2), noise effects on wilderness characteristics (§ B.1.2.3), visual effects from low-flying aircraft on wilderness (§ B.1.2.4) and effects from countermeasure use on wilderness characteristics (§ B.1.2.5).

Airspace units that would not experience a change in noise levels or would result in a decrease in noise levels compared to the No Action Alternative (**Table 3.2-9**) would not have additional effects to noise-sensitive land uses above those described in the 2023 FMS PTC EIS, § 3.4.4.2. Therefore, the remainder of this analysis considers potential effects to noise-sensitive land uses

under the Hog B MOA (western portion)/MTRs overlap, the Shirley A MOA/MTRs overlap, VR-189, VR-1103, VR-1113, IR-117, IR-120, IR-121, the IR-117/VR-1113 overlap, the IR-120/VR-1102 overlap, the IR-121/VR-1103 overlap, and the IR-164/VR-1104 overlap. There are no noise-sensitive land uses under R-2401A/B and R-2402A/B.

Portions of the Ouachita National Forest management unit underlie multiple sections of the airspace, including the Hog B MOA (western portion)/MTRs overlap and multiple MTRs where noise levels would increase between L_{dnmr} 0.6 and 3.1 dBA (DNL 0 and 3 dBA). Additionally, a small portion of the Ozark-St. Francis National Forest management unit occurs under the Shirley A MOA/MTRs overlap where noise levels would increase by L_{dnmr} 0.7 dBA (no change in DNL) (**Figure 3.3-4**). However, noise levels in these areas would not exceed L_{dnmr} 59.1 dBA (DNL 55.5 dBA). This small level of noise increase may be noticeable in these portions of the national forests due to the otherwise quiet setting, but outdoor recreation activities in the Ouachita National Forest and Ozark-St. Francis National Forest management units would not be affected to a significant level based on DoD and FAA land use compatibility guidelines for outdoor recreational uses.

The Black Fork Mountain Wilderness underlies the Hog B MOA (western portion)/MTRs overlap; Hurricane Creek Wilderness underlies the Shirley A MOA/MTRs overlap; and a very small portion of the Caney Creek Wilderness underlies the IR-164/VR-1104 overlap. Noise levels in these areas would increase between L_{dnmr} 0.6 and 1 dBA (up to DNL 0.5 dBA) but would not exceed L_{dnmr} 54.9 dBA (DNL 52 dBA) (**Figure 3.3-5** and Appendix D, *Land Use*). The 2023 FMS PTC EIS, Appendix B, § B.1.2.3, describes noise effects on wilderness characteristics. Visitors of Wilderness Areas may perceive the increased noise exposure as an adverse effect. Specifically, the change in the soundscape may affect wilderness visitors' perceptions of solitude or primitive and unconfined recreation quality of the Black Fork Mountain, Hurricane Creek, and Caney Creek Wilderness Areas. The operational floors of the Hog B MOA (western portion)/MTRs overlap reaches down to 500 feet AGL and the operational floors of the Shirley A MOA/MTRs and the IR-164/VR-1104 overlaps reach down to 100 feet AGL. However, the vast majority (approximately 90%) of FMS PTC operations would occur above 10,000 feet MSL. Therefore, it is not likely that low-level overflights would be seen by Wilderness Area visitors. Wildlife that occupies these Wilderness Areas contributes to the area's natural quality. Section 3.6.2.1.2, *Biological Resources, Airspace and Range*s, describes potential effects to wildlife and found that there would be no significant effects to individuals or populations. In general, aircraft operations have no effect on the remaining wilderness qualities (untrammeled, undeveloped, or other features of value). Furthermore, since these areas already experience aircraft overflights and the operational floors have not changed, the Proposed Action would not introduce a new activity or stressor over Wilderness Areas. Visitors of the Black Fork Mountain, Hurricane Creek, and Caney Creek Wilderness Areas may experience adverse effects to the solitude or primitive and unconfined recreation quality from small increases in time-averaged noise levels, but the overall wilderness characteristics would not be degraded and no significant effects to wilderness from FMS PTC operations in the airspace would occur.

Hurricane Creek Wild and Scenic River and the eastern portion of Mulberry Wild and Scenic River underlie the Shirley A MOA/MTRs overlap. Additionally, southern portions of the Cossatot and Little Missouri Wild and Scenic Rivers occur under the IR-164/VR-1104 overlap. Noise levels in these areas would increase between L_{dnmr} 0.7 dBA and L_{dnmr} 1 dBA (no change in DNL and increase of DNL 1.5 dBA), but would not exceed L_{dnmr} 54.9 dBA (DNL 52 dBA) (**Figure 3.3-5**). Visitors of

these Wild and Scenic Rivers may perceive the small increases in time-averaged noise levels as adverse effects to the recreational quality. The operational floors of the Shirley A MOA/MTRs overlap and the IR-164/VR-1104 overlap both reach down to 100 feet AGL. Since approximately 90% of FMS PTC operations occur above 10,000 feet MSL, adverse effects to the scenic quality from low-level aircraft overflights may occur but are not considered likely. Wildlife and habitats within Wild and Scenic Rivers contribute to their ecological, fish, and wildlife values. Section 3.6.2.1.2, *Biological Resources, Airspace and Range*s, describe potential effects to wildlife and found that there would be no significant effects to individuals or populations. Additionally, Section 3.7.2.1.2, *Physical Resources, Airspace and Ranges,* concluded that there would be no significant effects to soil or water resources under the airspace. Similarly, potential effects to historic and cultural values are discussed in Section 3.5.2.1.2, *Cultural Resources, Airspace and Ranges,* which concluded there would be no adverse effects to archaeological resources, architectural resources, or traditional cultural properties. Overall, while adverse effects to scenic and recreation values may occur, they are not considered likely because time-averaged noise levels would only increase by 1 dBA or less and only a small percentage of FMS PTC operations would occur at altitudes that could be visible from the ground. There would be no significant effects to ecologic, fish and wildlife, historic, or cultural values and there would be no effect to geologic values because no ground-disturbing activities are proposed. Therefore, the overall outstanding resource values of Wild and Scenic Rivers would not be degraded to a significant level under the Proposed Action.

State-managed lands under the MTRs where noise levels would slightly increase between L_{dnmr} 1 to 2.9 dBA (DNL 1.5 and 2.8 dBA) include state parks and wildlife management areas; resulting noise levels would be below L_{dnmr} 59.1 dBA (DNL 55.5 dBA). While noise changes in these areas may be noticeable, no significant effects are expected because the resulting noise levels would still be compatible with outdoor recreation uses and no significant effects to wildlife are anticipated in these areas (Section 3.6.2.1.2, *Biological Resources, Airspace and Ranges*).

3.3.2.2 Alternative 1

The analysis of land use effects evaluates land use compatibility in relation to changes in noise exposure from the No Action Alternative. There are no ERP land use constraints associated with Alternative 1.

3.3.2.2.1 Installation and Surrounding Area

The land use analysis for Alternative 1 evaluates land use compatibility in relation to changes in noise exposure from the No Action Alternative. Compatibility of these land uses with noise exposure is shown in **Table 3.3-1**. This analysis is also complemented by the analysis of compatibility of projected sound levels for representative noise-sensitive locations in the surrounding area, including schools, hospitals, parks, and places of worship (see **Table 3.2-13**). The accident potential hazard associated with Alternative 1 is considered negligible (see **Table 3.1-1**). Therefore, Alternative 1 would not affect land use compatibility from aircraft accident risks.

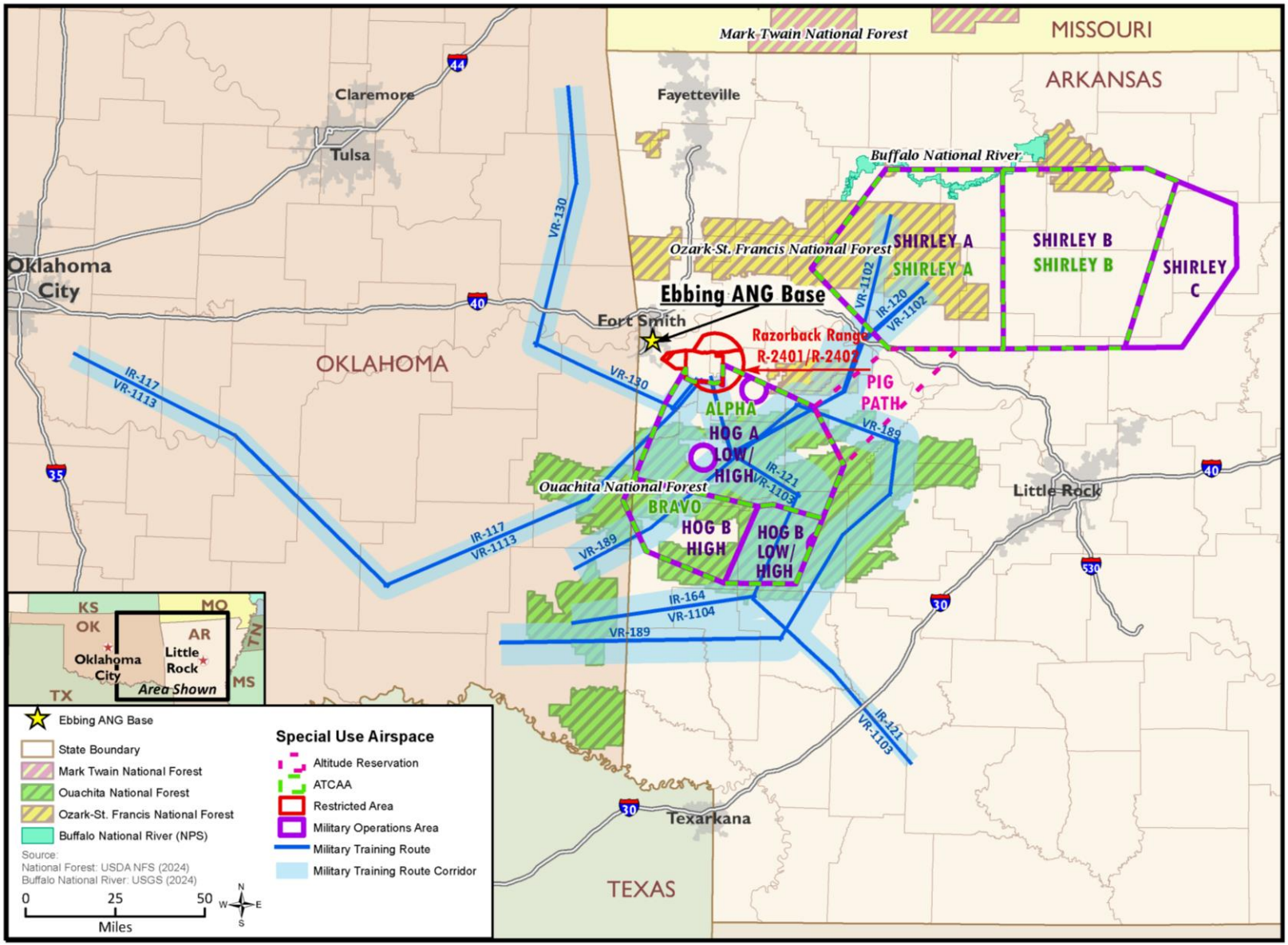
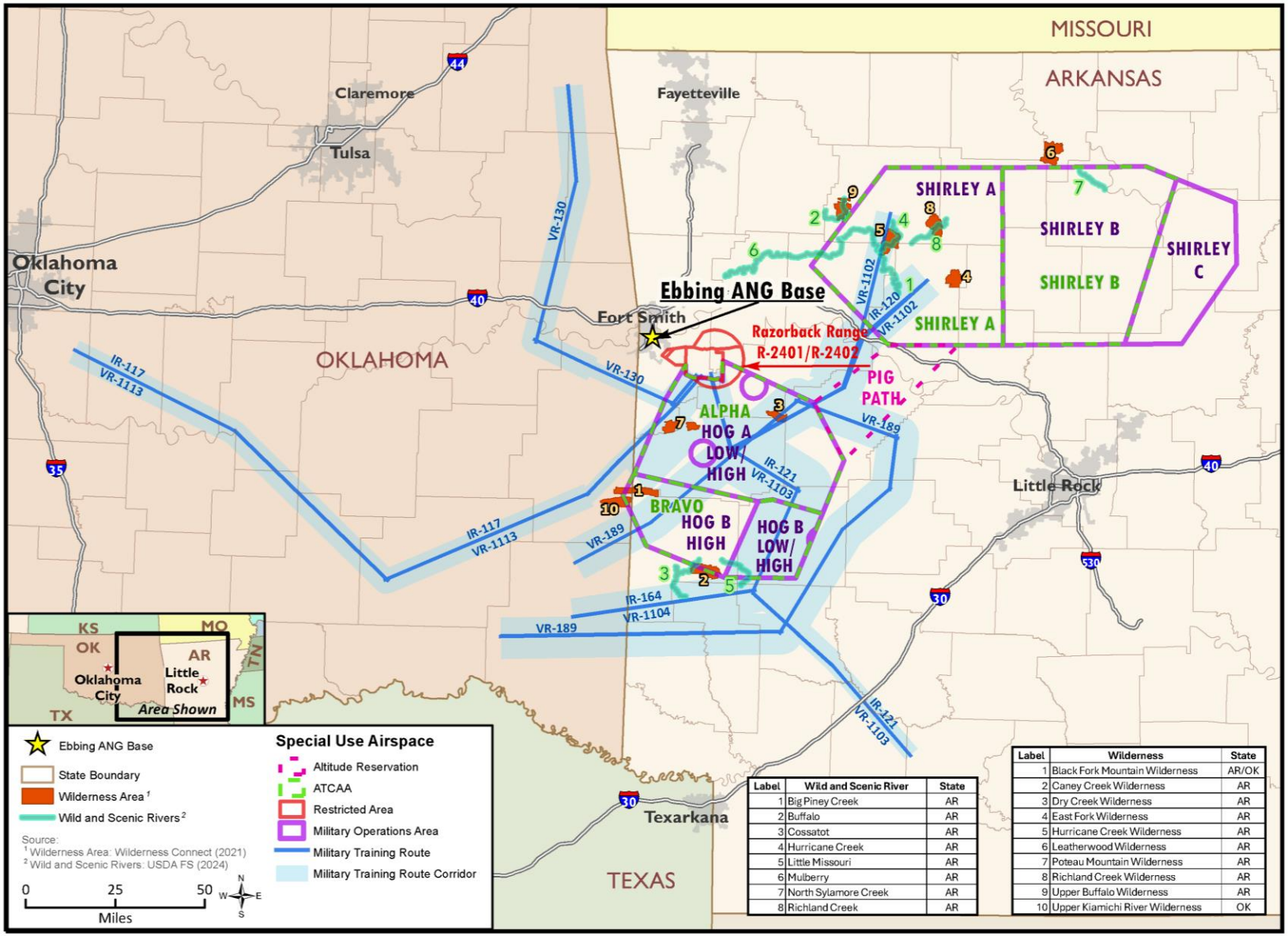


Figure 3.3-4. National Forest Management Units and National Park Unit Under the Airspace ROI



Label	Wild and Scenic River	State
1	Big Piney Creek	AR
2	Buffalo	AR
3	Cossatot	AR
4	Hurricane Creek	AR
5	Little Missouri	AR
6	Mulberry	AR
7	North Sylamore Creek	AR
8	Richland Creek	AR

Label	Wilderness	State
1	Black Fork Mountain Wilderness	AR/OK
2	Caney Creek Wilderness	AR
3	Dry Creek Wilderness	AR
4	East Fork Wilderness	AR
5	Hurricane Creek Wilderness	AR
6	Leatherwood Wilderness	AR
7	Poteau Mountain Wilderness	AR
8	Richland Creek Wilderness	AR
9	Upper Buffalo Wilderness	AR
10	Upper Kiamichi River Wilderness	OK

Figure 3.3-5. Wilderness Areas and Wild and Scenic Rivers Under the Airspace ROI

West VLP Site Subalternative

Figure 3.3-6 shows the projected change in noise exposure compared to the No Action Alternative and **Table 3.3-5** quantifies the area affected by land use category and noise exposure in 5 dB increments. The table also indicates compatibility of these land uses as shown in **Table 3.3-1**. This analysis is complemented by the analysis of compatibility of projected sound levels for representative noise-sensitive locations in the surrounding area, including schools, hospitals, parks, and places of worship (see Section 3.2.2.2.1, *Noise, Installation and Surrounding Area*, and **Table 3.2-13**.

Under Alternative 1, West VLP Site Subalternative, the area outside the airport boundary exposed to noise levels of DNL 65 dBA and greater would increase by 863 acres to a total of 7,299 acres. Notably, the area of residential land exposed to noise of DNL 65 dBA and greater would increase by 322 acres to a total of 1,687 acres. The estimated number of residents affected by this expansion is provided in **Table 3.2-12**.

Approximately 226 additional acres of residential land would experience noise levels of DNL 65 dBA up to 70 dBA, and noise levels of DNL 70 dBA up to 75 dBA would affect 85 additional acres. As **Table 3.3-5** indicates, for noise exposure of DNL 65 dBA up to 75 dBA, where the local community determines that schools and residential use must be allowed, inclusion of NLR construction is recommended to minimize indoor-to-outdoor noise levels to acceptable levels. Normal permanent construction can be expected to provide an NLR of 20 dB, which somewhat offsets the effect of projected noise increases. Noise levels of DNL 75 dBA and greater would affect 11 additional acres of residential land and is not considered compatible, even with NLR measures. The effect on residential land use is adverse and significant but can be reduced through various noise mitigating measures (see Section 3.2.2.5, *Mitigations*).

An additional 143 acres of commercial land use would also be newly exposed to marginally compatible and incompatible noise levels. As indicated in **Table 3.3-5**, most commercial uses exposed to DNL 70 dBA to 80 dBA are compatible if associated structures have the requisite NLR construction. Those businesses and other commercial uses without it could experience incompatible noise levels. No additional acres of commercial land use lie within the DNL 80 dBA and greater contour.

Approximately 22 additional acres of public/quasi-public land would be exposed to noise levels of DNL 65 dBA and greater. Some of this land is public parkland and vacant land. The data for this land use category includes public facilities such as schools, hospitals, nursing homes, churches, concert halls, and government buildings, although some of these uses can also be found intermixed within other land uses (as shown in **Figure 3.3-6**). Compatibility of most of the land in this category would depend on specific uses and the use of NLR construction. Representative noise-sensitive locations in **Table 3.2-13**, many of which are within the public/quasi-public land use category, would experience noticeable increases in noise. Those without adequate NLR construction would experience adverse effects and incompatible conditions.

Table 3.3-5. Noise Exposure Surrounding Ebbing ANG Base/FSRA – Alternative 1, West VLP Site Subalternative

Land Use Category	DNL 65 dBA - Acres			DNL 70 dBA - Acres			DNL 75 dBA - Acres			≥ DNL 80 dBA - Acres			≥ DNL 65 dBA Total Acres		
	NAA	Alt 1	Change	NAA	Alt 1	Change	NAA	Alt 1	Change	NAA	Alt 1	Change	NAA	Alt 1	Change
Agricultural/Open Space/Vacant	838	858	+20	568	560	-8	242	283	+41	22	43	+21	1,670	1,744	+74
Commercial	536	603	+67	452	503	+51	111	136	+25	19	19	0	1,118	1,261	+143
Industrial	261	306	+45	184	110	-74	241	298	+57	17	42	+25	703	756	+53
Public/Quasi-Public	219	236	+17	120	135	+15	33	21	-12	6	8	+2	378	400	+22
Recreation	181	330	+149	1	23	+22	0	0	0	0	0	0	182	353	+171
Residential	929	1,155	+226	364	449	+85	72	83	+11	0	0	0	1,365	1,687	+322
Roadway/Infrastructure	521	590	+69	262	300	+38	102	113	+11	10	10	0	895	1,013	+118
Unclassified	2	2	+0	0	0	0	0	0	0	0	0	0	2	2	0
Water	86	39	-47	34	40	+6	3	4	+1	0	0	0	123	83	-40
Total	**3,573**	**4,119**	**+546**	**1,985**	**2,120**	**+135**	**804**	**938**	**+134**	**74**	**122**	**+48**	**6,436**	**7,299**	**+863**

Source: (Arkansas GIS Office, 2021)
Key: ≥ = greater than or equal to; - = minus; + = plus; Alt = Alternative; ANG = Air National Guard; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; FSRA = Fort Smith Regional Airport; GIS = geographic information system; NAA = No Action Alternative; NLR = Noise Level Reduction; VLP = Vertical Landing Pad
Note:
GIS data was aggregated into selected categories to allow correlation to FAA guidelines to the extent possible. Use this table in conjunction with **Table 3.3-1** for land use compatibility.

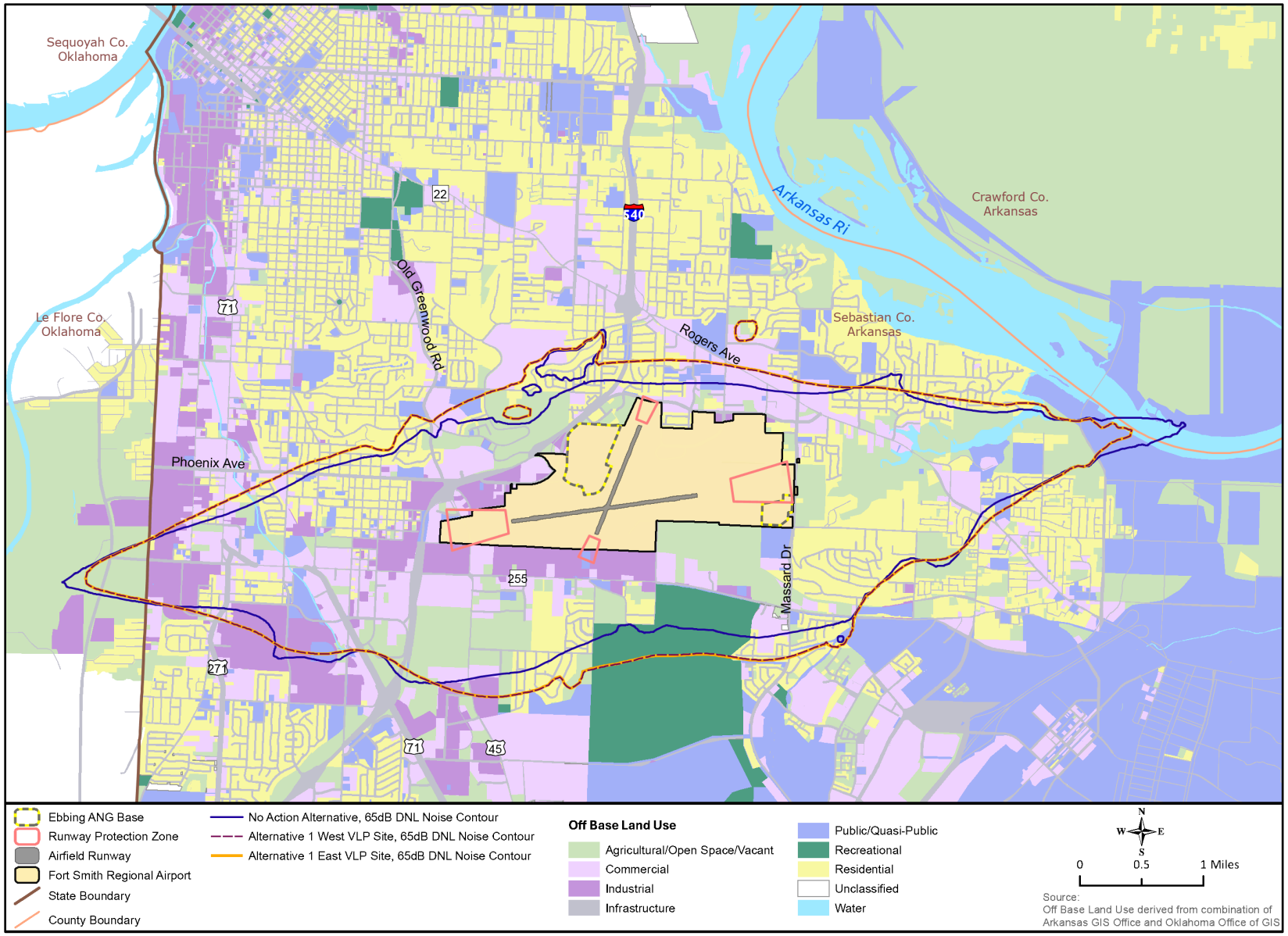


Figure 3.3-6. Noise Exposure and Land Use Surrounding Ebbing ANG Base/FSRA – Alternative 1

An estimated 53 additional acres of industrial use land would be newly exposed to levels of DNL 65 dBA or higher. Most industrial uses are compatible with higher noise exposure, provided occupied buildings where the public are received have NLR modifications or construction. Within the DNL 80 dBA and greater exposure area, some industrial uses may be incompatible (see **Table 3.3-5**). About 192 additional acres of agricultural land (excluding livestock farming), open space, vacant land, and land used for roads and infrastructure would be exposed to DNL 65 dBA and greater. These land uses are compatible with higher noise exposure of DNL 75 dBA and greater, of which 73 additional acres would be exposed. Potential development of vacant land or open space would likely follow the current zoning of the parcels. Where zoning does not incorporate new noise conditions at the airport, incompatible land development could occur on vacant parcels in the future.

About 171 additional acres of recreational use land would be newly exposed to noise levels of DNL 65 dBA and higher, mostly within the north part of Ben Geren Regional Park. These noise levels are compatible with underlying outdoor recreational uses, but NLR measures are recommended for future residential uses exposed to noise levels of greater than or equal to DNL 65 dBA and for current and future indoor facilities for public use in areas exposed to DNL 70 dBA and greater.

Based on the context of the effects (residential land areas) and the increase in noise exposure (intensity) greater than DNL 65 dBA, implementation of the Proposed Action, West VLP Site Subalternative would have significant effects on residential land uses surrounding Ebbing ANG Base/FSRA. Commercial and public/quasi-public uses in the surrounding area could experience moderate adverse effects.

East VLP Site Subalternative

As shown in **Figure 3.3-6** and in **Table 3.3-6**, additional acreage exposed under the East VLP Site Subalternative would be similar to the additional acreage exposed by the West VLP Site Subalternative (**Table 3.3-5**). Therefore, effects would also be like those described for the West VLP Site Subalternative. As such, based on the context of the effects (residential land areas) and the increase in noise exposure (intensity) greater than DNL 65 dBA, implementation of Alternative 1, West VLP Site Subalternative, would have significant effects on residential land uses surrounding Ebbing ANG Base/FSRA. Commercial and public/quasi-public uses in the surrounding area could experience moderate adverse effects.

Projected sound levels for representative noise-sensitive locations in the surrounding area, including schools, hospitals, parks, and places of worship are discussed in Section 3.2.2.2.1, *Noise, Installation and Surrounding Area*, and **Table 3.2-13**. The estimated number of residents affected by this expansion is provided in **Table 3.2-12**.

3.3.2.2.2 Airspace and Ranges

Aircraft operating under Alternative 1 will utilize the same airspace as the No Action Alternative. As detailed in Section 3.2.2.2, *Noise, Alternative 1*, the wide variety of land uses and associated activities throughout the airspace ROI would experience time-averaged noise-level changes ranging from a decrease of L_{dnmr} 6.4 dBA to an increase of L_{dnmr} 2 dBA (decrease of DNL 6 dBA to an increase of DNL 1.9 dBA). Overall, the number of daily events exceeding 85 dBA L_{max} in the airspace would not appreciably increase or would be reduced from the No Action Alternative and supersonic operations would result in slightly lower time-averaged supersonic noise levels in the airspace.

Table 3.3-6. Noise Exposure Surrounding Ebbing ANG Base/FSRA – Alternative 1, East VLP Site Subalternative

Land Use Category	DNL 65 dBA - Acres			DNL 70 dBA - Acres			DNL 75 dBA - Acres			> DNL 80 dBA - Acres			> DNL 65 dBA Total Acres		
	NAA	Alt 1	Change	NAA	Alt 1	Change	NAA	Alt 1	Change	NAA	Alt 1	Change	NAA	Alt 1	Change
Agricultural/Open Space/Vacant	838	857	+19	568	553	-15	242	280	+38	22	58	+36	1,670	1,748	+78
Commercial	536	605	+69	452	502	+50	111	137	+26	19	19	0	1,118	1,263	+145
Industrial	261	303	+42	184	121	-63	241	299	+58	17	33	+16	703	756	+53
Public/Quasi-Public	219	235	+16	120	136	+16	33	23	-10	6	5	-1	378	399	+21
Recreation	181	328	+147	1	26	+25	0	0	0	0	0	0	182	354	+172
Residential	929	1,158	+229	364	445	+81	72	85	+13	0	0	0	1,365	1,688	+323
Roadway/Infrastructure	521	589	+68	262	301	+39	102	113	+11	10	10	0	895	1,013	+118
Unclassified	2	2	0	0	0	0	0	0	0	0	0	0	2	2	0
Water	86	39	-47	34	40	+6	3	4	+1	0	0	0	123	83	-40
Total	**3,573**	**4,116**	**+543**	**1,985**	**2,124**	**+139**	**804**	**941**	**+137**	**74**	**125**	**+51**	**6,436**	**7,306**	**+870**

Source: (Arkansas GIS Office, 2021)
Key: > = greater than; - = minus; + = plus; Alt = Alternative; ANG = Air National Guard; dBA = A-weighted decibels; DNL = day-night average sound level; FAA = Federal Aviation Administration; FSRA = Fort Smith Regional Airport; GIS = geographic information system; NAA = No Action Alternative; NLR = Noise Level Reduction; VLP = Vertical Landing Pad
Note:
GIS data was aggregated into selected categories to allow correlation to FAA guidelines to the extent possible. Use this table in conjunction with **Table 3.3-1** for land use compatibility.

Small areas of the Ouachita National Forest management unit underlie multiple MTRs where noise levels would increase between L_{dnmr} 0.4 and 2 dBA (DNL 0.3 and 1.9 dBA). However, noise levels in these MTRs would not exceed L_{dnmr} 58.1 dBA (DNL 54.5 dBA). This small level of noise increase may be noticeable in these portions of the national forest due to the otherwise quiet setting, but outdoor recreation activities in the Ouachita National Forest management unit would not be affected to a significant level based on DoD and FAA land use compatibility guidelines for outdoor recreational uses.

There are no Wilderness Areas under airspace units that would experience increased noise from Alternative 1. Therefore, potential effects to Wilderness Areas would be the same as those described in the 2023 FMS PTC EIS § 3.4.4.2.

Multiple MTRs with underlying noise-sensitive land uses would experience time-averaged noise level increases under Alternative 1 (**Table 3.2-19**). Section 3.3.2.1.2, *Airspace and Ranges*, discusses the potential effects to noise-sensitive land uses from increased noise exposure. These noise-sensitive land uses (e.g., state-managed areas) would experience similar types of effects but at a reduced level of severity described for the Proposed Action and would not be significant.

3.3.2.3 No Action Alternative

3.3.2.3.1 Installation and Surrounding Area

Noise levels at Ebbing ANG Base/FSRA would be the same as those described and authorized in the 2023 FMS PTC EIS § 3.4.5.1 and ROD, which are described in Section 3.3.1.1, Installation and Surrounding Area. Therefore, significant adverse effects to residential land use would continue. Some commercial and public/quasi-public uses in the surrounding area could also continue to experience moderate adverse effects.

3.3.2.3.2 Airspace and Ranges

Noise levels under the airspace would be the same as what was described and authorized in the 2023 FMS PTC EIS § 3.3.4.2 and ROD. Noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA and would be compatible with all land use categories in developed areas under the airspace per DoD and FAA guidelines. Noise levels may cause perceived adverse effects on visitors to national forests, Wilderness Areas, Wild and Scenic Rivers, and other noise-sensitive land uses. However, the overall character of these areas would not be diminished to a significant level. Ultimately, there would be no additional land use effects from the 2023 FMS PTC EIS § 3.4.2.2.

3.3.2.4 Cumulative Effects

3.3.2.4.1 Installation and Surrounding Area

None of the projects listed in **Table 3.1-3** would result in additional cumulative effects above what was assessed in Section 3.3.2.1.1 and Section 3.3.2.2.1, *Installation and Surrounding Area*. However, the city will need to continue to review new housing projects for noise compatibility, particularly affordable housing in the areas surrounding Ebbing ANG Base/FSRA. The city's review and approval process can ensure compatibility of new development for low-, medium-, and high-density housing by incorporating FAA-recommended land use parameters. Development surrounding Ebbing ANG Base/FSRA will likely convert some vacant parcels into

commercial/industrial uses in the vicinity of the airport over the next 5 to 10 years. These uses are generally compatible with current noise levels. Future development of uses that congregate people (such as sports facilities, lodging establishments, or healthcare facilities) in areas within the DNL 65 dBA footprint may conflict with land use compatibility guidelines.

3.3.2.4.2 Airspace and Ranges

None of the projects listed in **Table 3.1-3** would result in additional cumulative effects above what was assessed in Section 3.3.2.1.2 and Section 3.3.2.2.2, *Airspace and Ranges*.

3.3.2.5 Mitigations

In general, mitigation measures can be implemented to avoid, minimize, remediate, or compensate for environmental effects. Avoiding, minimizing, or reducing potential effects has guided the development of multiple military aircraft basing alternatives. Mitigation measures are built or designed into the Proposed Action and Alternatives; applied to construction, operation, or maintenance involved in the action; or implemented as compensatory measures. However, there are no specific legal limits that apply to military noise. For example, in 1972, Congress passed the Noise Control Act, which imposed limitations on source noise levels of several types of equipment. However, because noise controls could, in some cases, reduce the combat effectiveness of military equipment, military equipment was exempted from these requirements. For the same reason, FAA limitations on civilian aircraft noise do not apply to military aircraft.

As a result of significant land use compatibility effects identified under the Proposed Action, mitigation for areas surrounding Ebbing ANG Base/FSRA would focus on achieving compatible indoor noise exposure based on the specific uses of affected occupied and inhabited structures. Noise mitigations presented previously in Section 3.2.2.5, *Noise, Mitigations*, would be applicable to address land use compatibility effects. Although every effort will be made by the DAF to fund identified mitigations, application of some proposed mitigation measures may be subject to Congressional appropriations.

3.4 SOCIOECONOMICS

As defined in the 2023 FMS PTC EIS § 3.5, socioeconomics comprise the basic attributes and resources associated with the human environment, particularly population and economic activity (i.e., employment, personal income, and economic growth).

Analysis Methodology

This SEIS uses the same analysis methodology as described in the 2023 FMS PTC EIS § 3.5.1 for socioeconomics resources.

3.4.1 Affected Environment

The ROI for this SEIS comprises the city of Fort Smith, Sebastian County, and the state of Arkansas. As discussed in **Table 3.1-1**, socioeconomic effects to areas under the airspace and ranges are not evaluated because the proposed use would be consistent with ongoing activities and there are no developments or other socioeconomic-related activities occurring under the airspace. Noise

analysis presented in Section 3.2, *Noise*, shows that time-averaged noise levels in the airspace would not exceed 65 dBA for the Proposed Action or Alternative 1. Therefore, socioeconomic resources under the airspace would not be significantly affected and are not evaluated further.

3.4.1.1 Installation and Surrounding Area

Population

The most recent population information from the U.S. Census Bureau for the state of Arkansas, Sebastian County, and the city of Fort Smith is shown in **Table 3.4-1**. There are currently 966 personnel and approximately 1,717 dependents for a total of 2,683 persons at Ebbing ANG Base, which is considered the baseline installation population for the analysis.

Table 3.4-1. Current Population in the ROI

Area	Census 2020 [a]	Estimate 2023 [b]	Population Percent Change (2020 to 2023) [b]	Projected (CY 2029) [c]
Arkansas	3,011,524	3,067,732	+1.9%	3,249,267
Sebastian County	127,799	129,098	+1.0%	138,552
Fort Smith	89,142	89,770	+0.7%	NA [d]

Sources: (USCB, 2023a; Arkansas Economic Development Institute, 2024)
Key: % = percent; + = plus; ANG = Air National Guard; CY = calendar year; ROI = region of influence; NA = not available
Notes:
a. Census, April 1, 2020 (USCB, 2023a).
b. Population Estimates, July 1, 2023 (USCB, 2023a).
c. Population projection presented is a point forecast from the Arkansas Economic Development Institute (Arkansas Economic Development Institute, 2024).
d. Population projection is not available from the Arkansas Economic Development Institute.

Employment and Income

Table 3.4-2 provides the most current employment and income data for the state of Arkansas, Sebastian County, and the city of Fort Smith. Between 2019 and 2023, the median household income and per capita personal income in the state of Arkansas has been below national levels (Arkansas Division of Workforce Services, 2024). Major industries in Sebastian County are educational services, and health care and social assistance, manufacturing, and retail trade (USCB, 2022a). There were more than 3,700 jobs in the construction industry, which accounts for 6.5% of the total civilian employed population (aged 16 years and over) in the county (USCB, 2022a).

Table 3.4-2. Current Employment and Income Statistics in the ROI

Area	Median Household Income	Per Capita Income	Total Employed [a]	Unemployment Rate [b]
Arkansas	$56,335	$41,261	1,319,483	3.3%
Sebastian County	$54,047	$31,868	57,689	3.4%
Fort Smith	$50,799	$32,809	40,561	NA

Sources: (USCB, 2022a; BLS, 2024)
Key: $ = dollar; % = percent; ANG = Air National Guard; ROI = region of influence; NA = not available from the Bureau of Labor Statistics Local Area Unemployment Statistics
Notes:
a. Total civilian labor force employed.
b. Unemployment rates for 2023, Annual Averages.

Ebbing ANG Base continues to be an important contributor to the local and regional economy of Fort Smith. Sebastian County ranks within the top 10 counties for defense expenditures according to a report by the Arkansas Economic Development Commission on the impact of military installations in Arkansas (Arkansas Economic Development Commission, 2016). In fiscal year 2023, total defense contract spending in the county was $85.5 million and defense personnel spending was $66.9 million (Office of Local Defense Community Cooperation, 2023).

Housing

There is no housing on Ebbing ANG Base and personnel must reside in the community. **Table 3.4-3** shows current housing statistics from the U.S. Census Bureau in the ROI.

Table 3.4-3. Current Housing Statistics in the ROI

Area	Housing Units	Median Housing Value	Vacant Housing Units		Rental Vacancy Rate
			Number	Percent	
Arkansas	1,371,709	$162,400	200,015	14.6%	6.9%
Sebastian County	56,926	$154,900	5,064	8.9%	6.3%
Fort Smith	39,945	$155,600	3,572	8.9%	5.8%

Source: (USCB, 2022b)
Key: $ = dollar; % = percent; ANG = Air National Guard; ROI = region of influence

Education

There are no public schools located on the installation. Dependents of personnel stationed at Ebbing ANG Base would attend schools based on the location of their residents but would likely attend one of the schools in Sebastian County. The number of students enrolled, certified teachers, and average student-to-teacher ratio during the 2024–2025 school year for public schools in Sebastian County are presented in **Table 3.4-4**. The student-to-teacher ratio in the county and the state is approximately 14:1. Class size in the Arkansas school district varies by grade between 20 to 25 students per teacher in any classroom (ADE, 2019).

Table 3.4-4. Current School Enrollment in the ROI

Area	Number of Students	Number of Certified Teachers	Student/Teacher Ratio [a]
Arkansas	474,337	32,808	14
Sebastian County	20,079	1,448	14

Sources: (ADE, 2024a; ADE, 2024b; ADE, 2024c)
Key: ANG = Air National Guard; ROI = region of influence
Note:
a. Rounded to the nearest whole number.

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

3.4.2.1.1 Installation and Surrounding Area

Population

Under the Proposed Action, there would be a total increase of 596 people to the ROI by 2029. The increase would have a minor effect on the total population in the ROI compared to the No

Action Alternative (less than 0.5% as shown in **Table 3.4-5**) and would remain with the range of the county's projected population for the year 2029 from the Arkansas Economic Development Institute (Arkansas Economic Development Institute, 2024). Population effects under the Proposed Action would not be significant.

Table 3.4-5. Population in the ROI Under the Proposed Action

Area	Census 2020 [a]	Projected Population (CY 2029) [b]	Incoming Personnel and Dependents Under the Proposed Action	Projected Population Under the Proposed Action (CY 2029)	
				Number	Percent Change
Arkansas	3,011,524	3,249,267	596	3,249,863	+0.02%
Sebastian County	127,799	138,552	596	139,148[c]	+0.43%

Source: (USCB, 2023a)
Key: % = percent; + = plus; ANG = Air National Guard; CY = calendar year; ROI = region of influence
Notes:
a. Census, April 1, 2020.
b. Population projection presented is a point forecast from the Arkansas Economic Development Institute.
c. Population projection for Sebastian County for 2029 from the Arkansas Economic Development Institute reports a lower confidence limit of 129,185; a point forecast of 138,552; and an upper confidence limit of 148,598.

Employment and Income

Potential effects to employment and income would be similar but greater than those under the No Action Alternative because of the increase in incoming personnel and additional construction. New construction of facilities and infrastructure would result in direct, indirect, and induced economic effects in terms of employment and income in the ROI. Cost details regarding the facilities and infrastructure are not available at this time but expenditures related to construction activities would result in near-term economic benefits to the ROI. Construction-related effects would last for the duration of the activities. Based on the number of construction jobs in the county (more than 3,700), there would be no additional permanent population increase beyond the projected population, as the local construction workforce would be expected to meet the labor demand.

The increase of personnel would be dependent on the total aircraft on base at any one time. However, the incoming personnel would result in beneficial effects to the local economy from additional wages and income. The direct employment (number of jobs) of the additional 271 personnel associated with the Proposed Action would result in indirect and induced employment and income in the ROI. The additional government jobs, payroll, and expenditures would maintain the status of Ebbing ANG Base as a top employer in the Fort Smith Metropolitan Statistical Area. The additional defense spending would be beneficial to the local and regional area.

Housing

Potential effects to housing would be similar but greater than those under the No Action Alternative because of the increase in incoming personnel. Under a maximum case scenario, in which all personnel migrated from outside the area and all 271 personnel required 1 housing unit each, an additional 271 housing units would be demanded by CY 2029 compared to the No Action Alternative. Additional housing may be required to support the end-state personnel numbers. The increased cost of housing and the availability of jobs would be expected to increase

corresponding to the average number of people per household. Housing costs could continue to rise as supply tries to catch up with demand before leveling off as new housing is constructed. Any lack of affordable homes in the interim may require homebuyers to expand their search to include areas outside their desired location and price range. Personnel associated with the foreign training units would choose types of housing in the ROI based on several factors including length of stay, market conditions (e.g., house and rent availability), and personal preferences (e.g., proximity to amenities, school districts).

Potential effects to housing and property values from noise are described in the 2023 FMS PTC EIS § 3.5.4.1, which estimated an average loss of 0.5% of property value per decibel increase. Noise effects to property values will vary from location to location depending on the many other factors that influence property values, including local market conditions. If an area does in fact suffer from lower property values associated with increased noise levels, this will result in lower property taxes collected. Over time, lower sales prices in these areas will result in lower appraised values.

Education

Based on the most recent Demographics Profile of the Military (DoD, 2022), 62.6% of DoD family members are children. Under these assumptions, 62.6% (approximately 204 people) of the 325 dependents associated with the incoming personnel would be children. Under a maximum case scenario, all 204 children would be of school age and would be enrolled in the ROI. Children of school age would be of varying ages and would attend the many schools throughout the ROI. Additional students may result in larger class sizes and additional pressures on resources and expenditures. However, education facilities in Sebastian County may benefit from the additional funding that would result from an increase in enrollment. Currently, the average class size throughout the county is below the state requirements and it would be anticipated to have teachers to support the incoming students. Therefore, potential effects to educational services would not be significant.

West and East VLP Site Subalternatives

Potential effects to socioeconomic resources under both subalternatives would be the same as described under Section 3.2.2.1, *Noise*, *Proposed Action*.

3.4.2.2 Alternative 1

Potential effects to socioeconomic resources would be the same as described under Section 3.4.2.3, No Action Alternative, since there would be no change to personnel numbers under this alternative compared to the No Action Alternative that would affect population, housing, or education services. There may be temporary and minor beneficial effects associated with the employment and income generated during VLP construction. It would be anticipated that construction employment would be filled by the local labor force based on the number of people employed by construction in the surrounding area (3,700 jobs in Sebastian County alone) and would not require an in-migration of workers to the ROI.

3.4.2.3 No Action Alternative

Under the No Action Alternative, the DAF would not expand the FMS PTC mission at Ebbing ANG Base and there would be no additional incoming personnel or dependents associated beyond what was authorized in the 2023 FMS PTC EIS and ROD. Socioeconomic resources would continue as described in Section 3.4.1, *Affected Environment*, of this SEIS. Therefore, no significant effects to socioeconomics resources would be anticipated under this alternative.

3.4.2.4 Cumulative Effects

Trends in population, employment and income, housing, and education would not substantially change under the Proposed Action or Alternative 1. Therefore, potential cumulative effects to socioeconomic resources would be similar to those described in the 2023 FMS PTC EIS § 3.12.2.3. Average annual population growth rates for the state of Arkansas, Sebastian County, and the city of Fort Smith would continue at 0.61%, 0.55%, and 0.47%, respectively. Continued annual employment growth in the construction industry would be necessary to support ongoing and reasonably foreseeable future construction activities. The additional personnel and dependents associated with the Proposed Action would add to the Ebbing ANG Base's contribution to employment in the Fort Smith Metropolitan Statistical Area and associated economic effect in Sebastian County alone. Housing prices are expected to continue to rise but may taper off as new construction becomes available for incoming personnel. Similarly, school enrollment is anticipated to increase in Sebastian County. As such, no significant cumulative effects to socioeconomic resources would be anticipated.

3.4.2.5 Mitigations

Potential noise effects may affect the population. Section 3.2.2.5, *Noise, Mitigations*, would address adverse noise effects to residential areas.

3.5 CULTURAL RESOURCES

The 2023 FMS PTC EIS § 3.7 defines cultural resources as any prehistoric or historic district, site, building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. This section provides updates to any archaeological resources, historic architectural resources, and traditional cultural resources associated with the SEIS ROI.

Analysis Methodology

The analysis methodology is the same as what was used and described in the 2023 FMS PTC EIS § 3.7.1. The ROI is considered equivalent to the Area of Potential Effects (APE), as defined by 36 CFR § 800.16(d). The APE for cultural resources is the geographic area or areas within which an undertaking (project, activity, program, or practice) may cause changes in the character or use of any historic properties present. The APE is influenced by the scale and nature of the undertaking and may be different for various kinds of effects caused by the undertaking. The APE for this undertaking includes the footprints of the proposed construction and renovation projects described in **Table 2.1-10**, Ebbing ANG Base/FSRA, the off-base/FSRA land exposed to greater than DNL 65 dBA

for each alternative under consideration, and the area under the airspace and MTRs to be utilized for each alternative. The APE accounts for foreseeable effects to historic properties, including physical, visual, and audible effects associated with implementation of the action at Ebbing ANG Base/FSRA, as well as an increase in noise associated with the aircraft training use of the associated airspace. DNL 65 dBA is the upper threshold for ambient sound on residential properties before there could be effects.

3.5.1 Affected Environment

3.5.1.1 Installation and Surrounding Area

Archaeological Resources

For purposes of this SEIS, the discussion of archaeological resources covers Ebbing ANG Base and FSRA. Archaeological historic properties at Ebbing ANG Base or within FSRA property have not changed from what is described in the 2023 FMS PTC EIS, § 3.7.2.1. It is unlikely that any significant archaeological resources are present within the APE on FSRA.

Architectural Resources

The 2023 FMS PTC EIS, § 3.7.2.1 describe architectural resources at Ebbing ANG Base, which have not changed. There are no National Register of Historic Places (NRHP)-listed or -eligible architectural resources at Ebbing ANG Base. The six buildings at Ebbing ANG Base that would be directly affected by the Proposed Action were also proposed for alterations or demolition in the 2023 FMS PTC EIS. As explained in § 3.7.2.1, none of these resources are eligible for listing in the NRHP.

Outside Ebbing ANG Base, the APE exposed to greater than DNL 65 dBA (the DNL 65 dBA contour APE) includes FSRA. There are no previously recorded architectural resources and no historic properties at FSRA (Arkansas Historic Preservation Program, 2024). The rest of this section updates information presented in the 2023 FMS PTC EIS § 3.7.2.1. There are 19 previously surveyed historic architectural resources within this area, of which 5 are not eligible for the NRHP, 2 are listed in the NRHP, 1 is listed in the Arkansas Register of Historic Places, and 11 are unevaluated (**Figure 3.5-1**) (Arkansas Historic Preservation Program, 2024).

The two resources listed in the NRHP are the Barling Segment of Old Highway (Hwy) 22, listed in the NRHP in 2007 as part of the Arkansas Highway History and Architectural Multiple Property Listing, and the Elmwood Cemetery, also known as the Poor Farm Cemetery, listed in the NRHP in 2018. The Arkansas Register-listed site is the Massard Prairie Battlefield/6th Kansas Calvary Camp Site; according to Arkansas Heritage, "surrounding development disqualifies the site from consideration for the National Register of Historic Places, [but] the site is nonetheless associated with the Civil War in western Arkansas and the Indian Territory (modern-day Oklahoma)" (Arkansas Heritage, 2024). The 11 unevaluated previously recorded resources are listed in **Table 3.5-1**.

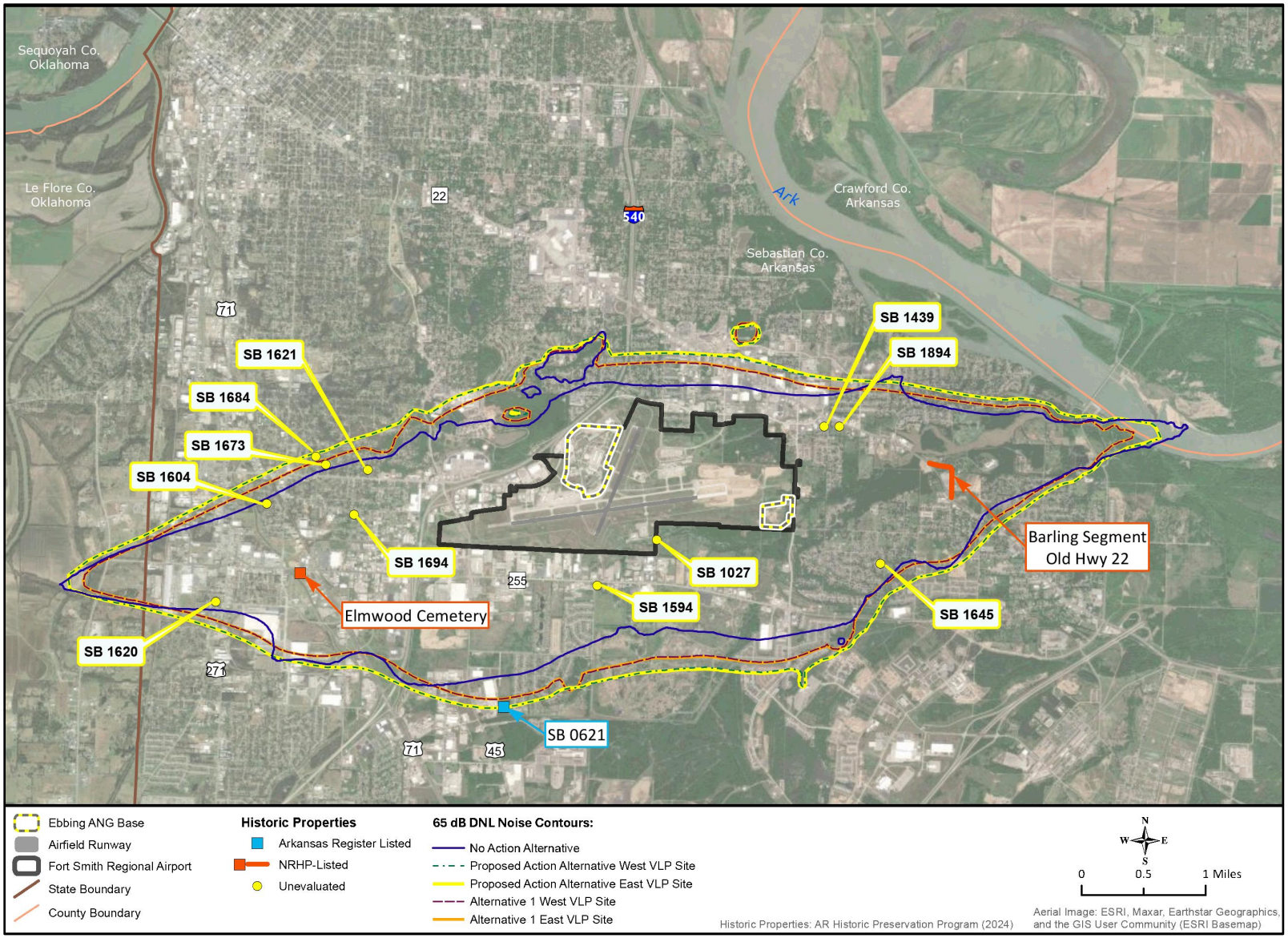


Figure 3.5-1. Historic Properties and Unevaluated Previously Recorded Resources Within the DNL 65 dBA Contour APE Surrounding Ebbing ANG Base/FSRA

Table 3.5-1. Unevaluated Previously Recorded Historic Resources in the DNL 65 dBA Contour APE

Resource No.	Resource Name	NRHP Status
SB 1027	Bridge 19464	No data
SB 1439	Sharum Hay Barn	Unknown
SB 1594	Carnall 4-H Building	Unknown
SB 1604	House at 1715 Tulsa Street	Unknown
SB 1620	House at 6216 S. 11th Street	Unknown
SB 1621	House at 2922 Osage Street	Unknown
SB 1645	House at 9308 Urban View Drive	Unknown
SB 1673	House at 4522 S. 25th Street	Unknown
SB 1684	House at 4416 S. 24th Street	Unknown
SB 1694	House at 5011 S. 28th Street	Unknown
SB 1894	Sharum Potato House	Unknown

Source: (Arkansas Historic Preservation Program, 2024)
Key: APE = Area of Potential Effects; dBA = A-weighted decibels; DNL = day-night average sound level; No. = Number; NRHP = National Register of Historic Places; S. = South

Traditional Resources

As described in the 2023 FMS PTC EIS § 3.7.2.1, Ebbing ANG Base and FSRA contain no known traditional resources. The DAF is seeking input from the federally recognized Tribes identified in Appendix B, *Public and Agency Involvement*, Section B.2.2, regarding any traditional resources that may be affected by the current alternatives. To date, three tribes have responded to the DAF. The Delaware Nation indicated they are not aware of cultural resources or historical properties of significance within the APE and deferred on further consultations for this proposal. The Quapaw Nation does not anticipate that the proposal will adversely impact any cultural resources, or human remains protected under the NHPA, NEPA, or the Native American Graves Protection and Repatriation Act. They requested if any artifacts or human remains are discovered during construction that the DAF would cease work immediately and contact the Quapaw Nation Historic Preservation Office. The Muscogee (Creek) Nation requested additional information from the DAF about the APE. On June 18, 2025, the DAF provided the information to the Historical and Cultural Preservation Department of the Muscogee (Creek) Nation.

3.5.1.2 Airspace and Ranges

There are 412 NRHP-listed properties located under the airspace and MTRs associated with the current alternatives, including 303 buildings, 64 structures, 28 districts, 12 sites, and 5 objects (National Park Service, 2024). No American Indian reservations or known traditional cultural properties underlie the airspace. Tribal consultation efforts to identify other traditional resources within the APE are described above in the prior section.

3.5.2 Environmental Consequences

The analysis of cultural resources effects for the Proposed Action and Alternative 1 evaluates effects in relation to the No Action Alternative, which is implementation of the Preferred Alternative for the FMS PTC as described in the 2023 ROD. Effects to historic properties resulting from the Proposed Action and Alternative 1 may include physical and visual effects associated with construction and renovation projects on Ebbing ANG Base/FSRA, noise effects to areas surrounding the base/FSRA, and noise effects to resources below the airspace to be utilized by the Proposed Action and Alternative 1. The DAF is consulting with the Arkansas SHPO, Oklahoma

SHPO, and interested Tribes regarding the effects of the Proposed Action and Alternative 1 to historic properties, in accordance with Section 106 of the National Historic Preservation Act. On April 30, 2025, the DAF sent letters initiating Section 106 consultation with the Arkansas and Oklahoma SHPOs and initiating government-to-government consultation with potentially interested Tribes. No responses have been received to date (see Appendix B, *Public and Agency Involvement*, Section B.2.2). Consultation regarding the No Action Alternative is described in the 2023 FMS PTC EIS § 3.7.4.

3.5.2.1 Proposed Action

3.5.2.1.1 Installation and Surrounding Area

Proposed increases in personnel would not affect cultural resources. Therefore, this analysis focuses on airfield operations and construction-related activities associated with facility requirements.

Airfield Operations

West VLP Site Subalternative

There are two NRHP-listed resources located in the portion of the APE defined by the DNL 65 dBA contour extending beyond Ebbing ANG Base/FSRA—the Barling Segment of Old Hwy 22, listed in the NRHP in 2007 as part of the Arkansas Highway History and Architectural Multiple Property Listing, and the Elmwood Cemetery, also known as the Poor Farm Cemetery, listed in the NRHP in 2018 (Arkansas Historic Preservation Program, 2024). These two historic properties are considered "noise sensitive areas," as defined in paragraph 11-5b(10) of FAA Order 1050.1F. As stated in the FAA Order, "noise sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas, areas with wilderness characteristics, wildlife and waterfowl refuges, and cultural and historical sites." Both NRHP-listed properties would be located between the DNL 70 and 75 dBA contours under baseline conditions (No Action Alternative) and between the DNL 70 and 75 dBA contours for the Proposed Action, West VLP Site Subalternative. Thus, the potential noise effects to both properties are the same as those described in the 2023 FMS PTC EIS § 3.7.4.1, where physical effects to these resources due to noise or vibration are not anticipated. As such, the Proposed Action, West VLP Site Subalternative would result in no adverse effects to historic properties in the APE surrounding Ebbing ANG Base/FSRA.

The analysis also considered potential effects to the 11 unevaluated previously recorded architectural resources identified by the records review. As discussed in the 2023 FMS PTC EIS § 3.7.4.1, direct effects resulting from vibration are very unlikely, but audible changes to the properties' settings need to be considered. Eight of the 11 unevaluated previously recorded architectural resources were addressed in the 2023 FMS PTC EIS Table 3.7-1 (SB 1027, SB 1594, SB 1604, SB 1620, SB 1621, SB 1645, SB 1673, SB 1694). Five of these resources (SB 1604, SB 1620, SB 1621, SB 1645, SB 1694) would experience the same noise levels as the No Action Alternative. The remaining three of these resources would experience increased noise compared to the No Action Alternative: SB 1027 (increase from DNL 75 dBA to DNL 80 dBA), SB 1594 (increase from DNL 70 dBA to DNL 75 dBA), and SB 1673 (increase from DNL 60 dBA to DNL 65 dBA). However, as described in the 2023 FMS PTC EIS § 3.7.4.1, it is not anticipated that

increased noise levels would adversely affect any of these unevaluated previously recorded resources.

The records review for this SEIS identified three additional unevaluated previously recorded resources in the DNL 65 dBA APE surrounding Ebbing ANG Base/FSRA. Two of these (SB 1439 and SB 1894) would experience the same noise level (DNL 70 dBA) as the No Action Alternative, while one (SB 1684) would experience increased noise (DNL 65 dBA compared to DNL 60 dBA). SB 1439, the Sharum Hay Barn, currently serves as an event venue. It appears the residence historically associated with the barn is no longer extant. It exists in a highly altered setting with modern shopping centers to the immediate north and west, a modern senior living facility to the immediate south, and, based on Google Street View from 2023, new development under construction to the immediate east. Thus, setting cannot be considered an important character-defining feature of this property, and the increased noise levels would not affect any of the characteristics of the building that could qualify it for listing in the NRHP. SB 1894, the Sharum Potato House, is mapped at the location of a modern commercial business. It is not clear if the building was mismapped or replaced by the current building. Aerial photographs show some older buildings on the lot to the west of the commercial business; based on Google Street View from 2023, these buildings have been cleared. Thus, it appears likely the Sharum Potato House is no longer extant. If the Sharum Potato House is in fact part of the same complex as the Sharum Hay Barn, the same analysis presented for the Hay Barn would apply to this building. Like the six residences described in the 2023 FMS PTC EIS § 3.7.4.1, SB 1684 is a modest residence located in a mid-20th-century residential neighborhood and is unlikely to be individually eligible for listing in the NRHP. Even if the residence was considered eligible, the increased noise levels would not directly or indirectly affect the properties or diminish the qualities of the property that identify it as a mid-twentieth-century residence. Thus, the Proposed Action, West VLP Site Subalternative would result in no adverse effects to the unevaluated previously recorded resources located in the APE surrounding Ebbing ANG Base/FSRA.

East VLP Site Subalternative

Effects to archaeological historic properties, architectural historic properties, and traditional resources would be the same as those described in the West VLP Site Subalternative section except for effects to architectural resource SB 1594. Under the East VLP Site Subalternative there is no increase in noise levels for SB 1594 in comparison to the No Action Alternative. As such, the Proposed Action, East VLP Site Subalternative would result in no adverse effects to historic properties in the APE surrounding Ebbing ANG Base/FSRA.

Facility Requirements

Potential effects to archaeological historic properties and architectural historic properties or traditional resources from constructing the VLP at the West VLP Site and East VLP Site are the same for both sites and included in the discussion below.

Archaeological Resources

No effects to archaeological historic properties are anticipated from the Proposed Action. There are no previously documented historic properties in the APE, and prior surveys at Ebbing ANG Base and FSRA outside the APE have indicated extensive stratigraphic disturbance. It is, therefore, not expected that undiscovered cultural resources would be found during

implementation of the Proposed Action at Ebbing ANG Base or FSRA; however, in the event of an inadvertent discovery during ground-disturbing operations, the following specific actions would occur:

- The project manager would cease work immediately and the discovery would be reported to the 188 WG environmental manager, who would secure the location with an adequate buffer and notify the Commander and the National Guard Bureau cultural resources manager.
- The environmental manager would then continue to follow ANG standard operating procedures for cultural resource inadvertent discovery.

Therefore, there would be no adverse effects to archaeological historic properties with implementation of the Proposed Action.

Architectural Resources

Based on previous studies and a review of the Arkansas Historic Preservation Program survey records, there are no NRHP-listed or -eligible historic architectural resources located on Ebbing ANG Base or FSRA; thus, no aboveground historic properties would be affected by the construction and renovation projects associated with the Proposed Action (National Guard Bureau, 2007; Arkansas Historic Preservation Program, 2024). Noise effects to architectural resources in the APE surrounding Ebbing ANG Base/FSRA are discussed below for each of the VLP Site Subalternatives.

Traditional Resources

Ebbing ANG Base and FSRA contain no known traditional resources, and Tribal consultation to date has not identified any traditional resources in the project APE that may be affected by the Proposed Action (see Appendix B, *Public and Agency Involvement,* Section B.2.2). As such, no effects to traditional resources are anticipated for the Proposed Action.

3.5.2.1.2 Airspace and Ranges

The primary source of effects to cultural resources beneath the affected airspace is through sound and vibration. Under the Proposed Action, aircraft would continue to use the Hog MOA, the Shirley MOA, Razorback Range (R-2401 and R-2402), and MTRs consisting of various VRs and IRs. Noise levels within SUA would range from a decrease of L_{dnmr} 6.3 dBA to an increase of L_{dnmr} 2.5 dBA (a decrease of DNL 6 dBA to an increase of DNL 0.3 DNL) compared to the No Action Alternative. Changes in noise levels in the MTRs would range from a decrease of L_{dnmr} 3.5 dBA to an increase of L_{dnmr} 3.1 dBA (decrease of DNL 0.6 dBA DNL to an increase of DNL 3 dBA). However, noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA throughout the airspace. Overall, the number of daily events exceeding 85 dBA L_{max} in the airspace would not appreciably change from the 2023 FMS PTC EIS. Refer to Section 3.2.2.1, *Noise, Proposed Action*, for additional information on the noise analysis.

Scientific studies of the effects of noise and vibration on multiple types of historic properties have concluded that overpressures generated by subsonic overflight were well below established damage thresholds (see the 2023 FMS PTC EIS, Appendix C, § C.1.2.10). No adverse effects to historic properties under the airspace are expected at these levels.

Visual intrusions under the Proposed Action would be minimal and would not represent an increase sufficient to cause adverse effects to the settings of cultural resources. Due to the high altitude of the overflights, small size of the aircraft, and the high speeds, the aircraft would not be readily visible to observers on the ground. Although 11% of flights are expected to occur below 10,000 feet, the visibility of these aircraft is not expected to constitute an adverse effect to the setting of any of the historic properties beneath the airspace.

Proposed use of the airspace would be similar to ongoing training operations, although frequency would be increased under the Proposed Action. Given the current use of the airspace and the nature of the proposed future use of the project area, there would be no adverse effects to NRHP-eligible or -listed archaeological resources, architectural resources, or traditional cultural properties with implementation of the Proposed Action.

3.5.2.2 Alternative 1

3.5.2.2.1 Installation and Surrounding Area

Airfield Operations

West VLP Site Subalternative

There are two NRHP-listed resources located in the portion of the APE defined by the DNL 65 dBA contour extending beyond Ebbing ANG Base and FSRA—the Barling Segment of Old Hwy 22 and the Elmwood Cemetery, also known as the Poor Farm Cemetery (Arkansas Historic Preservation Program, 2024). Both NRHP-listed properties would be located between the DNL 70 and 75 dBA contours for Alternative 1, West VLP Site Subalternative, which would not change and potential noise effects to both properties are the same as the No Action Alternative. Likewise, as described in the 2023 FMS PTC EIS § 3.7.4.1, physical effects to these resources due to noise or vibration are not anticipated. As such, the Alternative 1, West VLP Site Subalternative would result in no adverse effects to historic properties in the APE surrounding Ebbing ANG Base/FSRA.

The analysis also considered potential effects to 10 unevaluated previously recorded architectural resources identified by the records review; SB 1684, which as discussed for the Proposed Action, falls outside the DNL 65 dBA noise contour, and thus outside the APE, for Alternative 1, West VLP Subalternative. As discussed in the 2023 FMS PTC EIS § 3.7.4.1, direct effects resulting from vibration are very unlikely, but audible changes to the properties' settings need to be considered. Eight of the 10 unevaluated previously recorded architectural resources were addressed in the 2023 FMS PTC EIS Table 3.7-1 (SB 1027, SB 1594, SB 1604, SB 1620, SB 1621, SB 1645, SB 1673, SB 1694). Six of these resources (SB 1594, SB 1604, SB 1620, SB 1621, SB 1645, SB 1694) would experience the same noise levels as the No Action Alternative. Two of these resources would experience increased noise compared to the No Action Alternative: SB 1027 (increase from DNL 75 dBA to DNL 80 dBA) and SB 1673 (increase from DNL 60 dBA to DNL 65 dBA). However, for the same reasons described in the 2023 FMS PTC EIS § 3.7.4.1, it is not anticipated that increased noise levels would adversely affect any of these unevaluated previously recorded resources.

The records review for this SEIS identified two additional unevaluated previously recorded resources in the DNL 65 dBA APE surrounding Ebbing ANG Base/FSRA. Both of these (SB 1439

and SB 1894) would experience less noise (DNL 65 dBA rather than DNL 70 dBA) under Alternative 1, West VLP Site Subalternative compared to the No Action Alternative. For the same reasons described in Section 3.5.2.1.1, *Installation and Surrounding Area*, the Alternative 1, West VLP Site Subalternative would result in no adverse effects to the unevaluated previously recorded resources located in the APE surrounding Ebbing ANG Base/FSRA.

East VLP Site Subalternative

Noise effects to the two NRHP-listed resources and 10 unevaluated previously recorded resources for the Alternative 1, East VLP Site Subalternative would be the same as those described for the Alternative 1, West VLP Site Subalternative. As such, the Alternative 1, East VLP Site Subalternative would result in no adverse effects to historic properties in the APE surrounding Ebbing ANG Base/FSRA.

Facility Requirements

Effects to archaeological historic properties, architectural historic properties, and traditional resources at Ebbing ANG Base and FSRA under Alternative 1 would be the same as the effects under the No Action Alternative, with the addition of one of the VLP Site Subalternatives, which was discussed in Section 3.5.2.1.1, *Installation and Surrounding Area*. No effects to archaeological historic properties are anticipated from Alternative 1. There are no previously documented historic properties in the APE, and prior surveys at Ebbing ANG Base and FSRA outside the APE have indicated extensive stratigraphic disturbance. It is, therefore, not expected that undiscovered cultural resources would be found during implementation of Alternative 1 at Ebbing ANG Base or FSRA; however, in the event of an inadvertent discovery during ground-disturbing operations, the same protocols would be followed as described in the Proposed Action. Therefore, there would be no adverse effects to archaeological historic properties with implementation of Alternative 1. Likewise, there are no NRHP-listed or -eligible historic architectural resources and no known traditional resources located on Ebbing ANG Base or FSRA; thus, no aboveground historic properties or traditional resources would be affected by the construction and renovation projects associated with Alternative 1 (National Guard Bureau, 2007; Arkansas Historic Preservation Program, 2024). Noise effects to architectural resources in the APE surrounding Ebbing ANG Base/FSRA are discussed above for each of the VLP Site Subalternatives.

3.5.2.2.2 Airspace and Ranges

Under Alternative 1, the number of airspace events, MTR events, nighttime operations, and munitions and countermeasures would not change from those listed in the 2023 FMS PTC EIS columns in **Table 2.1-2**, **Table 2.1-4**, **Table 2.1-6**, **Table 2.1-7**, and **Table 2.1-8.** Alternative 1 would have revised flight tracks and profiles within the airspace that would change noise levels in the airspace. Aircraft operating under Alternative 1 would utilize the same airspace as the No Action Alternative. Noise levels within SUA would range from a decrease of L_{dnmr} 6.4 dBA to an increase of L_{dnmr} 1.3 dBA (decrease of DNL 6 dBA to no change in DNL) compared to the No Action Alternative. Changes in noise levels in the MTRs would range from a decrease of L_{dnmr} 4.4 dBA to an increase of L_{dnmr} 2 dBA (decrease of DNL 1 dBA to an increase of DNL 1.9 dBA). However, noise levels would remain below L_{dnmr} 65 dBA and DNL 65 dBA throughout the airspace. Overall, the number of daily events exceeding 85 dBA L_{max} in the airspace would not

appreciably change from the 2023 FMS PTC EIS. Refer to Section 3.2.2.1, *Noise, Proposed Action*, for additional information on the noise analysis.

Changes in noise levels in the airspace for Alternative 1 would not be significant and as stated in Section 3.5.2.1.2, *Airspace and Ranges*, visual intrusions from aircraft would be minimal and would not cause adverse effects to the settings of cultural resources. Alternative 1 would result in no adverse effects to NRHP-eligible or -listed archaeological resources, architectural resources, or traditional cultural properties located under the airspace.

3.5.2.3 No Action Alternative

3.5.2.3.1 Installation and Surrounding Area

As discussed in the 2023 FMS PTC EIS § 3.7.4.1, there would be no adverse effects to archaeological historic properties and no effects to architectural historic properties or traditional resources located on Ebbing ANG Base or FSRA associated with implementation of the No Action Alternative. There would be no adverse effects to historic properties located in the portion of the APE surrounding Ebbing ANG Base/FSRA within the DNL 65 dBA noise contour.

Airspace and Ranges

There would be no adverse effects to NRHP-eligible or -listed archaeological resources, architectural resources, or traditional cultural properties located under the airspace associated with implementation of the No Action Alternative, as discussed in the 2023 FMS PTC EIS § 3.7.4.2. The DAF consulted with the Arkansas SHPO on its finding of effect for the No Action Alternative, (see the 2023 FMS PTC EIS, Appendix A, § A.2.1.1).

In a letter dated February 15, 2022, the Arkansas SHPO concurred with a finding of "no historic properties affected" pursuant to 36 CFR § 800.4(d)(1) for the proposed undertaking and did not respond to the second consultation letter and supporting documentation with the DAF's finding of no adverse effects to historic properties sent May 5, 2022.

3.5.2.4 Cumulative Effects

Table 3.1-3 describes other projects in the area to be considered when evaluating the cumulative effects of the SEIS proposed alternatives. The 2022 Installation Development Plan (IDP) for Ebbing ANG Base outlines several proposed capital improvements including new construction, renovations, and demolitions within the existing boundaries of the base. Since there are no historic properties identified at Ebbing ANG Base, as described above, these future actions have no potential to affect historic properties on base.

The Arkansas Department of Aeronautics 2036 Arkansas Statewide Airport System Plan Update anticipates that two municipal airports (Bentonville and Melbourne) located beneath or immediately adjacent to the training military airspace will move from Level 2 to Level 3, and the Mena Intermountain Municipal Airport located beneath the Hog MOA would be elevated to Level 5. Physical improvements at these airports may involve ground disturbance with the potential to directly affect cultural resources. Increased air service at these airports also could result in noise increases with the potential to affect the setting of cultural resources under the

airspace. The proposed Interstate (I-)49 extension project is outside the APE for the FMS PTC beddown at Ebbing ANG Base but represents a large-scale construction project involving significant ground disturbance with the potential to directly affect cultural resources and alter the landscape of the region. As such, both the Airport System Plan Update and the I-49 extension project are indicative of regional development trends that could affect the overall inventory of cultural resources in and around the city of Fort Smith and under the associated airspaces.

3.5.2.5 Mitigations

No new mitigations are proposed. As described in the 2023 FMS PTC EIS § 3.7.5, in response to the Cherokee Nation concern about the project's proximity to the Trail of Tears, and as mitigation for potential effects to undiscovered archaeological sites, contracting for the construction phase of the project will require monitoring of all ground-disturbing activities by an archaeologist meeting the Secretary of Interior's Standards. At the conclusion of monitoring, a report will be prepared and submitted to the Tribe and the Arkansas SHPO. Since construction activities have not commenced, no archaeological monitoring has occurred to date.

In the event of an inadvertent discovery during ground-disturbing operations, the following specific actions would occur:

- The project manager would cease work immediately, and the discovery would be reported to the 188 WG environmental manager, who would secure the location with an adequate buffer and notify the Commander and the National Guard Bureau cultural resources manager.
- The environmental manager would then continue to follow ANG standard operating procedures for inadvertent discovery of cultural resources.

3.6 BIOLOGICAL RESOURCES

The 2023 FMS PTC EIS § 3.8 defines biological resources, which is carried forward for this SEIS. Biological resources were organized into three categories: vegetation, general wildlife, and special status species. In this SEIS, special status species consist of species listed under the ESA, proposed for listing under the ESA, considered candidate species under the ESA, state-listed species, and migratory birds (particularly Birds of Conservation Concern); bald eagles (*Haliaeetus leucocephalus*); and golden eagles (*Aquila chrysaetos*).

Analysis Methodology

This SEIS uses the same analysis methodology as described in the 2023 FMS PTC EIS § 3.8.1, which focused on the location of species or habitats in proximity to proposed FMS PTC construction and airfield operations at Ebbing ANG Base/FSRA, as well as lands beneath the airspace where FMS PTC operations would occur. Habitats and species presence would be largely the same as those described in the 2023 FMS PTC EIS § 3.8.2, except where information has been updated and presented in the following subsections. Airfield operations at Ebbing ANG Base/FSRA and FMS PTC operations in the airspace would change under the Proposed

Action and Alternative 1. This SEIS evaluated potential direct, indirect, temporary and permanent effects associated with construction and use of facilities at Ebbing ANG Base/FSRA, airfield operations at FSRA, and FMS PTC operations within the airspace.

3.6.1 Affected Environment

Biological resources in the ROI are described in detail in the 2023 FMS PTC EIS § 3.8.2, based primarily on information from the installation's Integrated Natural Resources Management Plan (INRMP) (ARANG, 2020) and the USFWS Information for Planning and Consultation (IPaC) website. Summary descriptions are provided in the following subsections, with additional and updated information provided where applicable (e.g., additional information from the City of Fort Smith).

3.6.1.1 Installation and Surrounding Area

Vegetation

Vegetation communities at Ebbing ANG Base and FSRA have not changed from what was described in the 2023 FMS PTC EIS § 3.8.2.1.1. Ebbing ANG Base is comprised almost entirely (nearly 90%) of developed lands or managed and maintained landscape. FSRA is also predominantly maintained (routinely mowed). Biological field surveys conducted in 2019 identified five vegetation communities including maintained/landscaped, shrubland, disturbed grassland, woodland, and wetland/wet meadow, which are described in detail in the installation's INRMP (ARANG, 2020). Additional biological resource surveys have not been conducted since the completion of the 2023 FMS PTC EIS. The proposed construction areas on Ebbing ANG Base/FSRA and the surrounding area are in maintained and landscaped habitat, commonly associated with buildings and parking areas.

Wildlife

Wildlife species found on and around Ebbing ANG Base/FSRA are the same as those described in the 2023 FMS PTC EIS § 3.8.2.1.2. Overall, species consist of animals accustomed to disturbed areas and human activity, such as small mammals (including eight bat species), birds, reptiles, amphibians, and terrestrial and aquatic invertebrates. These species are monitored and managed under the Ebbing ANG Natural Resources Program, the USFWS, the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) for airport safety (USDA, 2024).

Special Status Species

ESA-listed species, ESA candidate species, and state-listed species known to occur or with the potential to occur on and near Ebbing ANG Base/FSRA, based on an IPaC query, the installation INRMP, and previous surveys, are listed in **Table 3.6-1**. Special status species are mostly the same as those included in the 2023 FMS PTC EIS (§ 3.8.2.1.3) except the tricolored bat (*Perimyotis subflavus*), which was proposed endangered in 2022 (87 Federal Register 56381) (USFWS, 2024a). The 2023 FMS PTC EIS § 3.8.1.2.3 describes potential occurrence of the federally endangered gray bat (*Myotis grisescens),* the northern long-eared bat (*Myotis septentrionalis*), the Indiana bat (*Myotis sodalis*), and the American burying beetle (*Nicrophorus*

americanus) on or near Ebbing ANG Base/FSRA. Tricolored bats are found in caves, abandoned mines, and road-associated culverts during the winter and typically roost in forested habitats during the spring, summer, and fall (USFWS, 2025). While threatened, endangered, and candidate species do have the potential to occur at Ebbing ANG Base/FSRA, there is no critical habitat designated on Ebbing ANG Base (ARANG, 2020) or within a 5-mile radius of Ebbing ANG Base/FSRA (USFWS, 2024a).

Table 3.6-1. Special Status Species Known to Occur or With the Potential to Occur at Ebbing ANG Base/FSRA

Common Name	Scientific Name [a]	Status	Potential for Occurrence on Ebbing ANG Base/FSRA [b]
Mammals			
Gray bat	*Myotis grisescens*	SE, FE	O
Northern long-eared bat	*Myotis septentrionalis*	SE, FE	P
Indiana bat	*Myotis sodalis*	FE	P
Tricolored bat	*Perimyotis subflavus*	PE	P
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	SGCN	P
Little brown bat	*Myotis lucifugus*	SGCN	P
Birds			
Piping plover	*Charadrius melodus*	FT	U
Eastern black rail	*Laterallus jamaicensis jamaicensis*	FT	U
Red knot	*Calidris canutus rufa*	FT	U
Insects			
American burying beetle	*Nicrophorus americanus*	SE, FT	P
Monarch butterfly	*Danaus plexippus*	PT	P
Plants			
Maple-leaf oak	*Quercus acerifolia*	ST	U
Opaque prairie sedge	*Carex opaca*	SE	U

Sources: (ANG, 2020a; ANG, 2020b; ARANG, 2020; USFWS, 2024a)
Key: ANG = Air National Guard; FC = Federal Candidate; FE = Federal Endangered; FSRA = Fort Smith Regional Airport; FT = Federal Threatened; O = observed; P = potential to occur; PE = Proposed Endangered; PT = Proposed Threatened; SE = State Endangered; SGCN = state species of greatest conservation need; ST = State Threatened; U = unlikely to occur; USFWS = United States Fish and Wildlife Service
Notes:
a. For details on species and habitat use, see the USFWS Environmental Conservation Online System available at https://ecos.fws.gov/ecp/.
b. Includes habitats within a 5-mile radius of Ebbing ANG Base/FSRA.

Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act. Information on migratory birds at Ebbing ANG Base/FSRA has not changed from what was presented in the 2023 FMS PTC EIS § 3.8.2.1.3. **Figure 3.6-1** shows the USFWS-designated Bird Conservation Regions (BCRs) that occur over Ebbing ANG Base/FSRA (NABCI, 2024). Aircraft operations and other human activities at FSRA continue to discourage use of migratory pathways during migration and follow a Bird-Aircraft Strike Hazard (BASH) Plan that provides guidance for BASH reduction in areas where flying operations are conducted (ARANG, 2002). **Table 3.6-2** lists migratory birds and their potential seasonal occurrence at Ebbing ANG Base/FSRA.

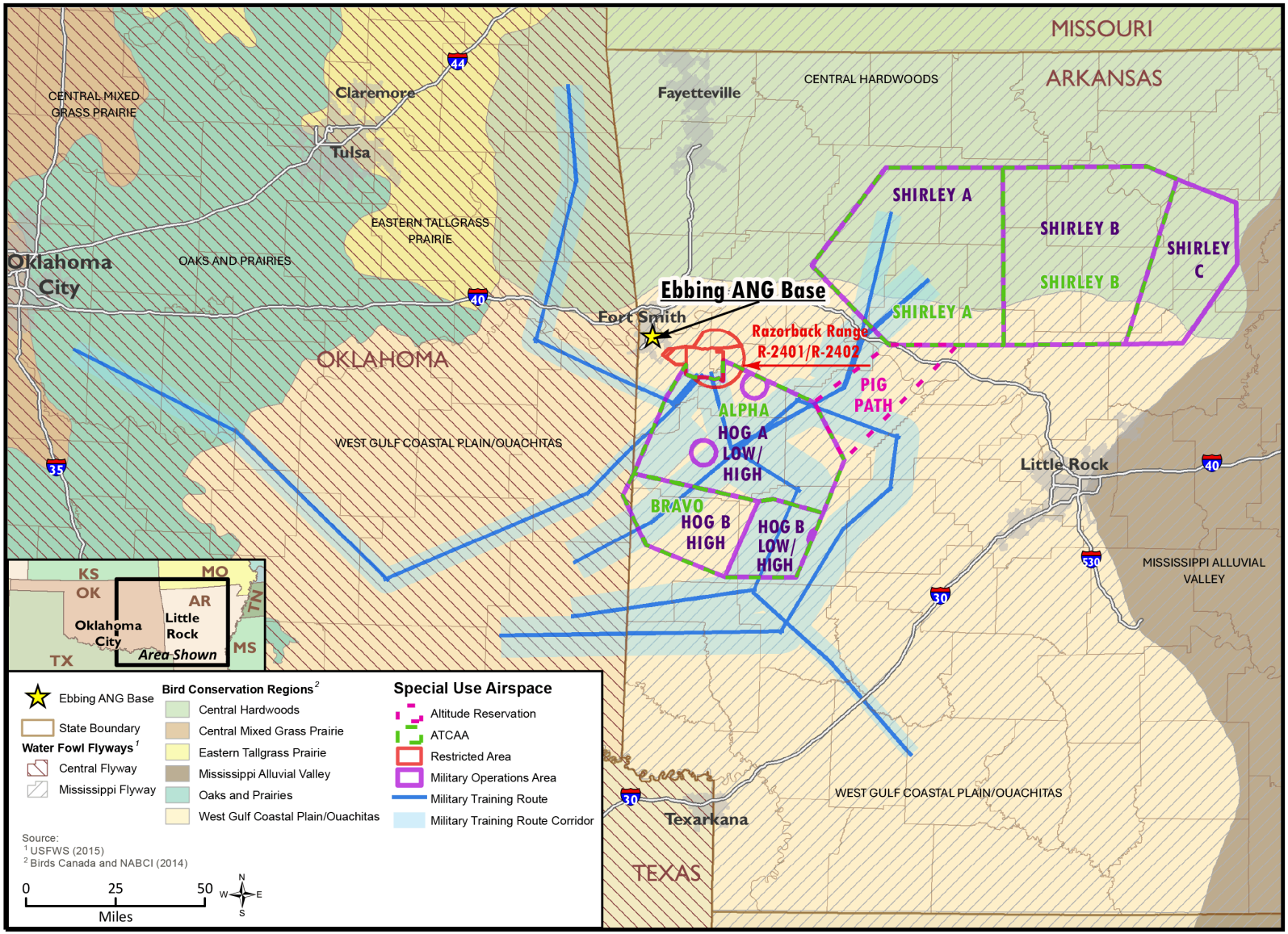


Figure 3.6-1. Ebbing ANG Base/FSRA Bird Conservation Regions

Table 3.6-2. Migratory Birds With Potential to Occur at Ebbing ANG Base/FSRA

Common Name	Scientific Name	Season	Potential for Occurrence at Ebbing ANG Base/FSRA
American golden-plover	*Pluvialis dominica*	Spring	U
Southeastern American kestrel	*Falco sparverius paulus*	Winter/Spring/Summer	P
Kentucky warbler	*Oporornis formosus*	Spring/Summer	P
Lesser yellowlegs	*Tringa flavipes*	Spring	U
Prairie warbler	*Dendroica discolor*	Spring/Summer	P
Prothonotary warbler	*Protonotaria citrea*	Spring/Summer	P
Red-headed woodpecker	*Melanerpes erythrocephalus*	Spring/Summer/Fall	P
Wood thrush	*Hylocichla mustelina*	Spring/Summer/Fall	P

Source: (USFWS, 2024a)
Key: ANG = Air National Guard; FSRA = Fort Smith Regional Airport; P = potential to occur; U = unlikely to occur

Bald and Golden Eagles

The bald eagle and golden eagle are protected by the Bald and Golden Eagle Protection Act (16 USC § 668c; 50 CFR § 22.3) of 1962. The bald eagle was removed from the list of threatened and endangered species in 2007 due to recovery. Information on bald eagles has not changed since the 2023 FMC PTC EIS § 3.8.2.1.3. In Arkansas, bald eagles are common and nest along rivers and lake shores throughout the state; however, no bald eagle nests have been documented at the installation (ANG, 2020b; ARANG, 2020). Golden eagles are not common in Arkansas; populations are nonbreeding and scarce (Cornell University, 2024). Neither golden eagles nor their nests have been documented on Ebbing ANG Base (ANG, 2020b; ARANG, 2020).

3.6.1.2 Airspace and Ranges

Vegetation and Wildlife

The proposed airspace and ranges are located above the Arkansas Valley ecoregion. Vegetation and wildlife in the airspace and ranges are described in the 2023 FMS PTC EIS § 3.8.2.2.1, which is incorporated by reference. This ecoregion contains a mix of forests, woodlands, savanna, prairies, and pasturelands that support a wide variety of wildlife species. Songbirds, waterfowl, raptors, and various woodpecker species occur throughout the region (Audubon, 2024). More than 100 species of amphibians and reptiles, including various species of frogs, toads, skinks, salamanders, turtles, lizards, and snakes, occur in Arkansas (Herps of Arkansas, 2021).

Special Status Species

Federal- and state-listed threatened and endangered species, species proposed for listing, and candidate species with potential to occur under the airspace are presented in **Table 3.6-3,** which are based off updated USFWS IPaC queries (USFWS, 2024b; USFWS, 2024c). Refer to the 2023 FMS PTC EIS § 3.8.2.2.2 for additional information. Designated critical habitat for four fish species (Arkansas river shiner [*Notropis Girardi*], leopard darter [*Percina pantherina*], peppered chub [*Macrhybopsis tetranema*], and yellowcheek darter [*Etheostoma moorei*]) and four clam species (Neosho mucket [*Lampsilis rafinesqueana*], rabbitsfoot [*Quadrula cylindrica*], Louisiana pigtoe (*Pleurobema riddellii*), and Ouachita fanshell [*Cyprogenia* cf. *aberti*]) occurs under the airspace (**Figure 3.6-2**).

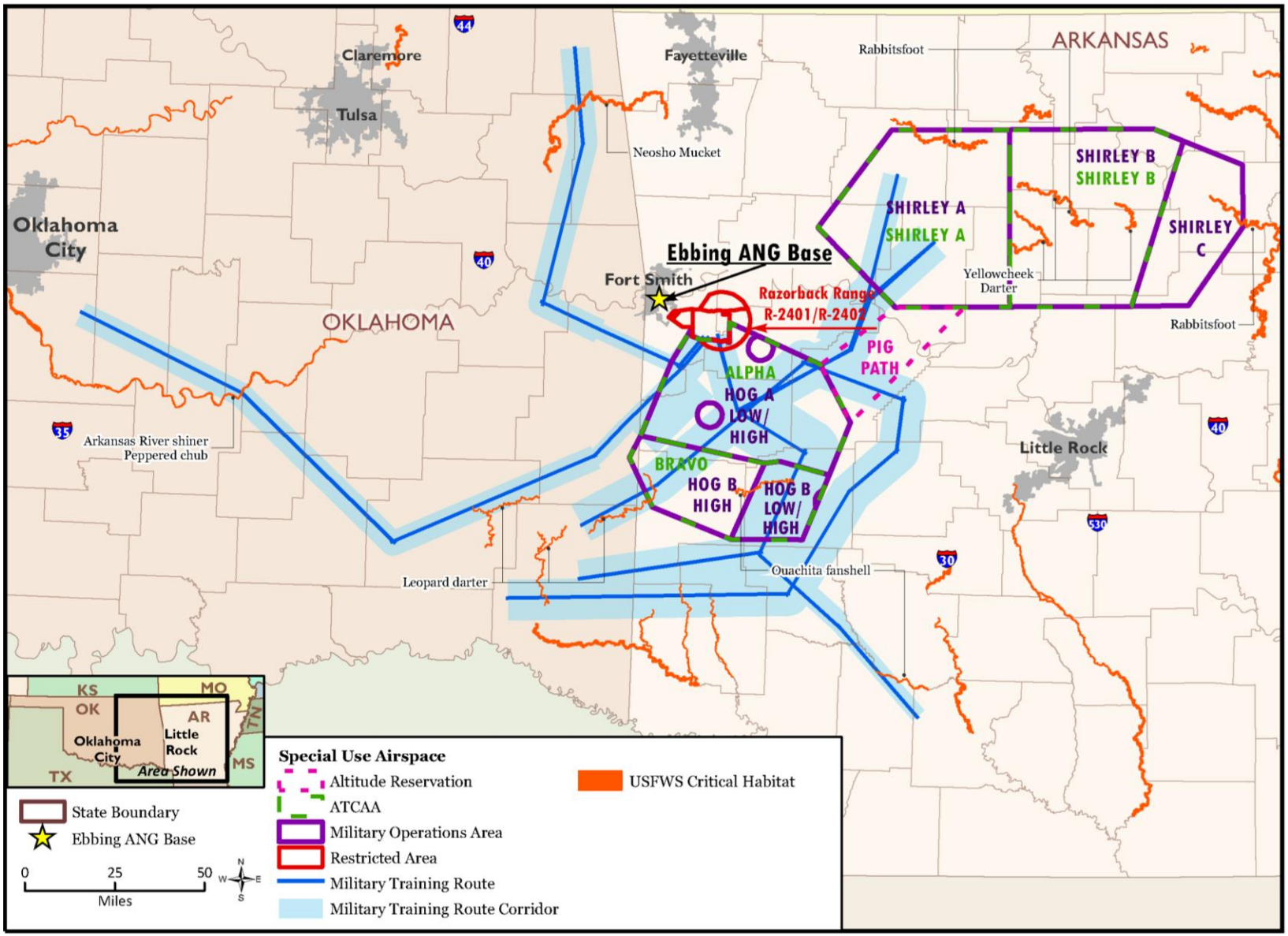


Figure 3.6-2. Critical Habitat Under the Airspace

Table 3.6-3. Federally Listed Species and Species Proposed for Listing Known to Occur or With the Potential to Occur Under the Airspace

Common Name	Scientific Name [a]	Status	Potential for Occurrence Under the Airspace	Critical Habitat Under the Airspace
Mammals				
Ozark big-eared bat	*Corynorhinus (Plecotus) townsendii ingens*	SE, FE	P	N/A
Gray bat	*Myotis grisescens*	SE, FE	P	N/A
Northern long-eared bat	*Myotis septentrionalis*	SE, FE	P	N/A
Indiana bat	*Myotis sodalis*	FE	P	None
Tricolored bat	*Perimyotis subflavus*	PE	P	N/A
Birds				
Piping plover	*Charadrius melodus*	FT	P	None
Eastern black rail	*Laterallus jamaicensis jamaicensis*	FT	P	N/A
Red knot	*Calidris canutus rufa*	FT	P	None
Whooping crane	*Grus americana*	FE	P	None
Whooping crane	*Grus americana*	EXPN	P	None
Red-cockaded woodpecker	*Dryobates borealis*	FT	P	N/A
Reptiles				
American alligator	*Alligator mississippiensis*	FT (Similarity of Appearance)	P	N/A
Alligator snapping turtle	*Macrochelys temminckii*	PT	P	N/A
Amphibians				
Ozark hellbender	*Cryptobranchus alleganiensis bishopi*	FE	P	N/A
Fishes				
Arkansas river shiner	*Notropis girardi*	FT	P	Yes
Leopard darter	*Percina pantherina*	FT	P	Yes
Ozark cavefish	*Amblyopsis rosae*	FT	P	N/A
Peppered chub	*Macrhybopsis tetranema*	FE	P	Yes
Yellowcheek darter	*Etheostoma moorei*	FE	P	Yes
Mollusks				
Arkansas fatmucket	*Lampsilis powellii*	FT	P	N/A
Neosho mucket	*Lampsilis rafinesqueana*	FE	P	Yes
Ouachita rock pocketbook	*Arcidens wheeleri*	FE	P	N/A
Pink mucket	*Lampsilis abrupta*	FE	P	N/A
Rabbitsfoot	*Quadrula cylindrica*	FT	P	Yes
Scaleshell mussel	*Leptodea leptodon*	FE	P	N/A
Snuffbox mussel	*Epioblasma triquetra*	FE	P	N/A
Speckled pocketbook	*Lampsilis streckeri*	FE	P	N/A
Spectaclecase	*Cumberlandia monodonta*	FE	P	N/A
Winged mapleleaf	*Quadrula fragosa*	FE	P	N/A
Louisiana pigtoe	*Pleurobema riddellii*	PT	P	Yes
Western fanshell	*Cyprogenia aberti*	FT	P	None
Ouachita fanshell	*Cyprogenia cf. aberti*	FT	P	Yes
Insects				
American burying beetle	*Nicrophorus americanus*	SE, FT	P	N/A
Monarch butterfly	*Danaus plexippus*	FC	P	N/A

Table 3.6-3. Federally Listed Species and Species Proposed for Listing Known to Occur or With the Potential to Occur Under the Airspace

Common Name	Scientific Name [a]	Status	Potential for Occurrence Under the Airspace	Critical Habitat Under the Airspace
Crustaceans				
Hell Creek cave crayfish	*Cambarus zophonastes*	FE	P	N/A
Flowering Plants				
No common name	*Geocarpon minimum*	SE, FT	P	N/A
Harperella	*Ptilimnium nodosum*	FE	P	N/A
Missouri bladderpod	*Physaria filiformis*	FT	P	N/A
Pondberry	*Lindera melissifolia*	FE	P	N/A

Sources: (ARANG, 2020; AGFC, 2024; ODWC, 2024; USFWS, 2024b; USFWS, 2024c)
Key: ANG = Air National Guard; EXPN = experimental population; FC = Federal Candidate; FE = Federal Endangered; FT = Federal Threatened; N/A = Not Applicable (critical habitat has not been designated for these species); None = no critical habitat in ROI; P = potential to occur; PE = Proposed Endangered; PT = Proposed Threatened; ROI = region of influence; SE = State Endangered; USFWS = United States Fish and Wildlife Service
Note:
a. For details on species and habitat use, see the USFWS Environmental Conservation Online System available at https://ecos.fws.gov/ecp/.

Migratory Birds

Information on migratory birds under the airspace has not changed from what was presented in the 2023 FMS PTC EIS § 3.8.2.2.2. **Figure 3.6-1** shows the USFWS-designated BCRs that overlap with the airspace (NABCI, 2024). For a full list of migratory bird species within these BCRs, please refer to the USFWS *Birds of Conservation Concern 2021 Migratory Bird Program* (USFWS, 2021).

Bald and Golden Eagles

In Arkansas, bald eagles are common, and habitats are present under the airspace. Bald eagles also occur in Oklahoma, although they are not as common. Golden eagles do not live in Arkansas or Oklahoma year-round but may occur as rare winter migrants in small numbers.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

The analysis of effects to biological resources for the Proposed Action evaluates effects in relation to the 2023 FMS PTC EIS § 3.8.4 and what was approved in the 2023 FMS PTC ROD, which is the No Action Alternative. Additional effects to biological resources may occur from construction activities, an increase in personnel at the installation, and changes to aircraft operations at the airfield and in the airspace.

3.6.2.1.1 Installation and Surrounding Area

Airfield Operations

Under the Proposed Action, annual airfield operations at FSRA would increase by approximately 8% (**Table 2.1-2**). The additional proposed airfield operations may slightly increase the potential for bird/wildlife-aircraft strike encounters. However, adherence to the existing BASH Plan would

help continue the minimization of the risk for bird/wildlife-aircraft strikes to occur (ARANG, 2002). Procedures for dispersing birds from the airfield, reporting hazardous bird activity, and altering flying operations would continue under implementation of the Proposed Action.

Noise levels at the airfield would increase due to the overall increase in airfield operations and F-35B STOVL operations. Refer to Section 3.2.2.1, *Noise, Proposed Action*, for additional information. Biological resources effects from increased noise levels associated with STOVL operations at the airfield are discussed in the West and East VLP Site Subalternatives subsection below.

Wildlife in the immediate vicinity of the airfield would be exposed to noise associated with increased airfield operations, particularly STOVL operations. Noise levels exceeding DNL 65 dBA would expose up to 8,224 acres of area surrounding Ebbing ANG Base/FSRA. When compared to the No Action Alternative as shown in the 2023 FMS PTC EIS Table 3.3-11 and the ROD, the Proposed Action would result in an additional 1,788 acres of land newly exposed to DNL 65 dBA. Effects to biological resources would be similar to those described in the 2023 FMS PTC EIS § 3.8.4.1 but additional wildlife would be exposed.

Figure 3.2-2 and **Figure 3.2-3** indicate the east and west extent of the DNL 65 dBA contour under the Proposed Action would be slightly smaller and the north and south extent would increase by approximately 0.5 miles compared to the DNL 65 dBA contour from the 2023 FMS PTC EIS and ROD. A reduction in contour extent in the east and west direction would decrease the amount of wooded area and the Arkansas River exposed to noise, which would reduce effects to wildlife in those areas. The extension of the noise contours in the north and south directions may expose wildlife species in that portion of the ROI, and effects would be similar to those discussed in the 2023 FMS PTC EIS § 3.8.4.1. Aircraft noise could potentially affect wildlife in the form of startle effects, stress, hypertension, behavioral changes, and possible injury. Terrestrial species present near the airfield are likely accustomed to noise levels associated with aircraft operations under current conditions. It is anticipated that wildlife on and near Ebbing ANG Base/FSRA could be exposed until they disperse from the area and relocate because of the increased noise environment, or habituate to the noise environment. Nighttime military aircraft operations at the airfield would decrease by approximately 26%, reducing potential exposure to nocturnal species that are typically more active at dusk and dawn hours.

Special Status Species

ESA-listed species known to occur or have the potential to occur at Ebbing ANG Base/FSRA and the surrounding area include the gray bat, northern long-eared bat, Indiana bat, tricolored bat, American burying beetle, and monarch butterfly (**Table 3.6-1**). Airfield operations under the Proposed Action would have no effect on the American burying beetle and monarch butterfly because insects are not known to have effects from aircraft noise and direct strikes from aircraft would not occur; therefore, the rest of this discussion focuses on ESA-listed bat species.

Increased airfield operations may result in an increased potential for bat-aircraft strikes particularly in the early evening around sunset when bats are typically active. Based on the analysis presented in the 2023 FMS PTC EIS § 3.8.4.1, bat strikes are uncommon and the likelihood of a bat strike at Ebbing ANG Base/FSRA was considered low. Since airfield operations would only increase by 8% under the Proposed Action and nighttime military operations would decrease by approximately 26% at the airfield compared to the 2023 FMS PTC EIS, there is a

reduced potential for bat strikes. Most of the areas newly exposed to increased noise levels from airfield operations is considered developed and fragmented. Gray bats and Indiana bats roost and hibernate in caves during the winter; this habitat type is not known to occur in the vicinity of Ebbing ANG Base/FSRA. All ESA-listed bats roost and forage in forest and riparian habitats and, less commonly, in structures. Individuals foraging and roosting in areas surrounding Ebbing ANG Base/FSRA could experience reduced foraging and roosting efficiency but would be expected to engage in those behaviors in other nearby suitable habitat areas. However, a study of Brazilian free-tailed bats found that foraging activity was not affected by low-level aircraft overflights at an airport and bats may habituate to aircraft noise (Le Roux & Waas, 2012). Therefore, the DAF determines that airfield operations under the Proposed Action may affect, but is not likely to adversely affect, the gray bat, northern long-eared bat, tricolored bat, and Indiana bat. The DAF re-initiated informal Section 7 consultation under the ESA with the USFWS Arkansas Ecological Services Office. On May 30, 2025, the USFWS concurred with the DAF's effects determinations associated with the Proposed Action (Appendix B, *Public and Agency Involvement*, Section B.2.3).

Potential effects to state-listed bat species from airfield operations would be similar to those discussed for ESA-listed bat species. Migratory birds would experience the same potential effects as those described above. Bald and golden eagles have not been documented at Ebbing ANG Base or FSRA and therefore are not expected to be affected by the Proposed Action. The DAF would continue to adhere to the existing BASH Plan to minimize the risk for bird/wildlife-aircraft strikes (ARANG, 2002). Overall, there would be no significant effects to special status species from airfield operations.

West and East VLP Site Subalternatives

Noise associated with STOVL operations at the West and East VLPs site would increase the noise environment in the area surrounding Ebbing ANG Base/FSRA. Noise levels exceeding DNL 65 dBA would expose 8,200 acres under the West VLP Site Subalternative and 8,224 acres under the East VLP Site Subalternative. When compared to the No Action Alternative (2023 FMS PTC EIS Table 3.3-11 and the ROD), the Proposed Action West VLP Site would result in an additional 1,764 acres of land newly exposed to DNL 65 dBA and the Proposed Action East VLP Site would result in an additional 1,788 acres of land newly exposed to DNL 65 dBA. Although the noise environment at the airfield will increase slightly, the effects to wildlife including special status species will remain similar to those described above.

Personnel

Under the Proposed Action, personnel would increase by about 43% from the 2023 FMS PTC ROD as shown in **Table 2.1-9**. Potential effects would remain consistent with those described in the 2023 FMS PTC EIS § 3.8.4.1, including potential risks associated with the introduction of invasive plant species, vehicle strikes to wildlife, and wildlife displacement from the cantonment area. To minimize the spread of invasives, construction vehicles would utilize existing roads, limit parking, and establish driving and staging areas to previously developed areas. Additionally, Ebbing ANG Base would continue to implement the control methods defined in the INRMP and ARANG Integrated Pest Management Plan and USDA APHIS (i.e., minimizing ground disturbance and revegetating disturbed areas with native vegetation), which provides guidance on invasive species/weed control and management activities (ARANG, 2020).

Facility Requirements

Vegetation and Wildlife

Vegetation and wildlife on and near Ebbing ANG Base/FSRA would be affected by the proposed construction and renovation projects at Ebbing ANG Base/FSRA listed in **Table 2.1-10** and shown in **Figure 2.1-3**. Potential effects would be similar to those described in the 2023 FMS PTC EIS § 3.8.4.1. Wildlife in the vicinity of construction activities may be temporarily disturbed from increased noise and human activity. However, noise and other disturbance would be localized, short term, and only occur during daylight hours, and would therefore cause no long-term effects to wildlife populations. Construction and renovation activities associated with the Proposed Action would increase the area of ground disturbance and new impervious surfaces to 1,208,471 square feet. Wildlife in the proposed construction areas would be permanently displaced by the development. However, the disturbed sites would occur within currently maintained and landscaped areas, which are not considered quality habitat.

Special Status Species

Suitable habitat for gray bats and Indiana bats does not occur on Ebbing ANG Base or FSRA. Northern long-eared bats and tricolored bats are known to roost in man-made structures; however, there would be no demolition of existing structures under the Proposed Action. The DAF anticipates there would be no effect to ESA-listed bats from facilities requirements under the Proposed Action.

Approximately 10.6 acres of habitat on Ebbing ANG Base and 54 acres on the eastern end of the FSRA airfield is suitable for the federally listed American burying beetle (ARANG, 2020); however, none of the proposed facilities would occur within these areas. Given the probable lack of preferred habitat characteristics, no significant effects would occur to American burying beetle suitable habitat. Additionally, construction of facilities would primarily occur in previously disturbed areas and would not overlap with monarch butterfly occurrence or habitat on the Ebbing ANG Base/FSRA. As a result, the DAF determines there would be no effect to American burying beetle and monarch butterfly from facilities requirements under the Proposed Action.

Potential effects to state-listed species, migratory birds, bald eagles, and golden eagles would be similar to effects discussed in the Vegetation and Wildlife subsection above.

West and East VLP Site Subalternatives

Both VLP Site Subalternatives would result in 118,400 square feet of new ground disturbance and impervious surface at FSRA (**Table 2.1-10**).

Construction at the West or East VLP Sites would remove vegetation historically characterized as Massard prairie. Both subalternatives occur in areas that are routinely mowed and landscaped habitat that would have low potential to provide suitable habitat to wildlife species. Wildlife species present would be expected to flush from the area during construction and would be permanently displaced once construction is complete. However, vegetation removal would remain consistent with the airport's Wildlife Hazard Management Plan (WHMP) by removing potential hazardous wildlife attractants on the airfield.

ESA-listed bat species would not be affected by construction of the VLP at either subalternative location. Routine mowing within the West and East VLP Sites results in vegetation heights of less

than 8 inches making areas near the airfield unsuitable habitat for the American burying beetle (USFWS, 2019). Therefore, there would be no effect to ESA-listed species from implementing the West or East VLP Site Subalternatives. Potential effects from constructing the VLP to state-listed species, migratory birds, bald eagles, and golden eagles would be similar to effects discussed in the *Vegetation and Wildlife* subsection above.

3.6.2.1.2 Airspace and Ranges

Aircraft Operations and Events

FMS PTC operations would not affect vegetation under the airspace. Therefore, this section only describes potential effects to wildlife.

Wildlife

Airspace use would increase by 13% under the Proposed Action (**Table 2.1-4**). Increased FMS PTC operations in the airspace may result in additional risks for bird/wildlife-aircraft strikes to occur. However, because of the relatively small level of increase, the overall risk to wildlife in the airspace would not differ substantially from what was described in the 2023 FMS PTC EIS § 3.8.4.2.

Under the Proposed Action, aircraft would continue to use the Hog MOA, the Shirley MOA, Razorback Range (R-2401 and R-2402), and MTRs consisting of various VRs and IRs. Compared to No Action Alternative, noise levels within SUA would range from a decrease of L_{dnmr} 6.3 dBA to an increase of L_{dnmr} 2.5 dBA (decrease of DNL 6 dBA to an increase of DNL 0.3 dBA). Changes in noise levels in the MTRs would range from a decrease of L_{dnmr} 3.5 dBA to an increase of L_{dnmr} 3.1 dBA (decrease of DNL 0.6 dBA DNL to increase of DNL 3 dBA). Overall, noise levels across the airspace would remain below L_{dnmr} 65 dBA and DNL 65 dBA and the number of daily events exceeding 85 dBA L_{max} would not appreciably change from the No Action Alternative. Refer to Section 3.2.2.1, *Noise, Proposed Action*, for additional information on the noise analysis.

Wildlife exposed to increased L_{dnmr} and DNL noise levels may experience various physiological effects and behavioral changes, including auditory masking, temporary hearing loss, startle responses, as well as decreased foraging, interference with reproductive activities, or avoiding areas where important behaviors (e.g., nesting, mating, foraging, etc.) typically occur. Although overflights can cause short periods of altered behaviors, long-term behavioral effects are not expected, as the frequency of exposure would be low, with FMS PTC operations occurring throughout very large MOAs. Noise effects to exposed wildlife would be infrequent and short term and overall effects to wildlife populations from aircraft noise would not reach significant levels.

Noise effects to wildlife under the remaining portions of the proposed airspace would continue as described in the 2023 FMS PTC EIS § 3.8.4.2, because there would either be minimal change or a slight decrease in noise levels. As such, noise effects to wildlife under the remaining airspace would not be considered significant.

Special Status Species

ESA-listed species known to occur or have the potential to occur under the airspace are presented in **Table 3.6-3**. FMS PTC operations and events in the airspace under the Proposed Action would

have no effect on the ESA-listed reptiles, amphibians, fish, mollusks, insects, crustaceans, or flowering plants; therefore, the rest of this discussion focuses on the ESA-listed bat and bird species, as well as migratory birds and bald and golden eagles.

A 13% increase in FMS PTC operations in the airspace over the No Action Alternative would not result in a substantial increase to bat or bird strikes. The potential for wildlife/aircraft strikes would be influenced by the altitude of aircraft operations. Apart from Razorback Range, VR-1113, and IR-117, the minimum operational altitudes in the remaining airspace would be between 100 feet AGL and several thousand feet MSL (**Table 2.1-3** and **Table 2.1-5**). The majority of F-35 operations would occur at altitudes above 10,000 feet MSL. Bat strikes would occur at much lower altitude levels but are not considered likely in the airspace. Additionally, nighttime military operations would decrease by 23% in the airspace reducing potential effects to bats during dusk and dawn hours. Aircraft may encounter birds at altitudes of 3,000 feet AGL or higher. However, approximately 78% of bird strikes occur at altitudes under 1,000 feet AGL and 90% occur at altitudes under 3,000 feet AGL (FAA, 2020). For migratory birds, strikes at higher altitudes are common during migration and have been observed up to 7,000 feet AGL (FAA, 2024b). The 2023 FMS PTC EIS § 3.8.4.2 describes the potential for ESA-listed bird strikes based on their occurrence in the ROI. Based on typical distribution, ESA-listed birds would not be expected to occur in high numbers in the ROI and a strike of an ESA-listed bird species is not likely to occur.

Noise levels in portions of the airspace would slightly increase and ESA-listed bat and bird species could experience noise-related effects as described above. Exposure to high noise levels may affect ESA-listed bat behaviors or potentially cause effects such as a stress response. However, analysis presented in the 2023 FMS PTC EIS § 3.8.4.2 concluded that noise produced by FMS PTC aircraft is not likely to reduce foraging efficiency or affect the viability of bat populations. Additionally, ESA-listed birds would experience noise effects similar to those described above, where noise exposure to any given individual would be relatively infrequent and temporary. ESA-listed bat and birds in the ROI may be habituated to aircraft noise to some degree because the airspace is currently used under existing conditions. Therefore, the DAF determines FMS PTC operations and events in the airspace may affect, but is not likely to adversely affect, Ozark big-eared bat, gray bat, northern long-eared bat, Indiana bat, tricolored bat, piping plover, eastern black rail, red knot, whooping crane, and red-cockaded woodpecker. The DAF re-initiated informal Section 7 consultation under the ESA with the USFWS Arkansas and Oklahoma Ecological Services Offices. On May 30, 2025, the USFWS concurred with the DAF's effects determinations associated with the Proposed Action (Appendix B, *Public and Agency Involvement,* Section B.2.3).

Migratory birds, bald eagles, and golden eagles would experience the same potential effects as those described above. Overall, there would be no significant effects to special status species from airfield operations.

Munitions and Countermeasure Use

As shown in **Table 2.1-8**, use of live and inert munitions would increase at Fort Johnson (formerly Fort Polk), Louisiana, and Razorback Range, which are areas where these types of activities have been authorized and are ongoing. Wildlife species around these areas are likely acclimated to noise and disturbance associated with the use of munitions on an approved military range. The additional amounts of munitions proposed are not expected to result in an appreciable

physiological or behavioral change in wildlife that may be in the vicinity while munitions are being expended.

Countermeasure use under the Proposed Action would increase from the No Action Alternative. The 2023 FMS PTC EIS Table 2.2-5 shows that chaff use by F-35 aircraft was not assessed. However, the Proposed Action proposes 8,000 cartridges of chaff to be released annually during F-35 operations. Chaff use is authorized in Hog and Shirley MOAs/ATCAAs, R-2401A, and R-2402 A/B/C. As stated in Section 2.1.1.3, *Proposed Action*, *Munitions and Countermeasure Use*, an average of 12,243 chaff cartridges have been expended annually in authorized airspace. The Proposed Action would represent a 65% increase in chaff use. The very thin fibers of chaff are composed of aluminum-coated silica (naturally occurring elements), which rapidly break down in the environment and are dispersed from an aircraft to form an electronic cloud that temporarily obscures an aircraft from radar detection (DAF, 2023c). Even with the proposed increase in chaff releases, distribution of chaff across authorized airspace would be sparse and would not discernibly affect biological species. Chaff particles have not been found to result in biological effects to terrestrial or aquatic species as summarized in the *Final Programmatic Environmental Assessment for Testing and Training with Defensive Countermeasures* (DAF, 2023c).

Flare use was previously assessed in the 2023 FMS PTC EIS § 3.8.4.2 and would increase under the Proposed Action by approximately 27% compared to the No Action Alternative. The proposed increase would not appreciably change the potential for effects to biological resources because the DAF would continue to implement flare release restrictions based on Fire Danger conditions. Overall, there would be no significant effects to wildlife from the increased countermeasure use under the Proposed Action.

Special Status Species

ESA-listed species known to occur or have the potential to occur under the airspace are presented in **Table 3.6-3** and designated critical habitat under the airspace is shown in **Figure 3.6-2**. ESA-listed species that would occupy or utilize water bodies may include reptiles, amphibians, fish, mollusks, and crustaceans. However, less than 1% of the airspace authorized for countermeasure use consists of waterbodies, making the potential for chaff and flare effects to aquatic habitats and designated critical habitat negligible. Therefore, the DAF determines that munitions and countermeasure use under the Proposed Action would have no effect on the ESA-listed birds, reptiles, amphibians, fish, mollusks, insects, crustaceans, flowering plants, or designated critical habitat. Similarly, migratory birds and bald and golden eagles are not expected to be affected by munitions and countermeasure use. Therefore, the rest of this discussion focuses on the ESA-listed bat species in the airspace ROI.

As previously stated, chaff particles have not been found to result in biological effects to terrestrial or aquatic species (DAF, 2023c), which would include ESA-listed bat species. The 2023 FMS PTC EIS § 3.8.4.2 assessed potential effects from the use of flares on ESA-listed bat species and found there would be low potential for effects to bat roosting or foraging habitat from flare-induced wildfires. The proposed increase of flare use under the Proposed Action would not appreciably change the potential for effects because the DAF would continue to implement flare release restrictions based on Fire Danger conditions. Therefore, the DAF determines that munitions and countermeasure use associated with the Proposed Action may affect, but is not likely to adversely affect, the Ozark big-eared bat, gray bat, northern long-eared bat, Indiana bat,

and tricolored bat. The DAF re-initiated informal Section 7 consultation under the ESA with the USFWS Arkansas and Oklahoma Ecological Services Offices. On May 30, 2025, the USFWS concurred with the DAF's effects determinations associated with the Proposed Action (Appendix B, *Public and Agency Involvement,* Section B.2.3).

3.6.2.2 Alternative 1

3.6.2.2.1 Installation

Under Alternative 1, the only new construction would be the VLP at one of the subalternative locations. There would be no other construction activities and no increase in personnel. Potential effects to biological resources from personnel and facility requirements would not change from the No Action Alternative and would be the same as those discussed in the 2023 FMS PTC EIS § 3.8.4.1.

Airfield Operations

The number of airfield operations would not change from No Action Alternative. However, FMS PTC operations would change to include the use of the afterburner for 95% of departures and no reduced-power departures allowing the aircraft to accelerate to a 350-knot climb airspeed. Other changes involve F-35B STOVL operations, which are discussed in the West and East VLP Site Subalternative section below. Noise levels at the airfield would increase due to the change in how the F-35 aircraft would operate at FSRA. Refer to Section 3.2.2.2, Noise, Alternative 1, for additional information.

Wildlife in the immediate vicinity of the airfield would be exposed to noise associated with changing F-35 operations at the airfield, including STOVL operations. Noise levels exceeding DNL 65 dBA would expose up to 7,306 acres of area surrounding Ebbing ANG Base/FSRA. When compared to the No Action Alternative (2023 FMS PTC EIS Table 3.3-11 and the ROD), the Proposed Action would result in an additional 870 acres of land newly exposed to DNL 65 dBA.

Figure 3.2-4 and **Figure 3.2-5** indicate the east and west extent of the DNL 65 dBA contour under Alternative 1 would decrease by 0.25 to 0.5 miles and the north and south extent would increase between 0.25 to 0.5 miles compared to the No Action Alternative. A reduction in contour extent in the east and west direction would decrease the amount of wooded areas and area of the Arkansas River exposed to noise, which would reduce effects to associated wildlife. The extension of the noise contours in the north and south directions may expose wildlife species in that portion of the ROI to increase noise. Overall, effects to biological resources would be similar to those described in the 2023 FMS PTC EIS § 3.8.4.1 and the Airfield Operations subsection of Section 3.6.2.1.1, *Installation and Surrounding Area*, and would not be significant.

West and East VLP Site Subalternatives

Noise associated with STOVL operations at the West and East VLPs site under Alternative 1 would increase the noise environment in the area surrounding Ebbing ANG Base/FSRA. Noise levels exceeding DNL 65 dBA would expose 7,299 acres under the West VLP Site Subalternative and 7,306 acres under the East VLP Site Subalternative. When compared to the No Action Alternative (2023 FMS PTC EIS Table 3.3-11 and the ROD), the Proposed Action West VLP Site would result in an additional 863 acres of land newly exposed to DNL 65 dBA and the Proposed Action East VLP Site would result in an additional 870 acres of land newly exposed to DNL 65 dBA. Although the noise

environment at the airfield will increase slightly, the effects to wildlife including special status species will remain similar to those described above.

Effects to biological resources from constructing the VLP at either the West or East VLP Sites would be the same as those described above in the *Facility Requirements* subsection of Section 3.6.2.1.1, *Installation and Surrounding Area,* and would not be significant.

3.6.2.2.2 Airspace and Ranges

Under Alternative 1, the number of FMS PTC airspace events, MTR events, nighttime operations, and munitions and countermeasures would not change from the No Action Alternative (refer to the 2023 FMS PTC EIS columns in **Table 2.1-2**, **Table 2.1-4**, **Table 2.1-6**, **Table 2.1-7**, and **Table 2.1-8**). Alternative 1 would have revised flight tracks and profiles within the airspace that would change noise levels in the airspace.

Aircraft Operations and Events

FMS PTC operations and events in the airspace would not affect vegetation; therefore, this section only describes potential effects to wildlife. FMS PTC aircraft operating under the Alternative 1 will utilize the same airspace as the Proposed Action and the No Action Alternative. Noise levels within portions SUA would range from a decrease of L_{dnmr} 6.4 dBA to an increase of L_{dnmr} 1.3 dBA (decrease of DNL 6 dBA to no change in DNL), compared to the No Action Alternative. Changes in noise levels in the MTRs would range from a decrease of L_{dnmr} 4.4 dBA to an increase of L_{dnmr} 2 dBA (decrease of DNL 1 dBA to an increase of DNL 1.9 dBA). Overall, noise across the airspace would remain below L_{dnmr} 65 dBA and DNL 65 dBA and the number of daily events exceeding 85 dBA L_{max} would not appreciably change from the No Action Alternative. Refer to Section 3.2.2.1, *Noise, Proposed Action*, for additional information on the noise analysis.

Wildlife exposed to increased L_{dnmr} and DNL noise levels under Alternative 1 would have the same effects as those described above in the *Aircraft Operations and Events* subsection of Section 3.6.2.1.2, *Airspace and Ranges*. Noise effects to wildlife would continue as described in the 2023 FMS PTC EIS § 3.8.4.2, because there would either be minimal change or a slight decrease in noise levels. As such, noise effects to wildlife under the remaining airspace would not be considered significant.

3.6.2.3 No Action Alternative

The environmental consequences under the No Action Alternative would reflect actions expected to have occurred and are currently occurring as a result of the 2023 FMS PTC EIS (§ 3.8.4) and ROD. Potential effects associated with other development and infrastructure improvement projects that would occur either on or in the vicinity of Ebbing ANG Base/FSRA are listed in **Table 3.1-2**.

3.6.2.3.1 Installation and Surrounding Area

Airfield Operations

There is a potential for bird/wildlife-aircraft strikes from airfield operations; however, adherence to the existing ARANG BASH Plan would minimize the risk. Noise from airfield operations would elicit common responses to wildlife in the area including “startle” or “fright” responses, but as discussed in the 2023 FMS PTC EIS § 3.8.4.1, ultimately wildlife would habituate and there would be

no long-term adverse effects. It is anticipated that wildlife on and near Ebbing ANG Base/FSRA could experience noise effects until they disperse from the area and relocate, as a result of the increase in the noise environment, or habituate to the elevated noise environment associated with military aircraft operations. Based on consultations with the USFWS discussed in the 2023 FMS PTC EIS § 3.8.4.1 and associated analyses, there would be no significant effects from airfield operations to species status species, including ESA-listed species, under the No Action Alternative.

Personnel

Personnel and human activities could result in the potential collisions between wildlife and motor vehicles or displacement of wildlife around the Ebbing ANG Base installation and FSRA airfield. As discussed in the 2023 FMS PTC EIS § 3.8.4.1, the risk of collisions would be low and wildlife would either acclimate to the personnel or avoid the area entirely and relocate to nearby suitable habitat. Invasive noxious species could be introduced that would have indirect effects to vegetation and wildlife; however, construction vehicles would utilize existing roads, limit parking, and establish driving and staging areas to previously developed areas. Additionally, Ebbing ANG Base would continue to implement the control methods defined in the INRMP and ARANG Integrated Pest Management Plan and USDA APHIS (i.e., minimizing ground disturbance and revegetating disturbed areas with native vegetation), which provides guidance on invasive species/weed control and management activities (ARANG, 2020).

Facility Requirements

As discussed in the 2023 FMS PTC EIS § 3.8.4.1, there would be permanent vegetation effects from clearing maintained/landscaped areas for ongoing construction and renovation projects. However, vegetation removal would remain consistent with the airport's WHMP by removing potential hazardous wildlife attractants from the airport. It is anticipated that wildlife would flush or flee these areas upon disturbance; however, these species are generally tolerant of human presence and activities. There would be no significant effects to vegetation and wildlife on Ebbing ANG Base/FSRA under the No Action Alternative.

3.6.2.3.2 Airspace and Ranges

Potential for aircraft strikes within the airspace is possible; however, as discussed in the 2023 FMS PTC EIS § 3.8.4.2, only 10% of FMS PTC operations would occur within altitudes where most bird-aircraft strikes could occur. The DAF considers the probability of bird/wildlife-aircraft strike in the airspace to be very low given operational parameters (e.g., flight altitude, etc.). Noise levels in the airspace under the No Action Alternative may disturb wildlife that occupy underlying areas, resulting in startle effects, flushing, or fleeing the area. However, disturbances would be infrequent and short term, lasting only the duration of the overflight and thus not considered significant. Based on consultations with the USFWS discussed in the 2023 FMS PTC EIS § 3.8.4.2 and associated analyses, there would be no significant effects from FMS PTC operations in the airspace to species status species, including ESA-listed species, under the No Action Alternative.

3.6.2.4 Cumulative Effects

3.6.2.4.1 Installation and Surrounding Area

Cumulative effects reflect reasonably foreseeable future actions and environmental trends highlighted in **Table 3.1-3** and are expected to occur by CY 2030 under all alternatives considered. The 188 WG Fort Smith Municipal Airport IDP encompasses demolition, renovation, new construction, and infrastructure updates. The Arkansas Department of Transportation plans to extend I-49 13.6 miles to I-40 and Arkansas Hwy 22. These projects, along with community development trends, could reduce available habitat for multiple animal species and reduce foraging options. However, cumulative effects to biological resources within this region would not be significant when combined with the Proposed Action or Alternative 1 because the areas proposed for constructing FMS PTC facilities are not high-quality habitats. Additionally, cumulative effects from extreme weather would be the same as climate change effects discussed in the 2023 FMS PTC EIS § 3.12.2.6. Long-term changes in weather may shift wildlife distribution patterns, which could either increase or reduce potential occurrence of wildlife around Ebbing ANG Base/FSRA. Associated BASH concerns would depend on the extent and degree of changes in wildlife distribution, but cumulative effects would not be significant because the DAF would continue to implement and update the BASH Plan to minimize the risk for strikes.

3.6.2.4.2 Airspace and Ranges

Cumulative effects reflect reasonably foreseeable future actions to biological resources within the airspace including those described in **Table 3.1-3** and expected to occur by CY 2030. BASH risks could increase at various altitudes if available food sources have an extended growing season. Foreseeable future actions addressed in the 2023 FMS PTC EIS § 3.12.2.6 include altitude expansion of the Shirley and Hog ATCAAs.

3.6.2.5 Mitigations

In the absence of any significant effects to biological resources, no mitigations have been identified. Proposed mitigations from the FMS PTC EIS § 3.8.5 will remain the same, including the following general measures to minimize effects to biological resources.

- Vegetation removal will remain consistent with the airport's WHMP by removing potential hazardous wildlife attractants on the airport in accordance with FAA Advisory Circular 150/5200-33C.
- Measures to minimize the potential for bird/wildlife-aircraft strikes, as identified in the ARANG *188th Fighter Wing Bird Aircraft Strike Hazard Plan* (ARANG, 2002), would continue to be implemented.
- The ARANG *Integrated Pest Management Plan* would be implemented to reduce and minimize effects from invasive species (ARANG, 2020).
- The ARANG *Integrated Natural Resources Management Plan Fort Smith Air National Guard Base* would be implemented to reduce and minimize effects to sensitive species and habitats (ARANG, 2020).

3.7 PHYSICAL RESOURCES

Physical resources include topography, geology, soils, and water. Topography pertains to the relief (elevation) and local landforms of a given region. Geological resources typically include features such as bedrock and minerals. Soil refers to the unconsolidated accumulation of organic and mineral materials on the land surface that is either formed from the breakdown of underlying bedrock or other parent material. Eroded soil particles that are transported and deposited are known as sediment. The delivery and deposition of sediment in waterways is known as sedimentation. Sedimentation can alter water quality, aquatic habitats, and hydrologic characteristics of streams and wetlands, and increase flooding. Erosion can also transport any chemical contaminants that are attached to sediment particles. In the context of soil, the focus of this SEIS is on erosion that could potentially occur during proposed construction activities. Water resources consist of surface water, groundwater, wetlands, and floodplains, which are defined in the 2023 FMS PTC EIS § 3.9 and is incorporated by reference.

Analysis Methodology

Topography and Soils

In the 2023 FMS PTC EIS (Table 3.2-1), soils and geology were not carried forward for detailed analysis because the majority of construction was planned within the cantonment area. However, since the Proposed Action for this SEIS involves new construction and ground-disturbing activities at Ebbing ANG Base/FSRA outside of the cantonment area, there is a potential for soil to erode into surface water and wetland features within the ROI. Topography is included in the analysis because the erosion potential of soil depends in part on the steepness of the land. However, geology is not addressed in this SEIS because bedrock and minerals would not be affected by the Proposed Action. FMS PTC operations within the airspace would not affect soils and are therefore not included for further analysis.

Water Resources

This SEIS uses the same analysis methodology for water resources as described in the 2023 FMS PTC EIS § 3.9.1, which focused on evaluating effects associated with proposed construction and airfield operations at Ebbing ANG Base/FSRA. Potential effects on water resources were evaluated by identifying surface water and groundwater features within and around Ebbing ANG Base/FSRA and evaluating the potential effects resulting from construction and use of facilities at Ebbing ANG Base/FSRA, as well as airfield operations at FSRA.

FMS PTC operations within the airspace could potentially affect surface waters that underlie the airspace from the proposed use of chaff under the Proposed Action. As stated in Section 2.1.1.3, *Proposed Action*, *Munitions and Countermeasure Use*, chaff releases are authorized in the Hog A/B MOAs/ATCAAs, Shirley A/B/C MOAs/ATCAAs, R-2401A, and R-2402A/B/C.

Potential effects were also evaluated in the context of Section 303 of the Clean Water Act, which requires states to establish water quality standards for waterways, identify those that fail to meet the standards, and take action to clean up impaired waterways. Waters determined to be impaired are submitted to the U.S. Environmental Protection Agency (USEPA) for approval as each state's 303(d) list.

3.7.1 Affected Environment

3.7.1.1 Installation and Surrounding Area

Topography

Topography of the ROI is dominated by gently rolling hills with flat river bottoms occurring along the Arkansas and Poteau Rivers, which occur north and west of Ebbing ANG Base/FSRA, respectively. **Figure 3.7-1** depicts elevation contours at the installation in 10-foot intervals. The highest point found on Ebbing ANG Base is 471 feet above MSL and the lowest point is 408 feet above MSL (ARANG, 2020). Alluvial deposits of sand, silt, and gravel up to 100 feet in thickness dominate the surficial geology in the area (DoD, 2015).

Soils

The soil types occurring on Ebbing ANG Base/FSRA (including soils associated with the runways) where proposed FMS PTC facilities would be constructed are Wrightsville silt loam (Wrightsville complex), Wrightsville-Messer silt loams complex (Wrightsville-Messer complex), Leadvale silt loam, and Mountainburg sandy loam (DoD, 2015). Distribution of the soil types in the ROI is shown in **Figure 3.7-2**. Wrightsville complex soil primarily occurs on the 120-acre main cantonment area within the proposed FMS PTC facilities footprints. Wrightsville-Messer complex, Leadvale silt loam, Mountainburg sandy loam, and Wrightsville complex soils underlie areas around the airfield where the arm/de-arm expansions and the VLP are proposed. The soil types that occur within proposed facility footprints are poorly drained, deep silt loams that are only partially hydric (ARANG, 2020). Each soil type and soil type complex has its own erosion factor indicating the relative susceptibility of a soil to sheet or rill erosion by water. Values range from 0.02 for the least erodible soils to 0.64 for the most erodible (NRCS, 2022). Erosion factors for the soils in the planned construction areas at Ebbing ANG Base/FSRA range from 0.2 to 0.55, which indicates they have moderate to high erodibility (NRCS, 2024).

Water Resources

Surface Water

Water resources on and near Ebbing ANG Base/FSRA are the same as those described in the 2023 FMS PTC EIS (§ 3.9). This SEIS presents updated information where applicable. As described in the 2023 FMS PTC EIS (§ 3.9.2.1), Ebbing ANG Base/FSRA are located within the upper reaches of two sub-watersheds of Massard Creek (**Figure 3.7-3**). One sub-watershed, which includes Ebbing ANG Base, is located north of the primary runway and discharges to an unnamed tributary of Little Massard Creek (ARANG, 2020). The second sub-watershed is located south of the primary runway and discharges directly into Little Massard Creek. Under the SEIS, proposed areas of construction would occur near surface waters on Ebbing ANG Base/FSRA. The planned arm/de-arm expansion on the east side of RWY 08/26 is 25 feet away from the unnamed Massard Creek tributary; no other proposed construction areas are closer than 25 feet to a waterway.

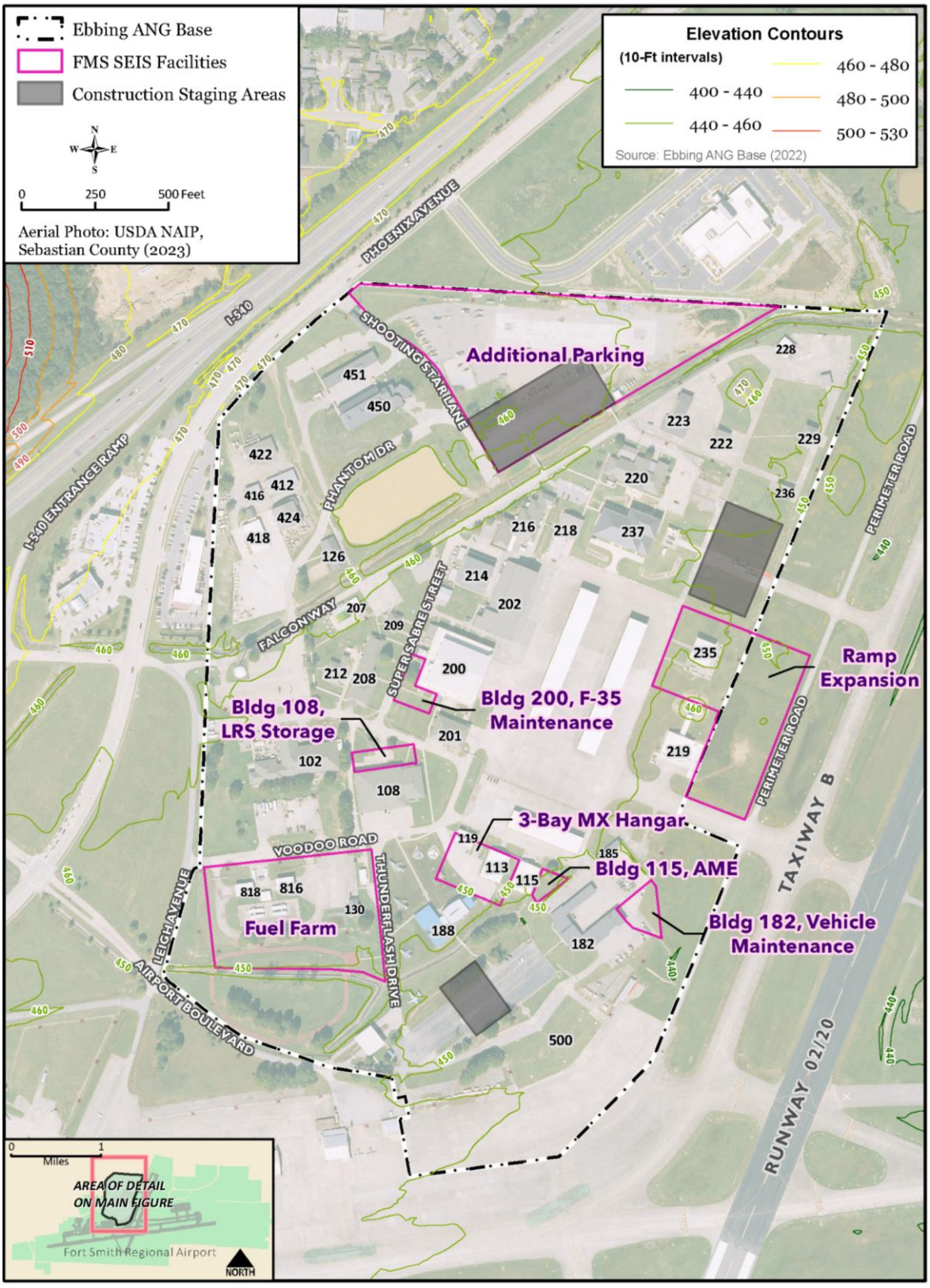


Figure 3.7-1. Topography at Ebbing ANG Base

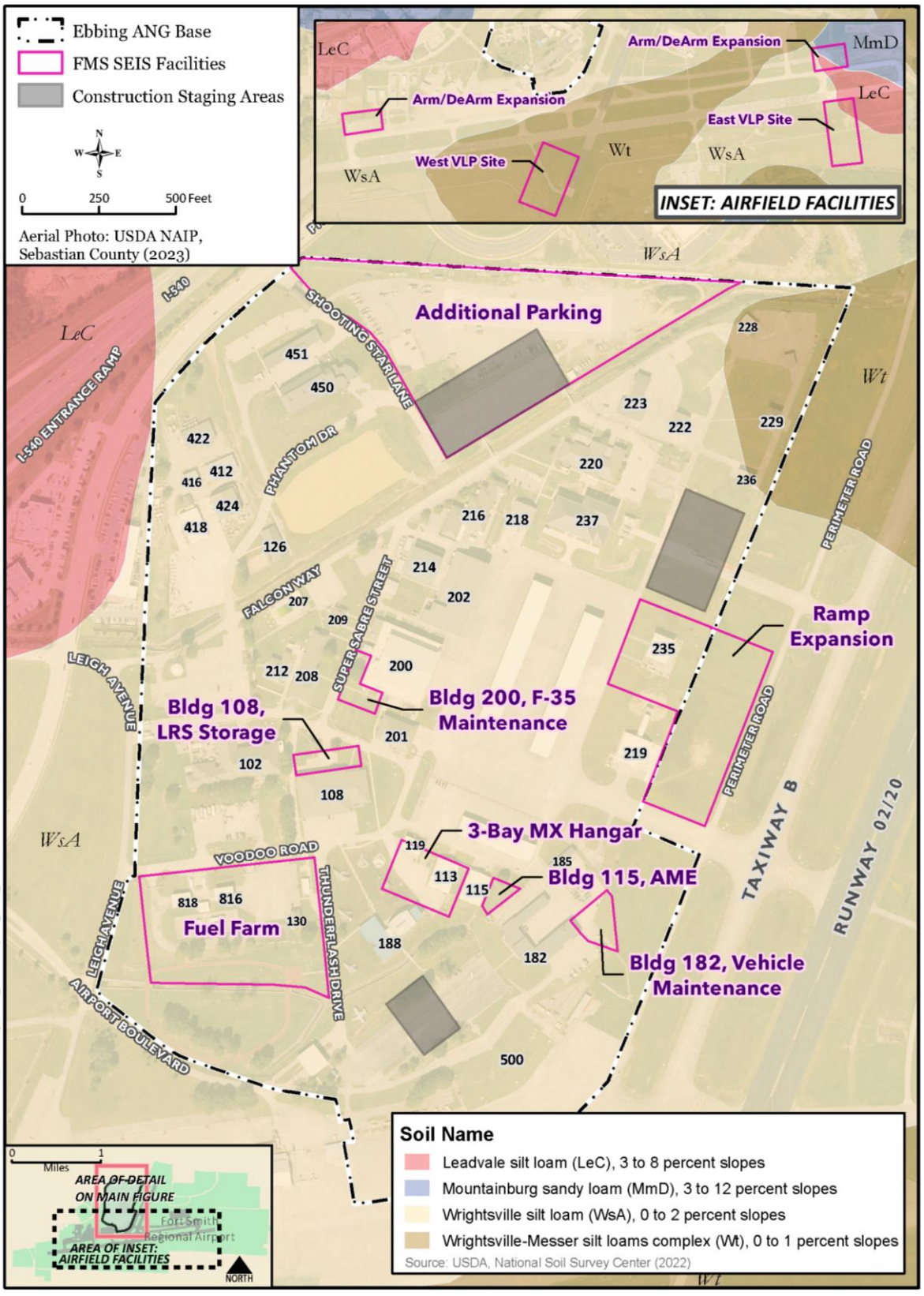


Figure 3.7-2. Soil Types at Ebbing ANG Base/FSRA

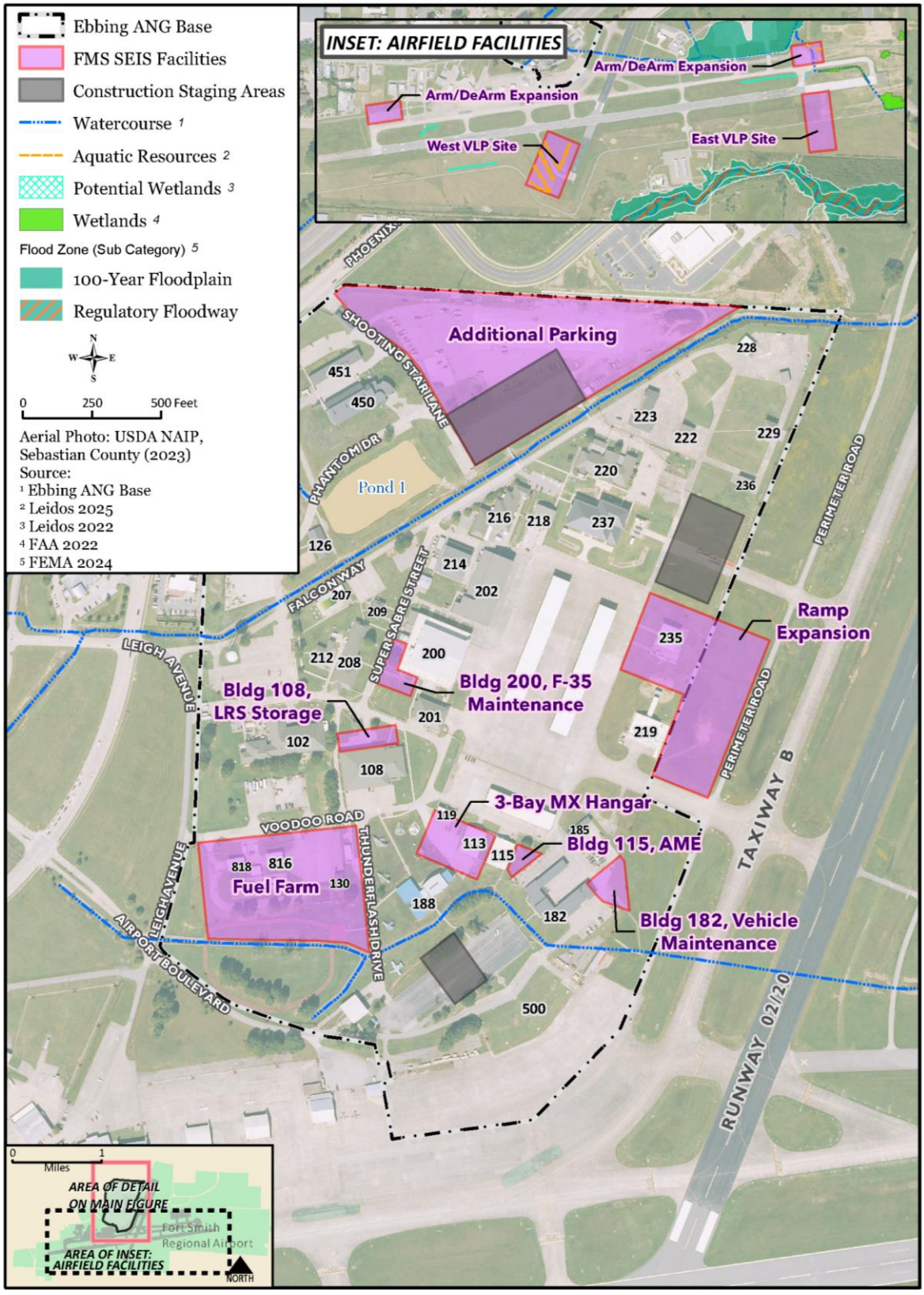


Figure 3.7-3. Water Resources at Ebbing ANG Base/FSRA

Groundwater

Information on groundwater at Ebbing ANG Base/FSRA has not changed from what was presented in the 2023 FMS PTC EIS § 3.9.4.1. The ROI is underlain by a shallow, unconfined aquifer (Arkansas River Alluvial) and a deep, unconfined aquifer (Western Interior Plains Confining System), both of which supply potable water.

Wetlands

The 2023 FMS PTC EIS identified several jurisdictional wetlands (multiple waterways and a pond) on Ebbing ANG Base/FSRA (§ 3.9.4.1). These features are part of the stormwater drainage network. In addition, several aquatic features were identified on FSRA during onsite wetland delineations conducted in 2025 (Leidos, 2025). Aquatic features in the ROI are shown in relation to proposed construction sites in **Figure 3.7-3**.

Floodplains

As described in the 2023 FMS PMT EIS (§ 3.9.2.1), 100-year and 500-year floodplains in the ROI are located along the unnamed tributary to Little Massard Creek and along Little Massard Creek (**Figure 3.7-3**). There are no floodplains located on the main cantonment area of the base.

3.7.1.2 Airspace and Ranges

The use of the SUA in the ROI would not have effects to topography or soils; however, surface water resources could potentially be affected by the proposed use of chaff. Chaff particles and flare residual materials have the potential to be distributed across surface water bodies within the ROI including lakes and rivers shown in **Figure 3.7-4**. Designated Wild and Scenic Rivers are discussed in Section 3.3, *Land Use*.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

The analysis of effects to water resources for the Proposed Action evaluates effects in relation to the 2023 FMS PTC EIS § 3.9.4.1 and what was approved in the 2023 FMS PTC ROD, which is the No Action Alternative. Effects to physical resources related to topography and soils were not assessed in the 2023 FMS PTC EIS and will be considered for analysis. Additional effects to water resources, as well as effects to topography and soils, may occur from construction activities, an increase in personnel at the installation, and changes to aircraft operations at the airfield and in airspace.

3.7.2.1.1 Installation and Surrounding Area

Airfield operations would not affect physical resources at Ebbing ANG Base/FSRA or surrounding area. This section only assesses potential effects from personnel and facilities requirements associated with the Proposed Action.

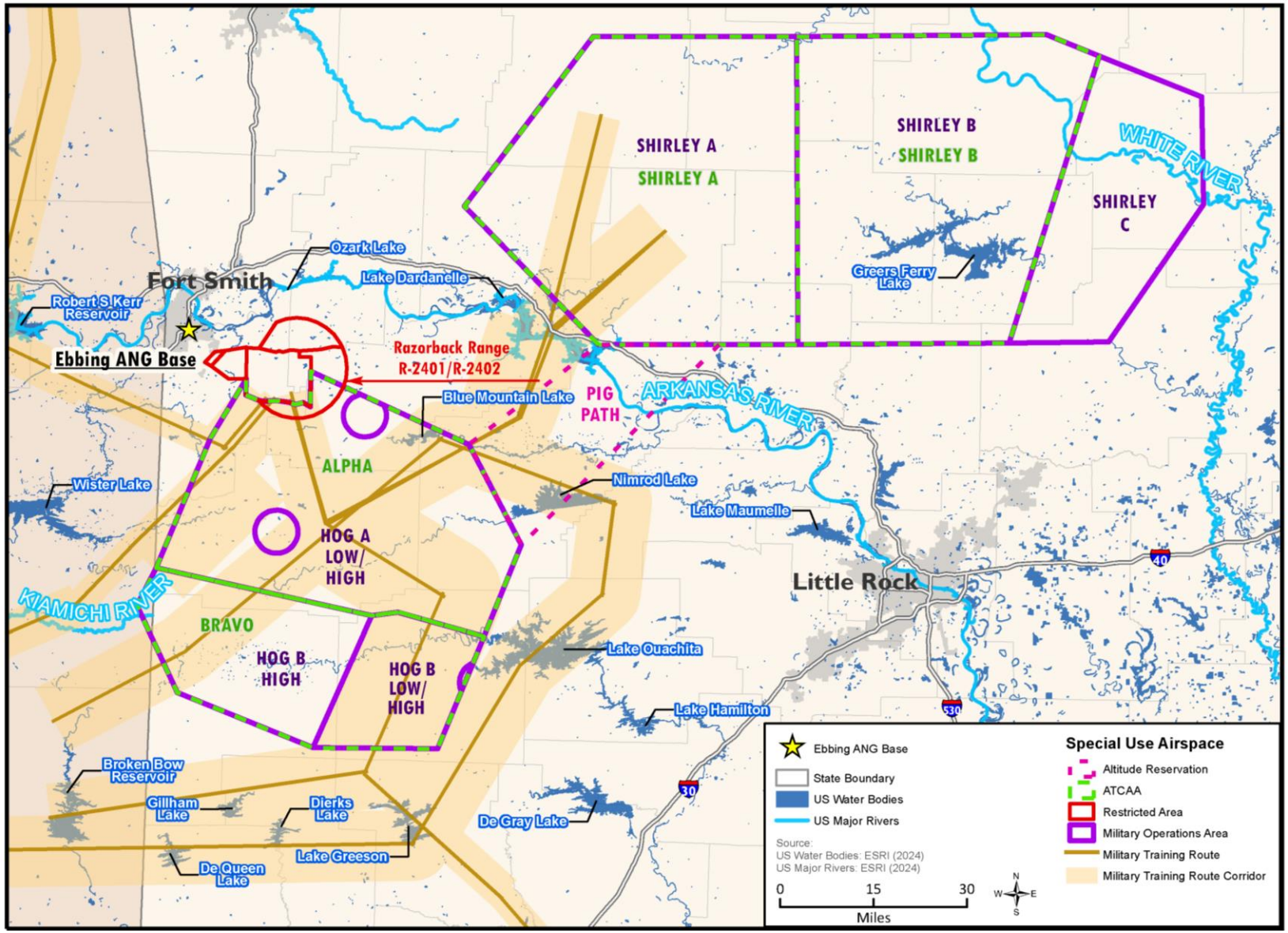


Figure 3.7-4. Surface Water Resources Under the Airspace

Personnel

There would be an increase of 271 personnel at the installation associated with the Proposed Action compared to the No Action Alternative. Additional personnel would slightly increase the demand for potable water, which primarily comes from runoff water located in two watersheds. However, the demand would not adversely affect the overall water supply on the installation or in the region.

Facility Requirements

Topography and Soils

Under the Proposed Action, there would be approximately 27.7 acres of ground disturbance and new impervious surface area from constructing facilities listed in **Table 2.1-10**. In addition, there could be temporary ground disturbance in construction staging areas (**Figure 2.1-3**). Topography at Ebbing ANG Base/FSRA is characterized by nearly level to gently rolling terrain with elevations ranging from approximately 450 to 470 feet above MSL. The natural topography has been altered or leveled in some areas to accommodate current development. **Figure 3.7-1** shows proposed construction and staging area locations for the Proposed Action. The relatively flat conditions on the base indicate effects from topographical features would not occur from construction activities (ARANG, 2022).

There is potential for soil erosion and related effects to occur during construction activities and creation of increased impervious surface area. Erosion can destabilize surrounding soils, and eroded sediments and any associated contaminants can be transported by stormwater runoff to nearby streams, wetlands, and floodplains. The soils in the Proposed Action facilities locations are shown in **Figure 3.7-2**. Erosion factors for soils in these areas range from 0.2 to 0.55, which indicate moderate to high erodibility (NRCS, 2024). The potential for soil erosion would be reduced by requirements in the Arkansas Construction Stormwater Permit and associated Stormwater Pollution Prevention Plan (SWPPP), which would specify management practices to be implemented during and after construction to minimize erosion. Management practices may include actions such as the use of water sprays during construction to keep soil from becoming airborne, use of silt fences and sediment traps, and revegetation of disturbed areas with native plants, among others. In addition, erosion potential would be further reduced by the topography on the installation, which is relatively flat with low slope gradients in areas of planned construction shown in **Figure 3.7-1**. There would be no significant effects to topography and soils.

Water Resources

Surface Water

Surface waters that could potentially be affected by construction activities include watercourses (drainageways) on Ebbing ANG Base/FSRA as shown in **Figure 3.7-3**. Increased stormwater runoff from new impervious surface areas could potentially transport eroded sediments and contaminants to other waterbodies outside Ebbing ANG Base. Stormwater discharge from industrial activity at the installation is covered by a National Pollutant Discharge Elimination System (NPDES) General permit issued by the Water Division of the ADEQ (ARANG, 2022). It is expected that the existing permit would be revised, or that a new permit would be required, to

address the proposed new facilities and operations. Runoff from the northern portion of the main cantonment area drains south to a 1.62-acre detention pond in the north-central portion of the installation. When volume exceeds capacity, outflow from the pond occurs via a spillway into a tributary to Massard Creek and two small ponds on the Fire Training Area (ARANG, 2022). However, as discussed in the *Topography and Soils* subsection, requirements in the Construction Stormwater Permit and SWPPP would substantially reduce the potential for erosion and related stormwater effects on drainageways or tributaries surrounding the installation.

The integration of Low Impact Development concepts and stormwater management principles would remain the same as those described for construction activities in the 2023 FMS PTC EIS § 3.9.4.1 and provide further management practices to reduce effects to surface waters within construction activities. An NPDES stormwater permit for industrial activity, an Arkansas Construction Stormwater Permit, and SWPPP would be required for construction projects occurring in proximity to surface water features. The requirements in these permits would substantially reduce the potential for effects from surface water runoff including possible use of drainage features such as using porous materials, directing runoff to permeable areas, and using detention basins to release runoff over time.

Groundwater

Newly proposed construction under the Proposed Action would not affect any public drinking water supplies, public water supply wells, or groundwater resources. Construction activities would not interact with the underlying aquifers.

Wetlands and other Waters of the United States (WOTUS)

As described above, construction and stormwater permit requirements would reduce the potential for sediments and contaminants to be transported to wetlands in the ROI. A wetland delineation survey was conducted in February 2025 at the proposed locations for the eastern arm/de-arm expansion and the East VLP Site. A second survey was conducted in March 2025 at the proposed locations for the western arm/de-arm expansion and the West VLP Site. Surveys were conducted in accordance with the *1987 USACE Wetland Delineation Manual* and the 2012 *Regional Supplemental to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region (Version 2.0)* (USACE, 1987; USACE, 2012). No wetlands were identified in any of the areas surveyed (Leidos, 2025).

A linear aquatic feature or stream was identified at the eastern arm/de-arm expansion site during the 2025 surveys. This feature does not fit the definition of jurisdictional waters of the United States (WOTUS); however, only the USACE Little Rock District, Regulatory Branch can make official determinations. Therefore, the DAF would coordinate with the USACE Little Rock District, Regulatory Branch prior to construction to either pursue an Approved Jurisdictional Determination to confirm the feature is not jurisdictional or to obtain the necessary permits if the DAF chooses to pursue a Preliminary Jurisdictional Determination where the feature would be considered jurisdictional. Should the jurisdictional determination and the final engineering design of the proposed arm/de-arm expansions show that WOTUS cannot be avoided, the DAF would apply for a Section 404 permit and coordinate any required mitigations with USACE.

Floodplains

The closest floodplain is the 100-year floodplain north of RWY 08/26 shown in **Figure 3.7-3**. This floodplain is associated with an unnamed tributary of Little Massard Creek, located approximately 25 feet north of the proposed arm/de-arm expansion. Floodplain areas adjacent to the proposed arm/de-arm expansion area consist of land that has been previously disturbed and developed. Additionally, as described above, the potential for erosion and increased stormwater would be minimized per requirements in the Construction Stormwater Permit and SWPPP. Therefore, redevelopment of these areas would not change the hydrologic properties of the floodplain compared to current conditions. Overall, there would be no effects to floodplains.

West and East VLP Site Subalternatives

Construction of the West and East VLP Site Subalternatives would result in approximately 2.5 acres of new impervious surface along either the southwestern end of RWY 02/20 or southeastern end of RWY 08/26, respectively. Construction and ground-disturbing activities may cause soil disturbance, increasing the potential for soil erosion and sedimentation. Construction of both the West and East VLP Sites would direct surface water flow toward the southern tributary of Little Massard Creek. Groundwater would not be affected by the construction of the West or East VLP Sites.

As stated above, wetland delineation surveys were conducted in February and March 2025 at the proposed East VLP Site and West VLP Site. While a previous desktop survey identified approximately 3.8 acres of potential wetlands within the East VLP Site (Leidos, 2022), the February 2025 wetland survey determined there were no wetlands within the East VLP Site (Leidos, 2025). The 2025 survey efforts identified other aquatic features, including five ephemeral drainage ditches within the West VLP Site. All five ditches observed in this area convey flow to the southwest corner of the West VLP Site (**Figure 3.7-3**). A series of culverts and underground storm sewer pipes convey flow to a single storm sewer before the flow is conveyed by an underground pipe to an outfall located on an unnamed tributary to Little Massard Creek. These ephemeral drainages do not fit the definition of jurisdictional WOTUS or wetlands. However, the DAF would coordinate with the USACE Little Rock District Regulatory Branch prior to construction to either pursue an Approved Jurisdictional Determination to confirm the aquatic features are not jurisdictional or to obtain the necessary permits if the DAF chooses to pursue a Preliminary Jurisdictional Determination where all features are considered jurisdictional. Should the Jurisdictional Determination and the final engineering design of the proposed VLP Sites show that WOTUS cannot be avoided, the DAF would apply for a Section 404 permit and coordinate any required mitigations with USACE.

The West VLP Site Subalternative would not be constructed within proximity to any existing floodplains. The East VLP Site Subalternative is located approximately 450 feet north of the 100-year floodplain (**Figure 3.7-3**). Therefore, there would be no effects to floodplains.

In summary, erosion and stormwater runoff would not be significant with implementation of permit requirements. Resulting effects would not be significant from the implementation of the East or West VLP Site Subalternatives. If a Jurisdictional Determination is made for wetlands or WOTUS are unavoidable with the implementation of the West VLP Site Subalternative, the DAF

would apply for a Section 404 permit and coordinate any required mitigations with the USACE Little Rock District, Regulatory Branch.

3.7.2.1.2 Airspace and Ranges

Under the Proposed Action, the DAF would utilize the same airspace and ranges as the No Action Alternative, but the use of additional munitions and countermeasures would increase. The use of live and inert munitions would increase at Fort Johnson (formerly Fort Polk), Louisiana, and Razorback Range, which are areas where these types of activities have been authorized and ongoing. Countermeasure use is permitted in the Hog MOAs/ATCAAs, Shirley MOAs/ATCAAs, and restricted airspace around Razorback Range. As shown in **Table 2.1-8**, 8,000 cartridges of chaff would be expended annually during F-35 operations. Chaff use was not assessed in the 2023 FMS PTC EIS for F-35 operations and is not part of the No Action Alternative. Additionally, flare use under the Proposed Action would increase by about 27% compared to the No Action Alternative.

The very fine fibers of chaff are composed of aluminum-coated silica (naturally occurring elements), which rapidly break down in the environment. There is a possibility that chaff fibers could collect on water surfaces; however, there would be no discernable concentration of chaff deposited in water bodies due to the large area where chaff is authorized to be released and small percentage of surface water coverage under the airspace (**Figure 3.7-4**). There would be no significant changes to water quality. Additionally, chaff concentrations in soils under the airspace would be minuscule due to the size of the airspace.

The use of flares includes certain altitude restrictions that help ensure complete consumption of the flare before contact with the ground surface. Any trace residual materials potentially deposited on soils or in surface waters from flares would be negligible. Larger, more visible residual materials, such as plastics, chaff wrapping, and dud flares, could be potential pollutants. However, distribution would be sparse and would not discernibly affect water quality or soils. An extensive review of chaff and flare use by the DAF concluded that these items do not significantly affect soil or water resources (DAF, 2023c).

3.7.2.2 Alternative 1

3.7.2.2.1 Installation and Surrounding Area

Under Alternative 1 the only new construction would be the VLP at one of the Subalternative locations. There would be no other construction activities and no increase in personnel from the No Action Alternative. Potential effects from constructing the VLP at the West or East VLP Site Subalternatives are identified above in the *West and East VLP Site Subalternatives* subsection of Section 3.7.2.1.1, *Installation and Surrounding Area,* which would be the same for Alternative 1.

3.7.2.2.2 Airspace and Ranges

Under Alternative 1, the DAF would utilize the same airspace and ranges as the No Action Alternative. Similarly, there would be no change in the use of munitions and countermeasures from the No Action Alternative. As indicated in the 2023 FMS PTC EIS Table 3.2-1, detailed analysis of physical resources under the airspace was not carried forward. However, the DAF conducted an extensive review of chaff and flare use in various training airspace units and determined there would

be no significant effects on soil and water resources (DAF, 2023c). Similarly, Alterative 1 would not have significant effects to physical resources under the airspace.

3.7.2.3 No Action Alternative

Under the No Action Alternative, effects to physical resources would reflect conditions described in the 2023 FMS PTC EIS § 3.9.4). Potential effects associated with other development and infrastructure improvement projects that would occur either on or in the vicinity of Ebbing ANG Base/FSRA are listed in **Table 3.1-2**.

3.7.2.3.1 Installation and Surrounding Area

There would be no significant effects to physical resources on Ebbing ANG Base/FSRA associated with construction under the No Action Alternative beyond what was analyzed in the 2023 FMS PTC EIS § 3.9.4.1. Construction activities would not occur within wetlands or floodplains and there would be no interactions with groundwater resources. The DAF would obtain coverage under an Arkansas Construction Stormwater Permit and prepare a SWPPP to manage stormwater discharges and ensure no significant effects to surface waters in the vicinity. Other development and infrastructure improvement projects that would occur either on or in the vicinity of Ebbing ANG Base/FSRA, which are listed in **Table 3.1-2**, would follow similar requirements to minimize potential effects to physical resources.

3.7.2.3.2 Airspace and Ranges

There would be no significant effects to physical resources (water resources) under the airspace within the ROI. The No Action Alternative reflects actions expected to have occurred and are currently occurring as a result of the 2023 FMS PTC EIS, which did not consider airspace and ranges due to a lack of effects on physical resources in these areas.

3.7.2.4 Cumulative Effects

Cumulative effects reflect reasonably foreseeable future actions highlighted in **Table 3.1-3** and are expected to occur by CY 2030 under all alternatives considered. The 188 WG Fort Smith Municipal Airport IDP encompasses demolition, renovation, new construction, and infrastructure updates. The Arkansas Department of Transportation plans to extend I-49 by 13.6 miles to I-40 and Arkansas Hwy 22. These projects would cause ground disturbance and increased impervious surface area. Development within the ROI can lead to increases in surface water runoff into nearby waterbodies, increasing the risk of flood events and adverse effects on water quality and aquatic habitats. With management practices, the Proposed Action, Alternative 1 and No Action Alternative would not likely contribute significantly to reasonably foreseeable future actions. A small amount of potential wetland loss due to construction of the East VLP Site Subalternative could occur; however, the DAF would coordinate with USACE regarding mitigations. Therefore, no significant cumulative effects to physical resources would be anticipated from the Proposed Action, Alternative 1 or No Action Alternative combined with past, present, and reasonably foreseeable actions.

3.7.2.5 Mitigations

Mitigations would be similar to those discussed in the 2023 FMS PTC EIS including the following actions, which would be required as part of regulatory requirements.

- VLP Site, connecting taxiways, and arm/de-arm sites access would be required to be designed to avoid any WOTUS.
    - Any WOTUS that would be unavoidable would require a Clean Water Act Section 404 permit and associated compensation or mitigation.
    - If a Jurisdictional Determination is necessary for any WOTUS in the proposed construction areas, the DAF would coordinate with the USACE Little Rock District to obtain the determination and apply for proper permitting.
- Facilities would be required to comply with Unified Facilities Criteria 3-210-10, *Low Impact Development* (as amended, 2016), and Energy Independence and Security Act § 438 (42 USC § 17094); this would serve to maintain the site's pre-development runoff rates and volumes to minimize effects from increased impervious surface area.
- The Ebbing ANG Base operates under an NPDES, which provides engineering and management strategies designed to improve the quality of stormwater runoff from the installation and thereby improve the quality of receiving waters. Construction activities that disturb one or more acres are regulated under Arkansas' NPDES construction stormwater program and would need a Construction Stormwater Permit. To protect water quality, Ebbing ANG Base implements the following strategies:
    - Monitor surface water quality.
    - Implement best management practices (BMPs) for construction and industrial activities.
    - Prevent surface water pollution by ensuring environmental plans (e.g., SWPPP) are implemented.
    - Minimize the use of pesticides.
    - Maintain vegetation buffers around water resources.
    - Reseed disturbed areas after construction.

3.8 AIR QUALITY

The 2023 FMS PTC EIS § 3.10 provides the definition of air quality, including ambient air quality and greenhouse gases (GHGs), which is incorporated by reference for this SEIS. The criteria pollutants are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide, ozone, particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead.

Analysis Methodology

This SEIS uses the same analysis methodology for criteria pollutants as what was used in the 2023 FMS PTC EIS § 3.10.1. This includes using the updated DAF Air Conformity Applicability Model (ACAM) version 5.0.24a (Solutio Environmental, Inc., 2025). ACAM is a tool for estimating criteria pollutant and GHG emissions for construction and operational activities. The ACAM analysis used the most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the DAF Air Emissions Guide for Air Force Stationary Sources (DAF, 2021a), the DAF Air Emissions Guide for Air Force Mobile Sources (DAF, 2021b), and the DAF Air Emissions Guide for Air Force Transitory Sources (DAF, 2021c). ACAM was utilized to provide a level of consistency with respect to emissions factors and calculations.

The air quality analysis estimated the effects of the project alternative activities by comparing the increase in annual criteria pollutant and GHG emissions to applicable insignificance indicators for attainment areas, as well as to baseline emissions within the ROI (AFCEC/CZTQ, 2023). The ROI baseline emissions reflect existing conditions in Sebastian County, Arkansas. For both criteria pollutants and GHGs, the analysis calculated the percentage change in emissions relative to the ROI baseline, providing additional context for the magnitude of the projected increases.

Sebastian County currently attains all National Ambient Air Quality Standards (NAAQS). As outlined in the 2023 FMS PTC EIS § 3.10.1, the insignificance indicator used to evaluate actions in attainment areas is the USEPA Prevention of Significant Deterioration (PSD) permitting threshold of 250 tons per year (tpy) for a criteria pollutant other than lead. The insignificance indicator for lead in this area is 25 tpy. The PSD threshold for GHGs is 75,000 tpy of carbon dioxide equivalent (CO_2e) (or 68,039 metric tpy). The insignificance indicators do not denote a significant effect; however, they do provide a threshold to identify actions that have insignificant effects to air quality. Any action with emissions below the insignificance indicators is considered so insignificant that the action would not cause or contribute to an exceedance of any NAAQS. Although a conformity determination is not required, since Sebastian County is designated as in "attainment," ACAM was utilized to provide a level of consistency with respect to emissions factors and calculations. This approach provides a quantifiable air quality analysis for a proposed action and its alternatives by estimating emissions from all activities expected in an ROI.

FAA Order 1050.1F applies to this aspect of the Proposed Action and Alternatives. The Order states that the significance threshold for air quality equates to an action that would cause pollutant concentrations to exceed the NAAQS or would increase the frequency or severity of any such existing violation. The DAF analysis methodology assumes that proposed emissions would not exceed the NAAQS if they would not exceed the emission indicator thresholds. If the analysis identifies an exceedance of an emission indicator threshold, the DAF methodology further evaluates the potential for an exceedance of the NAAQS, which is consistent with FAA policy.

Greenhouse Gases

The analysis of GHG emissions for the Proposed Action and Alternatives builds upon the detailed methodology and findings presented in the 2023 FMS PTC EIS § 3.10, which is incorporated by reference. Primary sources of GHG emissions include fuel combustion from construction equipment and vehicles, operational emissions from building energy use, transportation-related activities associated with personnel, and expanded FMS PTC operations. Sources include on-road and non-road vehicles, construction machinery, aircraft operations, and auxiliary support equipment.

The 2023 FMS PTC EIS provides a comprehensive description of the seven primary GHGs(carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride), including their global warming potentials. Hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride are produced in small quantities and by niche industries and are not relevant to the proposed activities at Ebbing ANG Base/FSRA. Therefore, only emissions of carbon dioxide, methane, and nitrous oxide are evaluated in this SEIS. The global warming potentials of these gases are used to convert emissions into a common unit, CO_2e, as described in the 2023 FMS PTC EIS.

GHG emissions associated with the Proposed Action and Alternatives are analyzed utilizing ACAM. The analysis uses the PSD threshold for GHGs of 75,000 tpy of CO_2e (or 68,039 metric tpy) as an indicator or threshold of insignificance for NEPA air quality effects, as a source this large would trigger major source PSD permitting requirements for GHGs, assuming the source first triggered PSD permitting for another regulated pollutant. Actions with a change in GHG (CO_2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Additional information regarding calculations for GHGs is provided in Appendix E, *Air Quality Calculations*.

3.8.1 Affected Environment

The air quality affected environment for Ebbing ANG Base/FSRA has not substantially changed from what was described in the 2023 FMS PTC EIS § 3.10.2. This section provides updated information for air quality within Sebastian County and the counties underlying the SUAs.

3.8.1.1 Installation and Surrounding Area

Sebastian County is classified as an attainment area for all criterial pollutants under NAAQS. This designation indicates that the county meets air quality standards set by USEPA, which is consistent with most counties in Arkansas (USEPA, 2024a).

For comparison purposes, **Table 3.8-1** presents USEPA's 2020 National Emissions Inventory (NEI) data for Sebastian County, Arkansas, as this is the domain that would experience the highest project air quality effects (USEPA, 2024b). The transport of project emissions beyond this area would disperse to low levels. The county data include emissions from point sources, area sources, and mobile sources. Point sources are stationary sources identifiable by name and location. Area sources are point sources whose emissions are too small to track individually, such as a home or small office building or a diffuse stationary source, such as wildfires or agricultural tilling. Mobile sources are any kind of vehicle or equipment with gasoline or diesel engine, an airplane, or a ship. Two types of mobile sources are considered: on-road and nonroad. On-road mobile sources consist of vehicles such as cars, light trucks, heavy trucks, buses, and motorcycles. Nonroad sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles. Data for FSRA in **Table 3.8-1** include emissions from civilian aircraft operations.

Table 3.8-1. Baseline Emissions Inventory for Sebastian County

County	Emissions (tpy)						
	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2e
Sebastian County	22,468	2,853	7,295	2,308	183	17,586	988,156
Fort Smith Regional Airport	107	38	4	3	4	22	0.06775

Source: (USEPA, 2024b)
Key: CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_x = nitrogen oxides; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

To identify effects, calculated air emissions were compared with the annual total emissions of the ROI as represented in the 2020 NEI. Sebastian County is in attainment of all NAAQS for criteria pollutants (USEPA, 2024b).

3.8.1.2 Airspace and Ranges

Table 3.8-2 shows the specific counties that underlie the airspaces for Ebbing ANG Base and their current attainment status under the NAAQS. **Table 3.8-3** provides the annual emissions for these counties where proposed FMS PTC operations would occur below 3,000 feet AGL.

Table 3.8-2. Attainment Status for Counties Underlying Ebbing ANG Base Airspaces

Airspace	County	Status
Hog A MOA	Franklin, Logan, Montgomery, Scott, Sebastian, Yell – Arkansas	Attainment or Unclassified for all pollutants
Hog B MOA	LeFlore - Oklahoma; Montgomery, Polk, Scott – Arkansas	Attainment or Unclassified for all pollutants
R-2401/R-2402	Franklin, Logan, Sebastian – Arkansas	Attainment or Unclassified for all pollutants

Source: (USEPA, 2024c)
Key: ANG = Air National Guard; MOA = Military Operations Area; R- = Restricted Area

Table 3.8-3. Annual Emissions for Counties Underlying Ebbing ANG Base Airspaces – 2020

County	Airspace	Air Pollutant Emissions (tpy)						
		CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2e (MT)
Franklin	Hog A MOA	11,915	2,108	4,555	1,334	126	15,891	619,613
Logan		9,750	2,125	4,951	1,183	54	17,245	326,490
Montgomery		13,825	539	3,629	1,301	90	20,475	236,075
Scott		25,043	983	5,216	2,494	201	24,069	415,340
Sebastian		22,468	2,853	7,295	2,308	183	17,586	988,156
Yell		12,312	977	4,910	1,390	84	22,164	261,955
Total tpy		95,314	9,585	30,557	10,010	739	117,429	2,847,630
Le Flore (OK)	Hog B MOA	23,919	4,121	10,506	2,758	511	33,441	1,727,214
Montgomery		13,825	539	3,629	1,301	90	20,475	236,075
Polk		9,640	983	3,976	1,087	55	21,668	229,415
Scott		25,043	983	5,216	2,494	201	24,069	415,340
Total tpy		**72,428**	**6,625**	**23,328**	**7,640**	**858**	**99,652**	**2,608,044**
Franklin	R-2401 or R-2402	11,915	2,108	4,555	1,334	126	15,891	619,613
Logan		9,750	2,125	4,951	1,183	54	17,245	326,490
Sebastian		22,468	2,853	7,295	2,308	183	17,586	988,156
Total tpy		**44,133**	**7,086**	**16,801**	**4,825**	**363**	**50,722**	**1,934,259**

Source: (USEPA, 2024d)
Key: ANG = Air National Guard; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; MOA = Military Operations Area; MT = metric tons; NO_x = nitrogen oxides; OK = Oklahoma; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns; R- = Restricted Area; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

Table 3.8-4 shows Federal Class I areas that occur within 50 miles of the Ebbing ANG Base airspaces. The Clean Air Act protects these areas from any appreciable deterioration of air quality caused by man-made air pollution.

Table 3.8-4. Federal Class I Areas in Relation to Ebbing ANG Base Airspaces

Class I Area	Entire Area (acres)	Area Underneath Airspace (acres)	Airspace Conflict	Distance to Nearest Airspace
Caney Creek Wilderness	14,325	6,158	Hog B High, Bravo ATCAA	Overlaps
Caney Creek Wilderness	14,325	493	IR-164, VR-1104	Overlaps
Total		**6,651**	**Both above fields**	**Overlaps**
Upper Buffalo Wilderness	11.929 acres	215 acres	Shirley A MOA, Shirley A ATCAA	Overlaps
Hercules-Glades Wilderness	12,374 acres	0 acres	Shirley A MOA, Shirley A ATCAA	42.5 miles away

Source: (USEPA, 2015)
Key: ATCAA = Air Traffic Control Assigned Airspace; IR = Instrument Route; MOA = Military Operations Area; VR = Visual Route

3.8.2 Environmental Consequences

The following sections provide a description of air quality effects that would occur from each alternative. Emissions from any alternative that cause an exceedance of any state or national ambient air quality standard would result in environmental effects**.** Additional information regarding the quantification air quality analysis is provided in Appendix E, *Air Quality Calculations*.

3.8.2.1 Proposed Action

3.8.2.1.1 Installation and Surrounding Area

The Proposed Action at Ebbing ANG Base/FSRA, which includes construction of new facilities, increased personnel, and expanded FMS PTC operations, would contribute to criteria air pollutant and GHG emissions. These emissions would stem from construction activities, additional commuting, expanded ground operations, and increased flight schedules associated with the addition of 12 F-35 aircraft. The following outlines the key air quality effects associated with each aspect of the Proposed Action and Alternatives.

Airfield Operations

Emissions associated with aircraft operations including VLPs for F-35Bs in the region are included in the analysis. Air emissions were estimated using site-specific operational data consistent with the project noise analysis, which accounts for the number and types of operations, location-specific flight patterns, aircraft power settings, and representative time-in-mode cycles.

The estimated emissions of F-35 operations under the Proposed Action are quantified in **Table 3.8-5**. The increase in F-35B operations is partially offset by reduced F-35A operations. Total emissions are projected to add 9.12 tpy of volatile organic compounds (VOCs), 4.97 tpy of SO_2, 50.72 tpy of nitrogen oxides (NO_X), 51.34 tpy of CO, 7.66 tpy of PM_{10}, 7.07 tpy of $PM_{2.5}$, and 10,914 tpy of CO_2e. All are below the insignificance indicator.

Table 3.8-5. Operational Emissions – Proposed Action

Activity	Emissions (tpy)							
	VOC	SO_2	NO_X	CO	PM_{10}	$PM_{2.5}$	Pb	CO_2e
Additional F-35B Operations	9.54	6.01	64.66	56.17	9.02	8.31	0.00	13,853
Reduced F-35A Operations	-0.42	-1.04	-13.94	-4.82	-1.36	-1.23	0.00	-2,939
Total Emissions	9.12	4.97	50.72	51.34	7.66	7.07	0.00	10,914
ROI Baseline [a]	17,586	183.00	2,853	22,468	7,295	2,308	0.00	999,002
Percentage of ROI	0.05%	2.72%	1.78%	0.23%	0.10%	0.31%	0.00%	1.09%
Insignificance Indicator	250	250	250	250	250	250	25	75,000
Exceedance?	No	No	No	No	No	No	No	No

Source: (USEPA, 2024e)
Key: % = percent; - = minus; ACAM = Air Conformity Applicability Model; ANG = Air National Guard Base; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_X = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).
a. The ROI for Ebbing ANG Base/FSRA emissions is Sebastian County, Arkansas.

Personnel

The proposed increase in personnel (271 personnel and 325 dependents) would contribute to additional emissions through increased commuting, facility operations, and energy use. Commuting by privately owned vehicles would lead to increased emissions of air pollutants and GHGs. Facility expansions, including additional energy use for heating, cooling, and operational requirements, would increase stationary source emissions at the installation.

The projected emissions associated with the proposed increase in personnel are summarized in **Table 3.8-6**. These emissions include 0.47 tpy of VOCs, less than 0.01 tpy of SO_2, 0.26 tpy of NO_X, 6.30 tpy of CO, 0.03 tpy of PM_{10}, 0.01 tpy of $PM_{2.5}$, and 577.99 tpy of CO_2e.

Table 3.8-6. Personnel Emissions – Proposed Action

Activity	Emissions (tpy)							
	VOC	SO_2	NO_X	CO	PM_{10}	$PM_{2.5}$	Pb	CO_2e
Personnel	0.47	0.00	0.26	6.30	0.03	0.01	0.00	577.99
ROI Baseline [a]	17,586	183.00	2,853	22,468	7,295	2,308	0.00	999,002
Percentage of ROI	0.00%	0.00%	0.01%	0.03%	0.05%	0.00%	0.00%	0.06%
Insignificance Indicator	250	250	250	250	250	250	25	75,000
Exceedance?	No	No	No	No	No	No	No	No

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; ANG = Air National Guard Base; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_X = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).
a. The ROI for Ebbing ANG Base/FSRA emissions is Sebastian County, Arkansas.

Facility Requirements

Construction activities, including grading, excavation, paving, demolition, and the use of heavy machinery, would generate emissions from fossil fuel combustion and fugitive dust. Ground-disturbing activities, such as site preparation and trenching, are expected to result in short-term increases in particulate matter (PM_{10} and $PM_{2.5}$) emissions, particularly during initial phases of construction. Other emissions would be generated from equipment exhaust,

stationary generators, and the application of architectural coatings. The greatest potential for fugitive dust emissions would occur during site preparation, with emissions varying based on activity levels, weather conditions, and dust control measures implemented.

The projected emissions associated with construction activities are summarized in **Table 3.8-7**. These emissions include 0.89 tpy of VOCs, 0.01 tpy of SO_2, 2.36 tpy of NO_X, 3.15 tpy of CO, 3.23 tpy of PM_{10}, 0.09 tpy of $PM_{2.5}$, and 571.03 tpy of CO_2e.

Table 3.8-7. Construction Emissions – Proposed Action

Activity	Emissions (tpy)							
	VOC	SO_2	NO_X	CO	PM_{10}	$PM_{2.5}$	Pb	CO_2e
Construction	0.89	0.01	2.36	3.15	3.23	0.09	0.00	571.03
ROI Baseline [a]	17,586	183.00	2,853	22,468	7,295	2,308	0.00	999,002
Percentage of ROI	0.01%	0.00%	0.08%	0.01%	0.04%	0.00%	0.00%	0.06%
Insignificance Indicator	250	250	250	250	250	250	25	75,000
Exceedance?	No	No	No	No	No	No	No	No

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; ANG = Air National Guard Base; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_X = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).
a. The ROI for Ebbing ANG Base/FSRA emissions is Sebastian County, Arkansas.

West and East VLP Site Subalternatives

The proposed construction of the VLP associated with the West VLP Site Subalternative or East VLP Site Subalternative, would include an estimated 118,400 square feet of ground disturbance (**Table 2.1-10**). The emissions associated with both subalternatives have been incorporated into the overall construction emissions analysis described in Section 3.8.2.1.1, *Installation and Surrounding Area, Facility Requirements*, and summarized in **Table 3.8-7**. However, emissions specifically attributable to VLP construction are shown in **Table 3.8-8** and are estimated to be 0.06 tpy of VOCs, 0.00 tpy of SO_2, 0.21 tpy of NO_X, 0.28 tpy of CO, 0.40 tpy of PM_{10}, and 0.01 tpy of $PM_{2.5}$. These values represent a small portion of the total construction emissions for the Proposed Action.

Table 3.8-8. VLP Construction Emissions – Proposed Action

Activity	Emissions (tpy)							
	VOC	SO_2	NO_X	CO	PM_{10}	$PM_{2.5}$	Pb	CO_2e
VLP Construction	0.06	0.00	0.21	0.28	0.40	0.01	0.00	45.68
ROI Baseline [a]	17,586	183	2,853	22,468	7,295	2,308	0.00	999,002
Percentage of ROI	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
Insignificance Indicator	250	250	250	250	250	250	25	75,000
Exceedance?	No	No	No	No	No	No	No	No

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; ANG = Air National Guard Base; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_X = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VLP = Vertical Landing Pad; VOC = volatile organic compound
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).
a. The ROI for Ebbing ANG Base/FSRA emissions is Sebastian County, Arkansas.

Installation and Surrounding Area Summary

Table 3.8-9 shows the estimated emissions associated with the Proposed Action compared to the baseline emissions for the ROI, which encompasses Sebastian County, Arkansas. Emissions associated with construction, demolition, and renovation activities would be temporary and phased over the duration of the project, further minimizing potential effects. No adverse effects to regional air quality are anticipated as all criteria pollutant emissions remain below the regulatory insignificance indicator threshold of 250 tpy. See Appendix E, *Air Quality Calculations*, for the ACAM analysis for the Proposed Action.

Table 3.8-9. Total Emissions – Proposed Action

	Emissions (tpy)							
Activity	**VOC**	**SO_2**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**Pb**	**CO_2e**
Personnel	0.47	0.00	0.26	6.30	0.03	0.01	0.00	577.99
Construction	0.89	0.01	2.36	3.15	3.23	0.09	0.00	571.03
Additional F-35B Operations	9.54	6.01	64.66	56.17	9.02	8.31	0.00	13,853
Reduced F-35A Operations	-0.42	-1.04	-13.94	-4.82	-1.36	-1.23	0.00	-2,939
Total Emissions	**10.48**	**4.98**	**53.34**	**60.80**	**10.92**	**7.18**	**0.00**	**12,063**
ROI Baseline [(a)]	17,586	183.00	2,853	22,468	7,295	2,308	0.00	999,002
Percentage of ROI	0.06%	2.72%	1.87%	0.27%	0.15%	0.31%	0.00%	1.21%
Insignificance Indicator	250	250	250	250	250	250	25	75,000
Exceedance?	No	No	No	No	No	No	No	No

Source: (USEPA, 2024e)
Key: % = percent; - = minus; ACAM = Air Conformity Applicability Model; ANG = Air National Guard Base; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_X = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).
a. The ROI for Ebbing ANG Base/FSRA emissions is Sebastian County, Arkansas.

3.8.2.1.2 Airspace and Ranges

Criteria Pollutants

Under the Proposed Action, there would be an increase in FMS PTC operations below 3,000 feet AGL within the Hog A MOA, Hog B MOA, and R-2401 or R-2402 airspace. These low-level operations are expected to result in additional emissions of criteria pollutants, which have been assessed to determine their potential localized effects. To evaluate these effects, emissions associated with the action were compared to baseline conditions. The baseline ROI emissions for each airspace were determined using 2020 NEI data and by summing the emissions from each county underlying the airspace. Section 3.8.1.2, *Airspace and* Ranges (**Table 3.8-3**), provides the baseline emissions for each county underlying the airspace, including totals for each airspace. These ROI emissions serve as the baseline for comparing the Proposed Action emissions below 3,000 feet AGL, expressed both as a total and as a percentage of ROI emissions. The followings detail the change in emissions for each airspace and include corresponding tables.

Hog A MOA

The counties underlying the Hog A MOA include Franklin, Logan, Montgomery, Scott, Sebastian, and Yell. Emissions associated with operations below 3,000 feet AGL within this airspace were assessed against the ROI emissions for these counties, which were calculated by summing the annual emissions for all criteria pollutants from the NEI 2020 data, as provided in **Table 3.8-3** of

Section 3.8.1.2, *Airspace and Ranges*. **Table 3.8-10** presents the change in emissions due to the Proposed Action, along with the ROI baseline emissions and the change expressed as a percentage of the ROI emissions. The change in emissions for Hog A MOA remains below the insignificance threshold of 250 tpy for all criteria pollutants and represents a very small percentage of the ROI baseline emissions, indicating negligible localized effects.

Table 3.8-10. Change in Emissions Below 3,000 Feet AGL for Hog A MOA – Proposed Action

	Pollutants (tpy)					
	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Proposed Action Total Hog A MOA Emissions	0.23	16.11	0.93	0.84	0.82	0.00
Insignificance Indicator	250	250	250	250	250	250
Exceedance?	No	No	No	No	No	No
Hog A MOA ROI Emissions	95,314	9,585	30,557	10,010	739	117,429
Percentage of ROI	0.00%	0.17%	0.00%	0.01%	0.11%	0.00%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; AGL = above ground level; CO = carbon monoxide; MOA = Military Operations Area; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Note: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).

Hog B MOA

The counties underlying the Hog B MOA include Le Flore (Oklahoma), Montgomery, Polk, and Scott. Emissions associated with the Proposed Action, involving operations below 3,000 feet AGL within this airspace, were assessed and compared against the baseline ROI emissions for these counties and were calculated using the same methodology as Hog A MOA. **Table 3.8-11** for the Hog B MOA presents the change in emissions from the Proposed Action, demonstrating that the emissions remain below the insignificance threshold of 250 tpy. Furthermore, the change in emissions for Hog B MOA constitutes only a very small percentage of the ROI baseline emissions, indicating that the effect is negligible.

Table 3.8-11. Change in Emissions Below 3,000 Feet AGL for Hog B MOA – Proposed Action

	Pollutants (tpy)					
	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Proposed Action Total Hog B MOA Emissions	0.09	3.99	0.23	0.21	0.20	0.00
Insignificance Indicator	250	250	250	250	250	250
Exceedance?	No	No	No	No	No	No
Hog B MOA ROI Emissions	72,428	6,625	23,328	7,640	858	99,652
Percentage of ROI	0.00%	0.06%	0.00%	0.00%	0.02%	0.00%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; AGL = above ground level; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; MOA = Military Operations Area; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Note: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).

R-2401/R-2402 Airspace

The counties underlying R-2401 or R-2402 airspace include Franklin, Logan, and Sebastian. The ROI baseline emissions for this airspace were calculated using the same methodology as the

Hog A and Hog B MOAs, by summing the annual emissions from each county underlying the airspace. **Table 3.8-12** presents the change in emissions from the Proposed Action involving operations below 3,000 feet AGL within this airspace. The change in emissions is well below the insignificance threshold of 250 tpy for all criteria pollutants and represents a minimal percentage of the baseline ROI emissions, indicating negligible localized effects.

Table 3.8-12. Change in Emissions Below 3,000 Feet AGL for R-2401 or R-2402 – Proposed Action

	Pollutants (tpy)					
	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Proposed Action Total R-2401 or R-2402 Emissions	0.01	0.31	0.02	0.02	0.02	0.00
Insignificance Indicator	250	250	250	250	250	250
Exceedance?	No	No	No	No	No	No
R-2401 or R-2402 ROI Emissions	44,133	7,086	16,801	4,825	363	50,722
Percentage of ROI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; AGL = above ground level; CO = carbon monoxide; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; R- = Restricted Area; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Note: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).

Airspace and Ranges Summary

The emissions associated with Proposed Action below 3,000 feet AGL for Hog A MOA, Hog B MOA, and R-2401 or R-2402 airspace have been assessed and remain well below the insignificance threshold for all criteria pollutants. The changes in emissions represent a minimal percentage of the ROI emissions for each airspace, confirming that the Proposed Action will result in negligible localized effects on air quality within the airspace. This analysis demonstrates compliance with air quality regulations and supports the conclusion that the changes are less than significant.

Greenhouse Gas Emissions

Under the Proposed Action, there would be an increase in operations within the Hog A MOA, Hog B MOA, and R-2401 or R-2402 airspaces. These operations are anticipated to result in additional GHG emissions. Unlike criteria pollutants, which are often analyzed below 3,000 feet AGL due to their localized nature, GHG emissions are assessed throughout the entire column of airspace. This approach is necessary because GHGs are well mixed in the atmosphere. To assess these effects, the total annual time-in-mode estimates for F-35A and F-35B operations were used to calculate the associated CO_2e emissions for each airspace. The baseline ROI emissions for each airspace were calculated by summing the GHG emissions from counties underlying the airspace, using the same methodology applied to the criteria pollutant analysis. For each airspace, the change in CO_2e emissions was compared to the insignificance threshold of 75,000 tpy and expressed as a percentage of the ROI emissions. The results are presented in the following sections and summarized in accompanying tables.

Hog A MOA

For the Hog A MOA, operations under the Proposed Action would result in an increase in CO_2e emissions as presented in **Table 3.8-13**. However, the total emissions remain well below the insignificance threshold of 75,000 tpy. When compared to the ROI baseline emissions, the change in CO_2e represents only a minimal percentage of the ROI, indicating negligible localized effects.

Table 3.8-13. Change in GHG Emissions for Hog A MOA – Proposed Action

	CO_2e
Proposed Action Total Hog A MOA Emissions	20,698
Insignificance Indicator	75,000
Exceedance?	No
Hog A MOA ROI Emissions	2,847,630
Percentage of ROI	0.73%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = ACAM = Air Conformity Applicability Model; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; MOA = Military Operations Area; ROI = region of influence
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*). The ROI for the Hog A MOA is Franklin, Logan, Montgomery, Scott, Sebastian, and Yale Counties.

Hog B MOA

Similarly, and as illustrated in **Table 3.8-14**, the increase in CO_2e emissions in the Hog B MOA due to additional operations under the Proposed Action is also below the insignificance threshold. The percentage of the ROI baseline emissions is minimal, further confirming that the increase in GHG emissions under the Proposed Action would not result in significant localized effects.

Table 3.8-14. Change in GHG Emissions for Hog B MOA – Proposed Action

	CO_2e
Proposed Action Total Hog B MOA Emissions	10,187
Insignificance Indicator	75,000
Exceedance?	No
Hog B MOA ROI Emissions	2,608,044
Percentage of ROI	0.39%

Key: % = percent; ACAM = Air Conformity Applicability Model; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; MOA = Military Operations Area; ROI = region of influence
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*). The ROI for the Hog B MOA is Le Flore (Oklahoma), Montgomery, Polk, and Scott Counties.

R-2401/R-2402 Airspace

In the R-2401/R-2402 airspace, the Proposed Action results in a small increase in CO_2e emissions as shown in **Table 3.8-15**. As with the other airspaces, these emissions remain below the insignificance threshold and constitute only a minor percentage of the ROI baseline emissions. This analysis confirms that the GHG emissions for this airspace are negligible.

Across all airspaces assessed under the Proposed Action, the increase in GHG emissions remains below the insignificance threshold of 75,000 tpy. When compared to ROI baseline emissions, the changes are minimal, representing a negligible percentage of the ROI. These findings indicate that the Proposed Action would not result in significant localized effects from GHG emissions.

Table 3.8-15. Change in GHG Emissions for R-2401/R-2402 Airspace – Proposed Action

	CO_2e
Proposed Action Total R-2401/R-2402 Emissions	168
Insignificance Indicator	75,000
Exceedance?	No
R-2401/R-2402 ROI Emissions	1,934,259
Percentage of ROI	0.01%

Source: (USEPA, 2024e)
Key: % = percent; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; MOA = Military Operations Area; R- = Restricted Area; ROI = region of influence
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*). The ROI for R-2402 or R-2401 is Franklin, Logan, and Sebastian Counties.

3.8.2.2 Alternative 1

3.8.2.2.1 Installation and Surrounding Area

Airfield Operations

The number of annual operations, airspace events, and range activities would remain consistent with the No Action Alternative. However, the introduction of STOVL maneuvers for F-35B aircraft represents a procedural change not previously analyzed in the 2023 FMS PTC EIS. STOVL operations involve vertical landings on the newly constructed VLP, which differ from conventional operations due to increased power settings, fuel consumption, and emissions during the descent and landing phases. The estimated emissions of F-35 operations under the Alternative 1 are quantified in **Table 3.8-16**.

Table 3.8-16. Operational Emissions – Alternative 1

Activity	Emissions (tpy)							
	VOC	SO_2	NO_X	CO	PM_{10}	$PM_{2.5}$	Pb	CO_2e
F-35B Operations	4.18	2.44	26.35	23.07	3.76	3.47	0.00	5,483
F-35A Operations	20.84	12.72	134.28	122.18	19.20	17.70	0.00	29,019
Total Emissions	25.03	15.16	160.64	145.25	22.97	21.17	0.00	34,506
ROI Baseline [(a)]	17,586	183	2,853	22,468	7,295	2,308	0.00	999,002
Percentage of ROI	0.14%	8.29%	5.63%	0.65%	0.31%	0.92%	0.00%	3.45%
Insignificance Indicator	250	250	250	250	250	250	25	75,000
Exceedance?	No	No	No	No	No	No	No	No

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; ANG = Air National Guard Base; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_X = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound; VLP = Vertical Landing Pad
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).
a. The ROI for Ebbing ANG Base/FSRA emissions is Sebastian County, Arkansas.

Despite these changes, overall emissions from operations under Alternative 1 are not anticipated to generate significant quantities of any pollutant or GHG. With no new significant sources of air pollutants and emissions remaining well below regulatory thresholds for insignificance, Alternative 1 would not result in significant effects on air quality.

Personnel

Personnel numbers would remain unchanged from the No Action Alternative.

Facility Requirements

The only construction activity proposed under Alternative 1 would be the development of a VLP at one of the two potential sites identified in Section 2.1.3.1, *Proposed Action*, *VLP Site Subalternatives*. Construction emissions associated with both VLP Subalternatives for Alternative 1 would be the same as those discussed under the Proposed Action in Section 3.8.2.1.1, *Installation and Surrounding Area*, and presented in **Table 3.8-8**.

Installation and Surrounding Area Summary

Table 3.8-17 presents the combines emissions from VLP construction, F-35A operations, and F-35B operations, and compares them to the ROI baseline or Sebastian County. Emissions are presented as a change percentage of the ROI baseline. As illustrated, VOCs would increase by 0.14%, SO_2 by 8.29%, NO_X by 5.64%, CO by 0.65%, PM_{10} by 0.32%, $PM_{2.5}$ by 0.92%, and CO_2e by 3.46%. All emissions remain below the regulatory insignificance thresholds.

As with the Proposed Action, emissions under Alternative 1 would be minor and localized, with construction effects phased and temporary in nature. Operational and construction-related emissions are below the insignificance threshold and would not result in adverse effects to regional air quality. For additional details, see Appendix E, *Air Quality Calculations*, which provides the ACAM analysis reports to support this conclusion.

Table 3.8-17. Total Emissions – Alternative 1

	Emissions (tpy)							
Activity	**VOC**	**SO_2**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**Pb**	**CO_2e**
VLP Construction	0.06	0.00	0.21	0.28	0.40	0.01	0.00	45.68
F-35B Operations	4.18	2.44	26.35	23.07	3.76	3.47	0.00	5,483
F-35A Operations	20.84	12.72	134.28	122.18	19.20	17.70	0.00	29,019
Total Emissions	25.09	15.16	160.84	145.53	23.37	21.17	0.00	34,552
ROI Baseline [(a)]	17,586	183	2,853	22,468	7,295	2,308	0.00	999,002
Percentage of ROI	0.14%	8.29%	5.64%	0.65%	0.32%	0.92%	0.00%	3.46%
Insignificance Indicator	250	250	250	250	250	250	25	75,000
Exceedance?	No	No	No	No	No	No	No	No

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; ANG = Air National Guard Base; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_X = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound; VLP = Vertical Landing Pad
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).
a. The ROI for Ebbing ANG Base/FSRA emissions is Sebastian County, Arkansas.

3.8.2.2.2 Airspace and Ranges

For Alternative 1, overall operations in the airspace and ranges would not change from the No Action Alternative; however, the percentage of time spent below 3,000 feet AGL in Hog A MOA, Hog B MOA, and R-2401/R-2402 would increase, resulting in additional emissions of criteria pollutants in these airspaces. These associated emissions were compared to baseline conditions, with the baseline ROI emissions for each airspace calculated using the same methodology as described for the Proposed Action. As previously stated, this approach utilized 2020 NEI data to sum emissions from the counties underlying each airspace. Changes in emissions below 3,000 feet AGL due to Alternative 1 were evaluated against the significance threshold of 250 tpy and expressed as percentages of the baseline ROI to assess potential air quality effects.

Hog A MOA

Emissions from operations below 3,000 feet AGL in the Hog A MOA under Alternative 1 were calculated and compared to the baseline emissions in **Table 3.8-18**. Similar to the analysis presented for the Proposed Action, the results show that changes in emissions for criteria pollutants remain negligible. The changes represent a fraction of the 250 tpy threshold and an even smaller percentage of the ROI, indicating that the air quality effects in Hog A MOA would not be significant.

Table 3.8-18. Change in Emissions Below 3,000 Feet AGL for Hog A MOA – Alternative 1

	Pollutants (tpy)					
	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Alternative 1 Total Hog A MOA Emissions	0.24	12.97	0.75	0.68	0.66	0.00
Insignificance Indicator	250	250	250	250	250	250
Exceedance?	No	No	No	No	No	No
Hog A MOA ROI Emissions	95,314	9,585	30,557	10,010	739	117,429
Percentage of ROI	0.00%	0.14%	0.00%	0.01%	0.09%	0.00%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; AGL = above ground level; CO = carbon monoxide; MOA = Military Operations Area; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Note: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).

Hog B MOA

The calculated changes in emissions for Alternative 1 under Hog MOA remain well below the insignificance indicator of 250 tpy, with percentages of ROI that indicate negligible effects (**Table 3.8-19**). As with Hog A MOA, emissions under Alternative 1 for this airspace are not anticipated to contribute meaningfully to changes in regional air quality.

Table 3.8-19. Change in Emissions Below 3,000 Feet AGL for Hog B MOA – Alternative 1

	Pollutants (tpy)					
	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Alternative 1 Total Hog B MOA Emissions	0.07	3.21	0.19	0.17	0.16	0.00
Insignificance Indicator	250	250	250	250	250	250
Exceedance?	No	No	No	No	No	No
Hog B MOA ROI Emissions	72,428	6,625	23,328	7,640	858	99,652
Percentage of ROI	0.00%	0.05%	0.00%	0.00%	0.02%	0.00%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; AGL = above ground level; CO = carbon monoxide; MOA = Military Operations Area; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Note: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).

R-2402 or R-2401

As shown in **Table 3.8-20**, changes in emissions for this airspace are minimal and fall far below the 250 tpy threshold. Percentages of ROI further illustrate that emissions remain insignificant, consistent with findings for other analyzed airspaces.

Table 3.8-20. Change in Emissions Below 3,000 Feet AGL for R-2401/R-2402 – Alternative 1

	Pollutants (tpy)					
	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Alternative 1 Total R-2401/R-2402 Emissions	0.01	0.25	0.02	0.01	0.01	0.00
Insignificance Indicator	250	250	250	250	250	250
Exceedance?	No	No	No	No	No	No
R-2401 or R-2402 ROI Emissions	44,133	7,086	16,801	4,825	363	50,722
Percentage of ROI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; AGL = above ground level; CO = carbon monoxide; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; R- = Restricted Area; ROI = region of influence; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound
Note: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*).

Airspace and Ranges Summary

As shown in **Table 3.8-18**, **Table 3.8-19**, and **Table 3.8-20**, the analysis of Alternative 1 emissions below 3,000 feet AGL for Hog A MOA, Hog B MOA, and R-2401/R-2402 demonstrates that changes in emissions for criteria pollutants are negligible, with no significant air quality effects anticipated. This conclusion is supported by the low percentages of ROI and the fact that emissions remain well below the insignificance threshold of 250 tpy. As a result, Alternative 1 would not adversely affect regional air quality.

Greenhouse Gas Emissions

Under Alternative 1, overall operations in the airspace and ranges would not change from the No Action Alternative; however, the percentage of time spent under 3,000 feet AGL would increase within the Hog A MOA, Hog B MOA, and R-2401/R-2402 airspaces, leading to additional GHG emissions. Unlike criteria pollutants, which are often analyzed for effects below 3,000 feet AGL due to their localized nature, GHG emissions are assessed throughout the entire column of airspace. This approach is necessary because GHGs are well mixed in the atmosphere. The ROI baseline emissions for each airspace were calculated by summing the GHG emissions from the counties underlying the airspace, using data from the 2020 NEI as summarized in Section 3.8.1.2, *Airspace and Ranges* (**Table 3.8-3**). For each airspace, the change in CO_2e emissions was compared to the insignificance threshold of 75,000 tpy and expressed as a percentage of ROI emissions. The results are summarized in the following sections, with detailed data provided in accompanying tables.

Hog A MOA

Table 3.8-21 shows that the total CO_2e emissions for the Hog A MOA under Alternative 1 remain well below the insignificance threshold of 75,000 tpy. The change in emissions constitutes approximately 0.58% of the ROI emissions, indicating a negligible effect.

Table 3.8-21. Change in GHG Emissions for Hog A MOA – Alternative 1

	CO_2e
Alternative 1 Total Hog A MOA Emissions	16,637
Insignificance Indicator	75,000
Exceedance?	No
Hog A MOA ROI Emissions	2,847,630
Percentage of ROI	0.58%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = Air Conformity Applicability Model; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; MOA = Military Operations Area; ROI = region of influence
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*). The ROI for Hog A MOA is Franklin, Logan, Montgomery, Scott, Sebastian, and Yale Counties.

Hog B MOA

As seen in **Table 3.8-22**, the increase in CO_2e emissions within the Hog B MOA is also well below the insignificance threshold. The change represents approximately 0.41% of the ROI baseline emissions, indicating that the effect of GHG emissions under Alternative 1 is minimal.

Table 3.8-22. Change in GHG Emissions for Hog B MOA – Alternative 1

	CO_2e
Alternative 1 Total Hog B MOA Emissions	10,791
Insignificance Indicator	75,000
Exceedance?	No
Hog B MOA ROI Emissions	2,608,044
Percentage of ROI	0.41%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = ACAM = Air Conformity Applicability Model; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; MOA = Military Operations Area; ROI = region of influence
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*). The ROI for Hog B MOA is Le Flore (Oklahoma), Montgomery, Polk, and Scott Counties.

R-2401/R-2402

Table 3.8-23 indicates that the total CO_2e emissions within R-2401/R-2402 are significantly below the insignificance threshold of 75,000 tpy. The net change accounts for only 0.01% of the ROI baseline emissions, demonstrating a negligible localized effects.

Table 3.8-23. Change in GHG Emissions for R-2401/R-2402 Airspace – Alternative 1

	CO_2e
Alternative 1 Total R-2401/R-2402 Emissions	228
Insignificance Indicator	75,000
Exceedance?	No
R-2401/R-2402 ROI Emissions	1,934,259
Percentage of ROI	0.01%

Source: (USEPA, 2024e)
Key: % = percent; ACAM = ACAM = Air Conformity Applicability Model; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; MOA = Military Operations Area; R- = Restricted Area; ROI = region of influence
Notes: Estimated from ACAM output (see Appendix E, *Air Quality Calculations*). The ROI for R-2402 or R-2401 is Franklin, Logan, and Sebastian Counties.

Across all airspaces under Alternative 1, the increase in GHG emissions remains well below the insignificance threshold of 75,000 tpy. When compared to the ROI baseline emissions, the

changes are minimal, representing 0.58%, 0.41%, and 0.01% for the Hog A MOA, Hog B MOA, and R-2401/R-2402 airspace, respectively. These findings indicate that the GHG emissions associated with Alternative 1 are negligible and would not result in significant localized effects.

3.8.2.3 No Action Alternative

Under the No Action Alternative, no changes would occur to the current mission at Ebbing ANG Base, and air emissions would remain consistent with the conditions as described in the 2023 FMS PTC EIS § 3.12.2.8 and the modifications outlined in the 2023 ROD. This includes baseline emissions associated with ongoing operations, such as existing aircraft activity, personnel commuting—reflecting the increase in personnel to 625—and stationary sources. Air quality in Sebastian County would remain unchanged, with all pollutants continuing to meet the NAAQS, as the county is in attainment for all criteria pollutants.

For detailed air quality conditions, emissions assumptions, and calculation methodologies, refer to the 2023 FMS PTC EIS § 3.10.1 and Appendix D, § D.2.

3.8.2.3.1 Installation and Surrounding Area

As analyzed in the 2023 FMS PTC EIS (§ 3.10.4.1), emissions associated with installation activities, including stationary sources, vehicle use, and personnel commuting, were projected to remain within compliance of all regulatory thresholds. The projected increase in emissions were within the expected range and consistent with compliance requirements for both criteria pollutants and GHGs. These findings confirm that the installation's air emissions would not exceed the NAAQS or other applicable air quality regulations.

3.8.2.3.2 Airspace and Ranges

As indicated in the 2023 FMS PTC EIS (§ 3.10.4.2), emissions associated with aircraft operations within airspace and training areas, including the Hog MOA, Razorback Range, and MTRs, were projected to remain within regulatory thresholds for all criteria pollutants and GHGs. While there was an increase in emissions compared to previous levels, these emissions were consistent with the baseline conditions established in the 2023 FMS PTC EIS.

3.8.2.4 Cumulative Effects

The emissions associated with the Proposed Action, when combined with past, present, and reasonably foreseeable future actions, which are listed in **Table 3.1-2** and **Table 3.1-3**, would contribute incrementally to the regional air quality baseline. These cumulative emissions would result from construction activities, increased aircraft operations, and additional personnel commuting. Nearby projects, such as the FSRA improvements, Veterans Administration Hospital construction, and ongoing community development at Chaffee Crossing, would also generate emissions from construction and operational activities.

Despite the cumulative increase in emissions, the region remains in attainment for all criteria pollutants under the NAAQS. Emissions from each individual project, including the Proposed Action, have been assessed for compliance with air quality regulations. BMPs have been implemented where applicable to minimize effects including dust suppression measures and the use of low-emission construction equipment. Additionally, operational emissions associated

with increased aircraft activities would be consistent with those analyzed in the 2023 FMS PTC EIS and this SEIS, ensuring compliance with applicable thresholds for both criteria pollutants and GHGs.

While GHG emissions from the Proposed Action are not expected to significantly contribute to extreme weather and associated long-term environmental effects described in **Table 3.1-3** on their own, they would add incrementally to the global GHG inventory. These emissions, along with those from other regional projects, would be minimized through the implementation of energy-efficient designs and operational BMPs. Given the regulatory compliance of individual projects and the ongoing application of mitigation measures, cumulative air quality effects associated with the Proposed Action and other reasonably foreseeable future actions are expected to be less than significant.

3.8.2.5 Mitigations

Mitigation measures for air quality under the Proposed Action focus on minimizing potential increases in emissions associated with FMS PTC construction activities, personnel commuting, and aircraft operations, as well as addressing any potential localized effects. Although the Proposed Action is not anticipated to result in significant effects to air quality, the following mitigation measures and BMPs are recommended to ensure compliance with applicable air quality standards and to further reduce emissions:

Construction Activities:

- Implement BMPs to control fugitive dust emissions during construction, such as regular watering of exposed soil, applying soil stabilizers, and limiting construction vehicle speeds.
- Use low-emission construction equipment, including vehicles with modern emissions control technologies, where feasible.
- Establish designated haul routes to direct construction traffic away from residential areas, schools, healthcare facilities, and other sensitive locations to minimize air quality effects on vulnerable populations, where feasible.
- Require idling limits for construction equipment to reduce emissions of particulate matter and GHGs.

Aircraft Operations:

- Optimize flight training schedules and mission planning to reduce redundant operations and minimize low-altitude activity, which generates higher emissions.
- Conduct regular maintenance on aircraft to ensure optimal fuel efficiency and minimize emissions.

Greenhouse Gas Reductions:

- Incorporate energy-efficient practices into facility operations and construction.
- Participate in DoD initiatives to track and reduce GHG emissions.

As currently conducted, the DAF would continue to monitor emissions associated with the Proposed Action to ensure compliance with the NAAQS and applicable state air quality regulations. Additionally, any mitigations adopted as part of noise mitigation strategies, such as adjusted flight patterns, would be evaluated for their potential to reduce air pollutant emissions as well.

These measures, combined with ongoing compliance with air quality regulations, would ensure that air emissions under the Proposed Action remain within acceptable limits and do not result in significant effects to air quality in the ROI.

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