

**Draft Programmatic
Environmental Assessment
NEPA Compliance for 82d Training Wing and 80th Flying
Training Wing Area Development Plans for Sheppard Air
Force Base, Wichita County, Texas**

October 2023



Prepared for:
United States Air Force
82d Training Wing and 80th Flying Training Wing



PRIVACY ADVISORY

This Programmatic Environmental Assessment (PEA) is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500–1508), and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*.

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

Public commenting allows the Air Force to make better, informed decisions. Letters or other written or oral comments provided may be published in the PEA. As required by law, comments provided will be addressed in the PEA and made available to the public. Providing personal information is voluntary. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meetings or hearings or to fulfill requests for copies of the PEA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the PEA; however, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the PEA.

COMPLIANCE

This document has been certified that it does not exceed 75 pages, not including appendices, as defined in 40 CFR § 1501.5(f). In accordance with 40 CFR § 1508.1(v), a "page" means 500 words and does not include maps, diagrams, graphs, tables, and other means of graphically displaying quantitative or geospatial information.

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COVER SHEET

DRAFT PROGRAMMATIC ENVIRONMENTAL ASSESSMENT NEPA COMPLIANCE FOR 82D TRAINING WING AND 80TH FLYING TRAINING WING AREA DEVELOPMENT PLANS FOR SHEPPARD AIR FORCE BASE, WICHITA COUNTY, TEXAS

- a. *Responsible Agency: United States Air Force*
- b. *Location: Sheppard Air Force Base, Wichita County, Texas*
- c. *Designation: Draft Programmatic Environmental Assessment*
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Abstract:

This Draft Programmatic Environmental Assessment (EA) has been prepared pursuant to provisions of the National Environmental Policy Act, Title 42 *United States Code*, §§ 4321–4370, implemented by Council on Environmental Quality Regulations at Title 40, *Code of Federal Regulations* (CFR) Parts 1500–1508, and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*. Potentially affected environmental resources were identified in coordination with local, state, and federal agencies. Specific environmental resources with the potential for environmental consequences include land use; air quality; earth resources; water resources; biological resources; cultural resources; noise; infrastructure (including transportation and utilities); hazardous materials and wastes, safety; socioeconomics; and environmental justice and protection of children.

The purpose of the Proposed Action is to support Sheppard Air Force Base (AFB)'s future mission and training requirements and maintain the joint training mission through selected development actions and real property improvements. The construction of new facilities, renovations and repair of existing facilities,

demolition of obsolete facilities, and consolidation of mission support functions would address existing deficiencies in support facilities and operations at Sheppard AFB. To meet the mission requirements of the 82d Training Wing, the 80th Flying Training Wing, and their tenant units, adequate facilities and infrastructure are needed. Left unchecked, deficiencies in facilities and infrastructure would degrade the Installation's ability to meet Air Force current and future technical and pilot training mission requirements.

The analysis of the affected environment and environmental consequences of implementing the Proposed Action Alternatives and No Action Alternative concluded that by implementing standing environmental protection measures and Best Management Practices, there would be no significant adverse impacts from the actions at Sheppard AFB on environmental resources. Sheppard AFB is an active installation with aircraft operations, demolition, and new construction actions currently under way as well as future development currently in the planning phase. Impacts associated with construction, demolition, and renovation would be minor; therefore, significant cumulative impacts are not anticipated from activities associated with the Proposed Action Alternatives and No Action Alternative when considered in conjunction with other past, present, or reasonably foreseeable environmental trends or future actions at Sheppard AFB.

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LIST OF ACRONYMS AND ABBREVIATIONS

80 FTW	80th Flying Training Wing
82 TRW	82d Training Wing
AAFES	Army and Air Force Exchange Service
AAGR	average annual growth rate
ACAM	Air Conformity Applicability Model
ACM	asbestos-containing materials
ADP	Area Development Plan
AETC	Air Education and Training Command
AFB	Air Force Base
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFFF	aqueous film forming foam
AICUZ	Air Installation Compatible Use Zone
Air Force	United States Air Force
APE	Area of Potential Effect
APZ	accident potential zone
AWFI AQCR	Abilene-Wichita Falls Interstate Air Quality Control
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
CAA	Clean Air Act
CCD	Census County Division
CDC	Child Development Center
CEJCs	communities with environmental justice concerns
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Closure, Liability Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO ₂ e	carbon dioxide-equivalent
CSE	Comprehensive Site Evaluation
CWA	Clean Water Act
CZ	clear zone
dBA	A-weighted decibels
DNL	Day-Night Average Sound Level
DoD	US Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
ENJJPT	Euro-NATO Joint Jet Pilot Training
EO	Executive Order
ESA	Endangered Species Act
ESQD	explosive safety quantity distance
FEMA	Federal Emergency Management Agency
FOD	foreign object debris
FONSI	Finding of No Significant Impact
FR	Federal Register
ft ²	square foot/feet
GITA	Ground Instructional Trainer Aircraft
GHG	greenhouse gas
HQ	Headquarters
HAZMAT	hazardous materials
HWMP	Hazardous Waste Management Plan
IDP	Installation Development Plan
IPaC	Information for Planning and Consultation

IRP	Installation Restoration Program
ISD	Independent School District
LBP	lead-based paint
lbs	pounds
lf	linear feet
MBTA	Migratory Bird Treaty Act
MMRP	Military Munitions Response Program
MS4	Municipal Separate Storm Sewer System
MSA	Munitions Storage Area
MSGP	Multi-Sector General Permits
MWD	military working dogs
NAAQS	National Ambient Air Quality Standards
NATO	North Atlantic Treaty Organization
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O/H	overhead
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyls
PEA	Programmatic Environmental Assessment
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SGCN	species of greatest conservation need
SHPO	State Historic Preservation Office(r)
SOP	standard operating procedure
SPCC	Spill Prevention, Control, and Countermeasure
SWMP	Stormwater Management Plan
SWP3	Stormwater Pollution Prevention Plan
TCEQ	Texas Commission on Environmental Quality
TCPs	Traditional Cultural Properties
THC	Texas Historical Commission
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
tpy	tons per year
TRS	Training Squadron
TWDB	Texas Water Development Board
UFC	Unified Facilities Criteria
U/G	underground
US	United States
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

CHAPTER 1 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States (US) Air Force (Air Force) Air Education and Training Command (AETC) 82d Training Wing (82 TRW) and 80th Flying Training Wing (80 FTW) at Sheppard Air Force Base (AFB), Texas, proposes to implement multiple Area Development Plan (ADP) projects to address deficient training infrastructure and facilities on the Installation over the next approximately seven years. The proposed projects would address individual buildings and various infrastructure components throughout the Installation as identified in the *80th FTW Campus Planning District Area Development Plan* (Sheppard AFB, 2018) and *Technical Training District Plan* (Sheppard AFB, 2022a). Some of these projects are conceptual in nature and may undergo changes during the design process. Accordingly, this Programmatic Environmental Assessment (PEA) analyzes the scope and potential impacts of these projects based on existing data. As design for the projects is further refined, some projects may require additional analysis and will be individually re-evaluated prior to construction to ensure environmental compliance. This PEA will continue to serve as a valid assessment of projects that remain unchanged.

This PEA evaluates the potential environmental, cultural, and socioeconomic effects of the proposed ADP projects to be implemented at Sheppard AFB. These projects are collectively referred to as the “Proposed Action” in this PEA.

This PEA is prepared in accordance with the *National Environmental Policy Act of 1969*, as amended ([42 United States Code \[USC\] § 4321](#) et seq.) (NEPA); the Council on Environmental Quality (CEQ) NEPA regulations ([40 Code of Federal Regulations \[CFR\] Parts 1500–1508](#)); and the Air Force NEPA regulations at [32 CFR Part 989](#), *Environmental Impact Analysis Process (EIAP)*. EIAP informs decision-makers, regulatory agencies, and the public about an Air Force proposed action before any decision is made on whether to implement the action. During the EIAP, if analyses in the PEA determine that potential significant adverse effects would, or would be likely to, occur under the Proposed Action, the Air Force would publish a Notice of Intent in the *Federal Register* to prepare an Environmental Impact Statement (EIS).

The information presented in this document will serve as the basis for deciding whether the Proposed Action would result in a significant impact to the human or natural environment, requiring the preparation of an EIS, or whether no significant impacts would occur, in which case a Finding of No Significant Impact (FONSI) would be issued. Because the execution of the Proposed Action or Alternatives would unavoidably occur in a floodplain, a Finding of No Practicable Alternative would be prepared in conjunction with the FONSI, pursuant to the requirements of Executive Order (EO) 11990, *Protection of Wetlands*, and EO 11988, *Floodplain Management*.

The CEQ NEPA regulations at [40 CFR § 1500.1\(b\)](#), [40 CFR § 1506.6\(b\) and \(c\)](#), and [40 CFR § 1507.4](#) provide purpose and direction for streamlining the NEPA process. CEQ memoranda (e.g., March 6, 2012) and guidance on modernizing the NEPA process (CEQ, 2003) identify opportunities to streamline the NEPA process, including the use of technology for communications and information dissemination. This PEA satisfies the requirements of NEPA in accordance with the CEQ regulations and promotes NEPA streamlining through the implementation of the Air Force EIAP. To render this document more concise, links are provided to online data sources to which the reader can refer for more information. Should the reader not have internet access, please contact the Air Force point of contact listed on the **Cover Sheet** of this PEA, and accommodations will be made to provide print copies of relevant information requested.

1.2 SHEPPARD AIR FORCE BASE

Sheppard AFB is located in north-central Texas, approximately six miles south of the Texas-Oklahoma border (**Figure 1-1**). Activated in 1941 during World War II, Sheppard AFB is home to the 82d TRW, which is one of the largest technical training wings in the Air Force. The Installation also hosts the only internationally manned and managed flying training program, the Euro-North Atlantic Treaty Organization (NATO) Joint Jet Pilot Training (ENJJPT) Program, which is conducted by the 80 FTW. Situated on approximately 5,297 acres of land in Wichita County, Texas, just north of the city of Wichita Falls, the Installation supports diverse aircraft training missions for pilots and operational support specialists (e.g., engineering, maintenance, equipment, fuels, munitions, and telecommunications) (**Figure 1-2**) (Air Force, 2015a; Texas Comptroller, 2021).

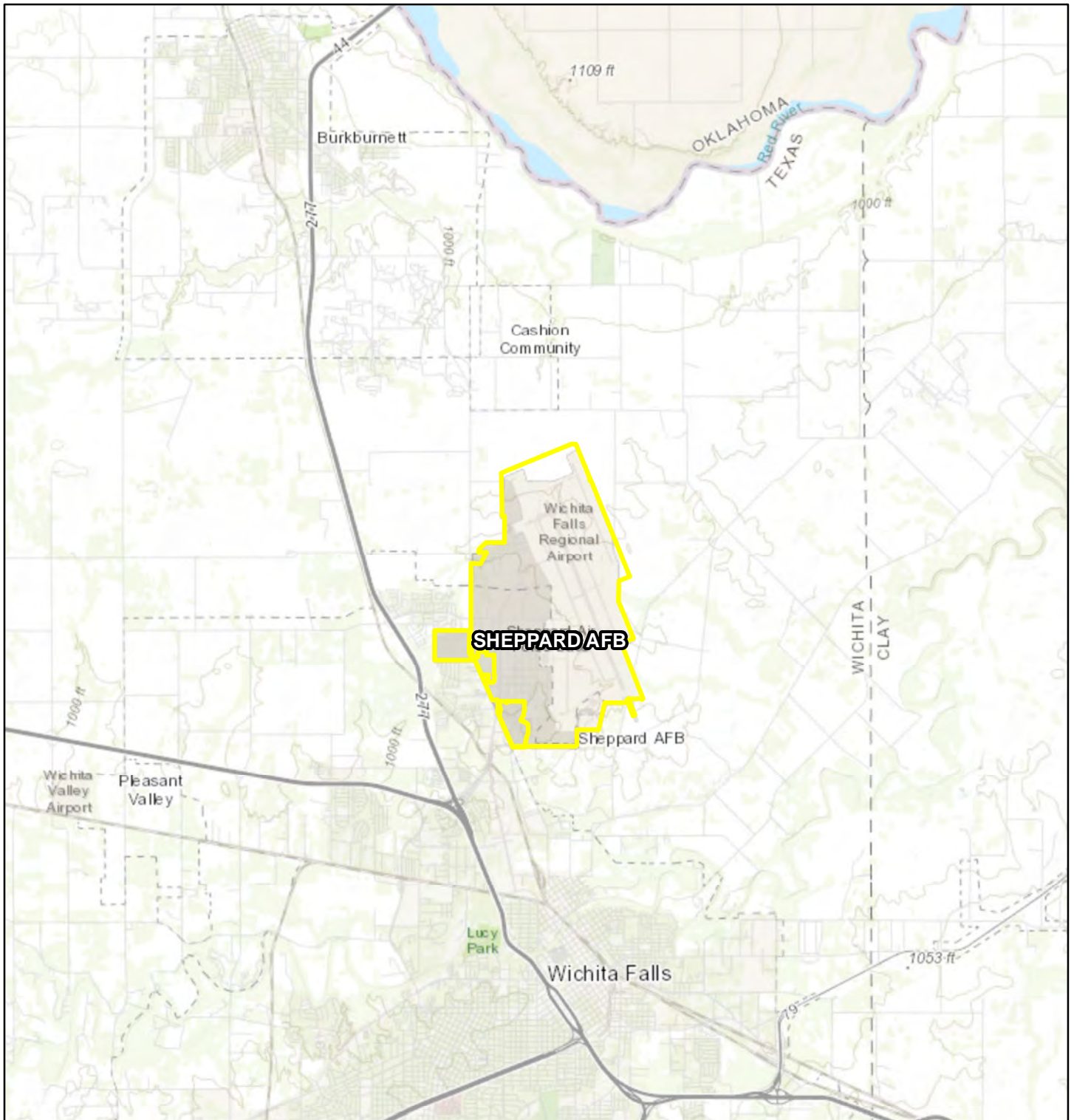



FIGURE 1-1
Regional Overview

 Installation Boundary



0 1 2
Mile

Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



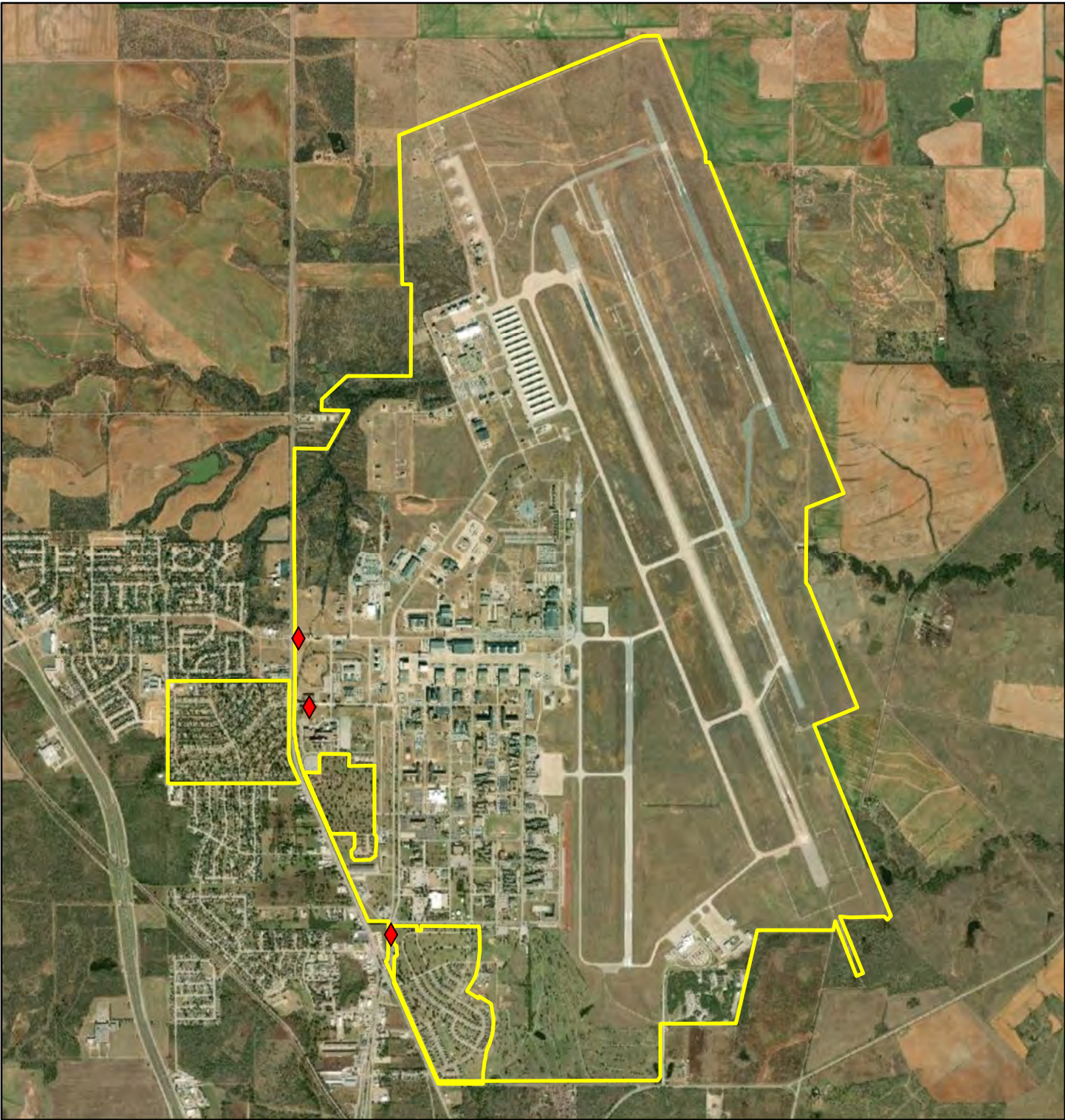


FIGURE 1-2
Sheppard Air Force Base

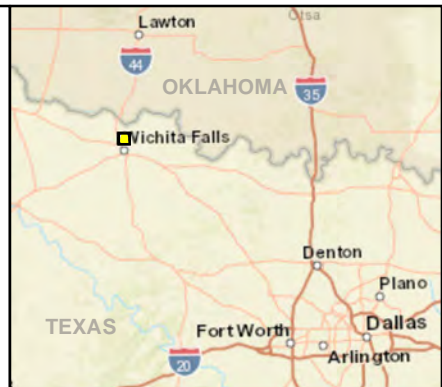
◆ Entry Points

▭ Installation Boundary



0 30 60 90
Mile

Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



As a joint training base for the Air Force, Army, Navy, and Marine Corps, Sheppard AFB graduates more than 60,000 students annually, including nearly 200 pilots, and operates the Air Force's second busiest joint-use, non-combat airfield. Approximately 19,500 personnel are permanently stationed at the Installation to administer training programs and provide support services (Air Force, 2015a). Training and operations at Sheppard AFB are centered on a large airfield located on the east side of the Installation. The airfield has three parallel runways that are oriented northwest to southeast and a fourth runway that runs north to south located just west of the other three; administrative/support and housing areas are located on the west side of the Installation.

To sustain the long-term mission of Sheppard AFB, the Installation prepared an Installation Development Plan (IDP) in 2016 to act as a blueprint to guide future decisions regarding on-Base development needed to meet and sustain its mission capability (Sheppard AFB, 2016). The IDP delineated 12 planning districts on the main portion of Sheppard AFB. In 2018 and 2022, respectively, Sheppard AFB, in collaboration with stakeholders, developed two ADPs that encompass the 80 FTW Campus Planning District and the Technical Training Planning District. The preparation of these ADPs followed Unified Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*. Projects under the Proposed Action would occur primarily in the 80 FTW Campus Planning District, the Base Support and Industrial District, the Technical Training District, and the Flightline District, with one project occurring in the Community Services District.

1.2.1 80 FTW Campus Planning District

The 80 FTW Campus Planning District comprises 242 acres located in the northwest section of the Installation. Functions in the district include flight training and operations in support of the ENJJPT program and aircraft maintenance support for the 80 FTW. It is also home to the 80 FTW Wing Headquarters (HQ) and administrative functions (Sheppard AFB, 2018).

1.2.2 Base Support and Industrial District

The Base Support and Industrial District is on the northwest side of the Installation. This area contains facilities and shops that are industrial/administrative in nature and focused on Base support missions such as the civil engineering functions, vehicle maintenance, and the fuel tank farm. Munitions storage is also located in this district along with some outdoor recreation uses. This district includes the "Little Adobe" historic structure (Building 2130), the former Kell Field Air Terminal.

1.2.3 Technical Training District

The Technical Training District is currently defined as the area east of Bridwell Road, west of Avenue K, and north of 9th Avenue. The southern border of the district forms a distinct separation between training facilities and living facilities contained in the Airmen-in-Training Campus District. The Technical Training District consists of three main components: the civil engineering training area, the aircraft ramp area where aircraft maintenance training is conducted, and the aircraft fuels training area.

1.2.4 Community Services District

The Community Services District contains most of the Installation's community support facilities and activities, as well as multiple administrative uses. It is bounded by Avenue H on the east, 1st Avenue on the south, Burkburnett Road and Moates Avenue on the west, and 5th Avenue on the north. There are some older, temporary lodging facilities and visiting officer quarters units (Buildings 127–134, all built in 1962) on the southern edge of the district.

1.2.5 Flightline District

The Flightline District is characterized by the four runways, their associated taxiways, taxi lanes, parking ramps/aprons, aircraft hangars, aircraft maintenance units, squadron operations, aerospace ground equipment, back shops, the air traffic control tower, and administrative facilities directly related to flight operations or aircraft maintenance. This district is largely industrial and utilitarian in nature, comprising

facilities and land uses almost exclusively dedicated to the support of airfield operations. This district includes two historic structures: Building 2560 and the Strategic Air Command Alert Apron.

1.3 PURPOSE AND NEED

The purpose of the Proposed Action is to support Sheppard AFB's future mission and training requirements and maintain the joint training mission through selected development actions and real property improvements. The construction of new facilities, renovations and repair of existing facilities, demolition of obsolete facilities, and consolidation of mission support functions would address existing deficiencies in support facilities and operations at Sheppard AFB. The Proposed Action is needed to provide facilities and infrastructure that are adequate to meet the mission requirements of the 82 TRW, the 80 FTW, and their tenant units. Left unchecked, deficiencies in facilities and infrastructure would degrade the Installation's ability to meet Air Force current and future technical and pilot training mission requirements.

This PEA evaluates short-range (one-to-three years), medium-range (four-to-six years), and long-range (seven or more years) development projects at Sheppard AFB identified through a collaborative planning process (Sheppard AFB, 2016).

1.4 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The Air Force NEPA regulations at [32 CFR § 989.11](#) require an assessment of potential environmental impacts for Air Force projects recommended in a comprehensive plan such as an ADP or IDP. In accordance with [40 CFR § 1501.3](#), the Air Force determined the appropriate level for this analysis is an Environmental Assessment (EA). An EA is a concise public document that briefly discusses the purpose and need, alternatives, and potential environmental impacts of a proposed federal action. It aids in agency planning and decision-making, or facilitates the preparation of an EIS, as necessary ([40 CFR § 1501.5](#)).

This PEA evaluates the potential environmental consequences of implementing the Proposed Action and Alternatives for ADP projects at Sheppard AFB. This PEA has been prepared in accordance with NEPA, CEQ regulations ([40 CFR Parts 1500–1508](#)), and the EIAP ([32 CFR Part 989](#)). NEPA is the basic national requirement for identifying environmental consequences of federal decisions. NEPA ensures that environmental information, including the anticipated environmental consequences of a proposed action, is available to the public, federal and state agencies, and the decision-maker before decisions are made and before actions are taken.

NEPA, which is implemented through the CEQ regulations, requires federal agencies to consider alternatives to the Proposed Action and to analyze potential impacts of alternative actions. Potential impacts of the Proposed Action and Alternatives described in this document will be assessed in accordance with the Air Force EIAP (32 CFR Part 989). To help the public and decision-makers understand the implications of impacts, the impacts will be described in the short and long term, cumulatively, and within context. This PEA analyzes the following environmental resources: noise; safety; air quality; biological, water, visual, and cultural resources; soils; land use; socioeconomics; environmental justice and protection of children; hazardous materials and wastes, toxic substances, and contaminated sites; and infrastructure, transportation, and utilities.

1.5 INTERGOVERNMENTAL COORDINATION, PUBLIC AND AGENCY PARTICIPATION

The EIAP, in compliance with NEPA guidance, includes public and agency review of information pertinent to a proposed action and alternatives. The Air Force's compliance with the requirement for intergovernmental coordination and agency participation begins with the scoping¹ process ([40 CFR § 1501.9](#)). Accordingly, and per EO 12372, *Intergovernmental Review of Federal Programs*, the Air Force notified federal, state, and local agencies and tribal governments with jurisdiction that could potentially be affected by the Proposed Action and Alternatives via written correspondence throughout the development

¹ Scoping is a process for determining the extent of issues to be addressed and analyzed in a NEPA document.

of this PEA. A mailing list of the recipients of this correspondence as well as a sample of the outgoing letters and all responses are included in **Appendix A**.

1.5.1 Government-to-Government Consultation

The *National Historic Preservation Act* (54 USC § 300101, et seq.) (NHPA) and its regulations at 36 CFR Part 800 direct federal agencies to consult with Indian tribes when a proposed action or alternatives may have an effect on tribal lands or on properties of religious and cultural significance to a tribe. Consistent with NHPA, US Department of Defense (DoD) Instruction 4710.02, *Interactions with Federally Recognized Tribes*, and Department of the Air Force Instruction 90-2002, *Air Force Interaction with Federally Recognized Tribes*, the Air Force invited federally recognized tribes that are historically affiliated with lands in the vicinity of the Proposed Action and Alternatives to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation and requires separate notification to all relevant tribes. The timelines for tribal consultation are also distinct from those of the other consultations. The Sheppard AFB point of contact for consultation with Indian tribes, the Tribal Historic Preservation Officer, and the State Historic Preservation Office (SHPO) is the Deputy Base Civil Engineer in his capacity as Installation Tribal Liaison Officer. A mailing list of the tribal government recipients of this invitation as well as a sample of the outgoing correspondence and all responses are included in **Appendix A**.

1.5.2 Agency Consultations and Coordination

Implementation of the Proposed Action involves coordination with several organizations and agencies. Compliance with Section 7 of the *Endangered Species Act of 1973*, as amended ([16 USC § 1531](#) et seq.) (ESA), and implementing regulations ([50 CFR Part 402](#)), requires communication with the US Fish and Wildlife Service (USFWS) and/or National Oceanic and Atmospheric Administration National Marine Fisheries Service in cases where a federal action could affect listed threatened or endangered species, species proposed for listing, or candidates for listing. On 1 June 2023, the Air Force initiated Section 7 consultation under the ESA for the Proposed Action using the USFWS's Information for Planning and Consultation (IPaC) tool. Basic information concerning the location and nature of the projects included in the Proposed Action was input into IPaC to obtain an official species list from the USFWS. The list identifies threatened and endangered species and other protected species (e.g., migratory birds) with potential to be affected by the Proposed Action. This information is included in **Appendix A** and incorporated into this PEA where applicable.

EO 11988, [Floodplain Management](#), directs federal agencies to determine whether a proposed action would occur within a floodplain and to avoid or minimize adverse impacts on floodplains. If an agency considers avoiding adverse impacts on a floodplain and determines that no practicable alternative to undertaking the action is feasible, EO 11988 requires minimizing impacts by design or modification. In such cases, agencies must also prepare and circulate a notice to explain how avoidance was not practicable and describe minimization measures. Because the execution of the Proposed Action or Alternatives would unavoidably occur in a floodplain, the Air Force placed an early public notice in the *Wichita Times Record News* on 14 and 15 May 2023 regarding the Proposed Action and its potential to affect floodplains on Sheppard AFB (**Appendix B**). No public comments in response to the early public notice were received.

The Air Force coordinated with the following state government agencies regarding potential effects from the Proposed Action and Alternatives:

- NHPA Section 106 compliance – Texas SHPO. If no historic properties are identified or are present but would not be affected, this PEA would be used to provide a “no historic properties affected” finding to the SHPO and other consulting parties for review.
- Air and water quality – Texas Commission on Environmental Quality (TCEQ) and Wichita County.
- Habitat and species of concern – Texas Parks and Wildlife Department (TPWD).

Finally, notice of the Proposed Action and Alternatives was provided to elected officials that represent the state at the federal and local levels. A sample of agency correspondence and all responses are included in **Appendix A**.

1.6 PUBLIC AND AGENCY REVIEW

The Air Force invites the public and other interested stakeholders to review and comment on this PEA. Accordingly, a Notice of Availability of the Draft PEA and Draft FONSI was published in the *Wichita Falls Times Record News* on 5 and 6 November 2023 to commence a 30-day public comment period.

The public comment period of the Draft PEA and FONSI concludes on 4 December 2023. During the public comment period, the Draft PEA and Draft FONSI were available online for view or download at <https://www.sheppard.af.mil/Library/Key-Documents>. Additionally, printed copies of the Draft PEA and Draft FONSI were available by request and placed at the Wichita Falls Public Library, 600 11th Street, Wichita Falls for review.

1.7 DECISION TO BE MADE

Based on the analysis in this PEA, the Air Force will make one of three decisions regarding the Proposed Action:

1. Choose the Proposed Action and sign a FONSI, allowing implementation of the selected alternative;
2. Initiate preparation of an EIS if it is determined that implementation of the Proposed Action would cause significant impacts to the human and natural environment; or
3. Select the No Action Alternative, whereby the Proposed Action would not be implemented.

As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project and be available to inform decision-makers of the potential environmental impacts.

Finally, this PEA identifies any actions the Air Force will commit to undertake to minimize environmental effects and comply with NEPA should it choose to implement the Proposed Action and proceed with the selected alternative.

1.8 APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS

Other laws and regulations applicable to the proposed action include, but are not limited to:

- *Clean Water Act* (33 USC § 1251 et seq.)
- *Resource Conservation and Recovery Act* (42 USC § 6901 et seq.)
- Section 438 of the *Energy Independence and Security Act* (Public Law 110-140)
- *Comprehensive Environmental Response, Compensation, and Liability Act* (42 USC § 9601 et seq.)
- *Federal Clean Air Act (CAA)* (42 USC § 7401 et seq., as amended)
- *Migratory Bird Treaty Act* (16 USC § 703 et seq.)
- Toxic Substances Control Act (15 USC § 2601 et seq.)
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994)
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (1997), as amended by EO 13296 (2003)
- EO 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All* (2023)

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CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The development projects included as part of the Proposed Action were selected based on current and future needs at Sheppard AFB identified through the installation planning process, including the 2016 IDP and the 2018 and 2022 ADPs for the 80 FTW Campus Planning District and Technical Training Planning District, respectively, as required by Air Force Instruction (AFI) 32-1015, *Integrated Installation Planning*. Each of the proposed projects would support the overall purpose of and need for installation development as outlined in **Section 1.3**.

2.2 PROPOSED ACTION

The Proposed Action would incorporate the planning considerations addressed in Sheppard AFB planning documents. For example, the Proposed Action would adhere to project-specific development standards, including land use constraints for siting the new facilities, and regulate design parameters such as height, scale, and orientation.

This PEA describes the scope, location, and objectives of each project under the Proposed Action, grouped by project type (i.e., construction, demolition, renovation, and infrastructure/utilities construction). **Table 2-1** summarizes projects included under Alternatives 1 and 2, as further described in **Sections 2.4.1** and **2.4.2**, respectively. The proposed locations for projects under Alternatives 1 and 2 are shown in **Figures 2-1** and **2-2**, respectively, followed by a description of the size and extent of the projects in **Tables 2-2** and **2-3**.

**Table 2-1
Summary of Proposed Projects by Project Type for Each Alternative**

Activity	Alternative 1	Alternative 2
Building Construction^a		
Number of projects	4	4
New construction	344,933 ft ²	204,933 ft ²
Demolition amount	-389,835 ft ²	-246,929 ft ²
Renovation	654,266 ft ²	658,192 ft ²
Additions to Buildings		
Number of projects	1	1
Addition amount	1,000 ft ²	1,000 ft ²
Demolition Only		
Number of projects	1	1
Demolition amount	-2,560 ft ²	-2,560 ft ²
Infrastructure/Utilities Construction^b		
Number of projects	11	11
New construction	98,676 lf and 239,924 ft ²	59,177 lf and 239,924 ft ²
Maintenance and repair	15,550 lf, 2,415,934 ft ² , and 105 acres	15,550 lf, 2,415,934 ft ² , and 105 acres
Demolition amount	-141,260 ft ²	N/A

Notes:

a Building construction and demolition totals include square footage for the “Building Addition” and “Demolition Only” projects.

b Infrastructure construction includes non-building construction such as electrical line replacement, runway repair, and drainage installation.

ft² = square feet; lf = linear feet; N/A = not applicable

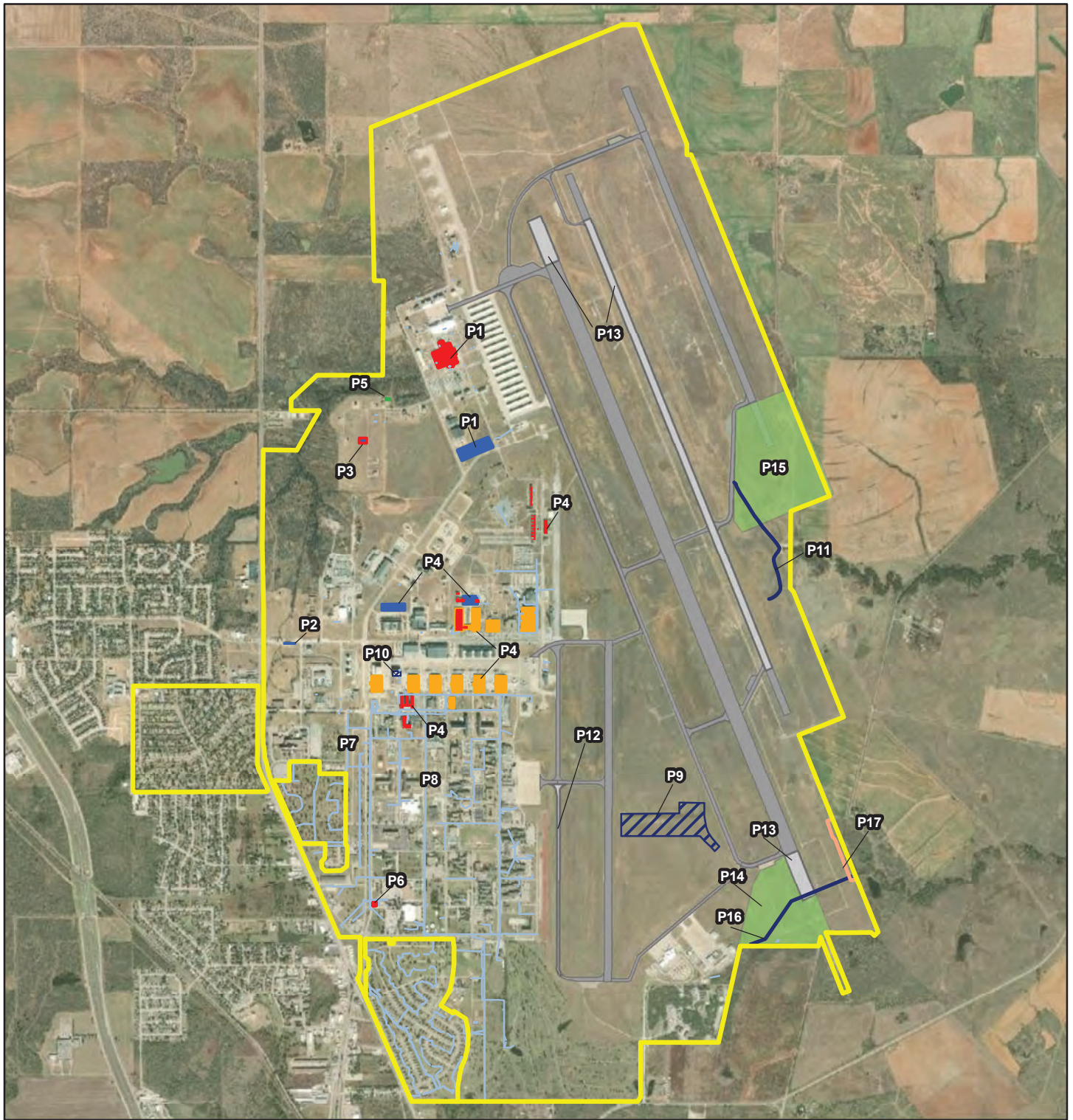
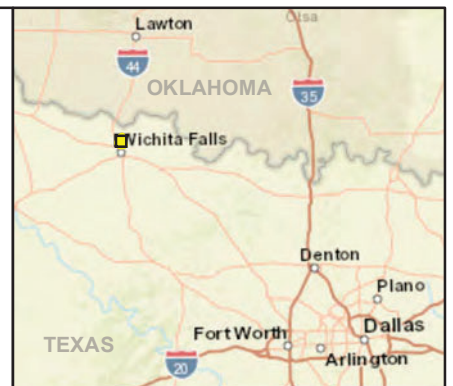


FIGURE 2-1
Project Locations – Alternative 1

- | | | |
|-----------------------|------------------------|--------------|
| Electrical Lines | Drainage Repair Area | Construction |
| Drainage Line | Airfield Pavement | Demolition |
| Fence | Airfield Project Area | Grading Area |
| Installation Boundary | Additions to Buildings | Renovation |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



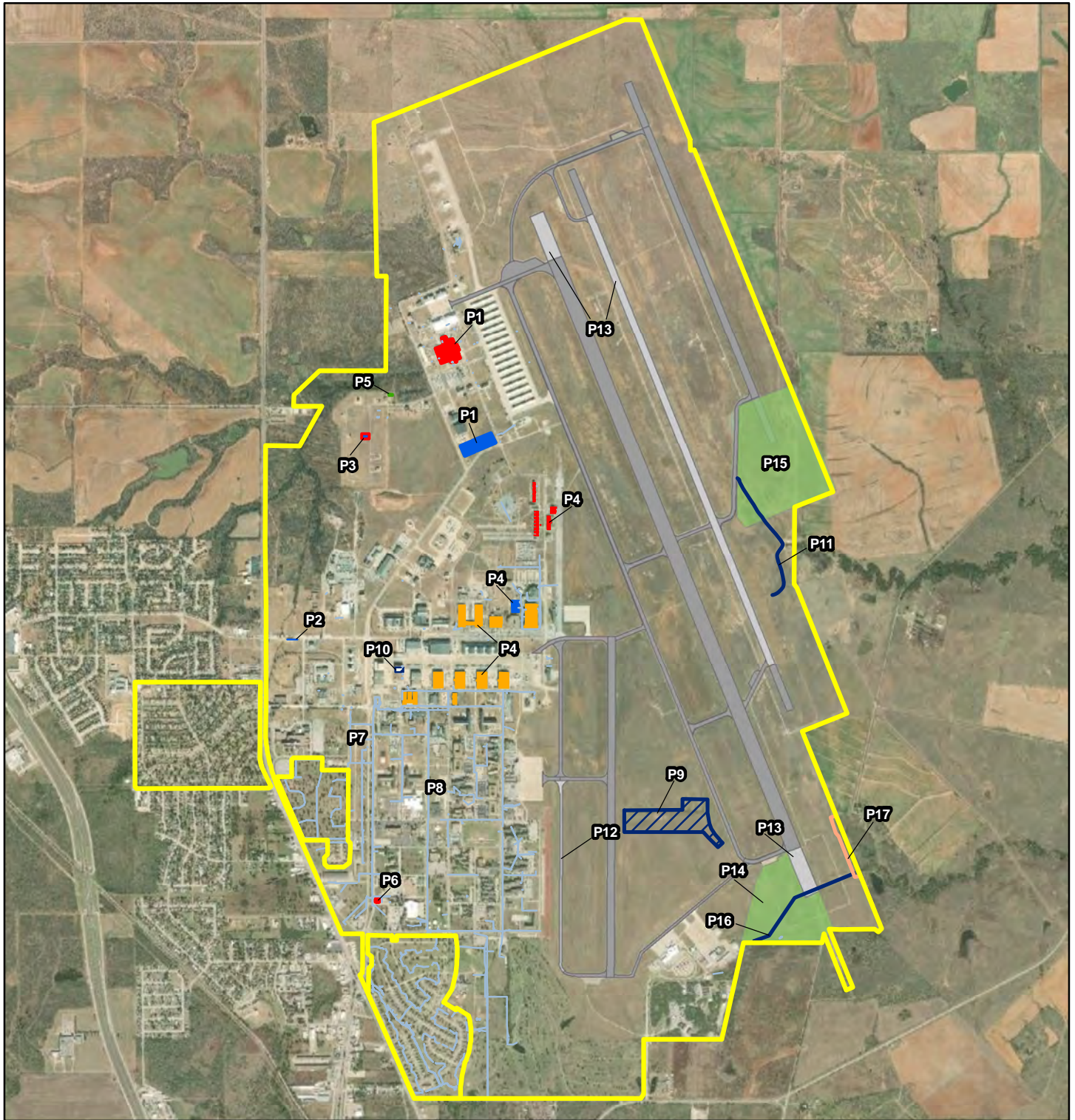
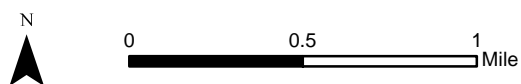
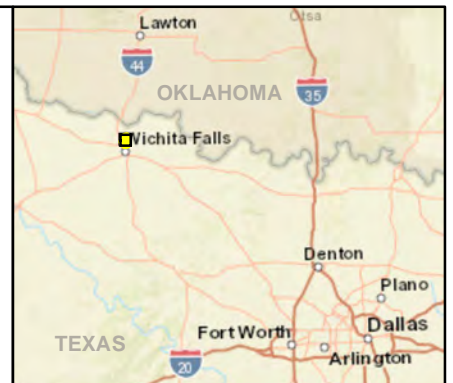


FIGURE 2-2
Project Locations – Alternative 2

- | | | |
|-----------------------|------------------------|--------------|
| Electrical Lines | Drainage Repair Area | Construction |
| Drainage Line | Airfield Pavement | Demolition |
| Fence | Airfield Project Area | Grading Area |
| Installation Boundary | Additions to Buildings | Renovation |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



**Table 2-2
Proposed Development Projects at Sheppard AFB – Alternative 1**

Project Number	Project Title	Planning District	Description	Project Phasing ^{a,b}	Estimated New Facility or Infrastructure Size	Estimated Change in Facility Footprint
Building Construction						
1	ENJJPT Flying Training Complex, Phase Two	80 FTW Campus Planning District	<ul style="list-style-type: none"> • Build FTW HQ (40,000 ft²) and Flying Training Facility (99,491 ft²). • Demolish existing 159,995 ft² HQ Facility. 	Medium	139,491 ft ²	-20,504 ft ²
2	Commercial Vehicle Inspection Facility	Base Support and Industrial District	<ul style="list-style-type: none"> • Construct permanent UFC-compliant (approximately 20,000 ft²) Commercial Vehicle Inspection Facility (new 2,100 ft², 16,242 ft² of new pavement, and 1,658 ft² of pre-existing pavement) • Demolish B-1460 (100 ft²). 	Long	20,000 ft ²	18,242 ft ²
3	Demolish Munitions Storage Facility and Construct New Storage Facility	Base Support and Industrial District	<ul style="list-style-type: none"> • Demolish current Munitions Maintenance/Storage Facility, B-2220, (534 ft²). • Construct new facility (11,100 ft²). 	Medium	11,100 ft ²	10,566 ft ²
4	New Civil Engineering Tech Training Complex	Technical Training District	<ul style="list-style-type: none"> • Renovate B-1921 and east wing of B-1927 (117,532 ft² total). • Construct a 55,000-ft² consolidated Power Pro training facility with lab and classroom space. • Demolish B-1928, B-1929, B-1937, B-2001, B-2012, and B-2014 (74,301 ft² total). • Reconfigure B-1020 (65,626 ft²). • Renovate and build out B-1040 and B-1060 (131,749 ft² total). • Renovate B-960, B-1010, B-1080, and B-1090 (217,287 ft² total). • Construct a 120,000-ft² consolidated facility for 361 TRS. • Renovate B-1900 (122,070 ft²) to consolidate 366 TRS. Demolish B-920 and B-825 and the west wing of B-1927 (152,345 ft² total). 	Long	175,000 ft ²	-51,646 ft ²

Project Number	Project Title	Planning District	Description	Project Phasing ^{a,b}	Estimated New Facility or Infrastructure Size	Estimated Change in Facility Footprint
Additions to Buildings						
5	Add/Alter Military Working Dog (MWD) Certification Training Complex	Base Support and Industrial District	<ul style="list-style-type: none"> Construct a 1,000 ft² addition to existing facility (1,872 ft²) to include veterinary workspace, imprint room, administrative training area for eight people, sleep room and shower for handlers, feed room, isolation kennel, and dog wash station. 	Medium	1,000 ft ²	1,000 ft ²
Demolition Only						
6	Demolish Facility B200 and Consolidate Space	Community Services District	<ul style="list-style-type: none"> Demolish B-200 (2,560 ft²). 	Short	N/A	-2,560 ft ²
Infrastructure/Utilities Construction						
7	Repair Electrical Distribution, Circuits 2 & 3	-	<ul style="list-style-type: none"> Replace 12,141 lf existing primary U/G lines and 2,278 lf existing primary O/H along Moates Ave. and the adjacent housing area serving Circuit 2 with all U/G lines. Replace 12,465 lf existing primary U/G lines installed in 1957 and 11,052 lf existing primary O/H lines installed in 1946 along 1st Ave., 9th Ave., J Ave., and the outdoor recreational area serving Circuit 3 with all U/G lines. 	Medium	37,936 lf	N/A
8	Repair Electrical Infrastructure Components for Circuits 5 & 9	-	<ul style="list-style-type: none"> Replace 2,469 lf existing primary U/G lines and 4,624 lf existing primary O/H along Ave. G and the adjacent Wherry housing area serving Circuit 5 with all U/G lines. Replace 12,424 lf existing primary U/G lines exiting the sub-station and 831 lf existing primary O/H along Ave. D, Ave. E, and Ave. F serving Circuit 9 underground. Replace and provide new street lighting along Ave. G, the adjacent Wherry housing area, Gen. Marquez Blvd. (formerly Ave. D and Ave. E), and Ave. F. Replace lightning protection/grounding system. Replace existing U/G distribution configuration for UFC compliance. Provide energy-smart metering where required. 	Short	20,348 lf + additional elements (i.e., new lighting, lightning/grounding)	N/A
9	Repair Airfield Drainage/Headwall s Phase 3	Flightline District	<ul style="list-style-type: none"> Remove headwalls and enclose and bury 1,600 lf drainage piping starting at Runway 18/36 to Taxiway D. 	Short	1,600 lf	N/A

Project Number	Project Title	Planning District	Description	Project Phasing ^{a,b}	Estimated New Facility or Infrastructure Size	Estimated Change in Facility Footprint
10	Repair Pavement and Drainage under Ground Instructional Trainer Aircraft Shelter	Technical Training District	<ul style="list-style-type: none"> Install a drainage system and repair concrete foundation for the Ground Instructional Trainer Aircraft (GITA) paint shelter, B-11018 (16,516 ft²) to resolve safety hazards, including tripping hazards from the deteriorated concrete and water pooling. 	Medium	700 lf of drainage & 16,516 ft ² of foundation repair	N/A
11	Repair Airfield Drainage of Bear Creek South of Taxiway G	Flightline District	<ul style="list-style-type: none"> Repair 12,800 lf U/G and surface drainage systems on the southeast end of the airfield, including piping, headwalls, and inlets, elevation and line grading, surveying, erosion control and seeding, and outfall modifications. Failed drainage travels east of centerline of Runway 15C/33C. 	Medium	12,800 lf	N/A
12	Demolish Taxiway A South/Replace Signage	Flightline District	<ul style="list-style-type: none"> Demolish the abandoned taxiway (212,180 ft²) reducing it to the width of a vehicle roadway (approximately 18 feet wide and 70,920 ft²) to eliminate the potential for aircrews mistaking the taxiway as active. This action will also eliminate the need for maintaining the mandatory closed pavement markings. 	Short	N/A	-141,260 ft ²
13	Repair Runway 15C/33C & Overruns 15R/33L	Flightline District	<ul style="list-style-type: none"> Make improvements to Runway 15C/33C (1,498,854 ft²) and overruns (total combined area of 300,561 ft²), to include maintenance of the concrete runway end and repair of the asphalt runway center and airfield lighting components. Add 10-ft paved shoulders (total combined shoulder area of 239,924 ft² assuming shoulders extend along overruns as well) to both sides. Provide subsurface drainage (23,992 lf assuming drainage runs along both sides of the runway and overruns). Mill and overlay Overruns 15R/33L (600,003 ft² total) to include repair of any failed subsurface. 	Short	23,992 lf of drainage, 2,399,417 ft ² of repair/maintenance & 239,924 ft ² of added pavement	239,924 ft ²
14	Maintain Airfield Grading, Southwest Runway 15R/33L	Flightline District	<ul style="list-style-type: none"> Grade hill at southwest end of Runway 15C/33C to remedy elevation violations to airfield imaginary surfaces as defined by UFC 3-260-01. 	Short	45 acres	N/A

Project Number	Project Title	Planning District	Description	Project Phasing ^{a,b}	Estimated New Facility or Infrastructure Size	Estimated Change in Facility Footprint
15	Maintain Airfield Grading, Southeast of Runway 15L/33R	Flightline District	<ul style="list-style-type: none"> Reshape channel to reduce velocities and stabilize with engineered liner. Reduce side slopes so that grass can be mowed safely and efficiently. 	Short	60 acres	N/A
16	Replace Storm Drain South of 15R/33L	Flightline District	<ul style="list-style-type: none"> Repair/replace storm drainage pipe and drop inlets on south end of Overruns 15R/33L. 	Short	2,750 lf	N/A
17	Relocate the Perimeter Fence at Outfall 2	Flightline District	<ul style="list-style-type: none"> Move fence line from Outfall 2 on the east side of the airfield approximately 75 ft east-northeast to the Installation boundary, enclosing approximately 97,000 ft² of a tributary stream bed with the fence line in the riparian zone of the tributary. 	Short	1,300 lf	N/A

Notes:

a. Project phasing dependency, timeline for recommended construction start, and priority for completion.

b. Short = 1–3 years; Medium = 4–6 years; Long = 7+ years

B = Building (as in B-2220); ENJJPT = Euro-NATO Joint Jet Pilot Training Program; ft = foot/feet; ft² = square foot/feet; FTW = Flying Training Wing; GITA = Ground Instructional Trainer Area; HQ = headquarters; lf = linear feet; MWD = Military Working Dogs; N/A = not applicable; O/H = overhead; TRS = Training Squadron; TRW = Training Wing; UFC = Unified Facilities Criteria; U/G = underground.

**Table 2-3
Proposed Development Projects at Sheppard AFB – Alternative 2**

Project Number	Project Title	Planning District	Description	Project Phasing ^{a,b}	Estimated Facility or Infrastructure Size	Estimated Change in Facility Footprint
Building Construction						
1	ENJJPT Flying Training Complex, Phase Two	80 FTW Campus Planning District	<ul style="list-style-type: none"> Build FTW HQ (40,000 ft²) and Flying Training Facility (99,491 ft²). Demolish existing 159,995 ft² HQ Facility. 	Medium	139,491 ft ²	-20,504 ft ²
2	Commercial Vehicle Inspection Facility	Base Support and Industrial District	<ul style="list-style-type: none"> Construct permanent UFC-compliant (approximately 20,000 ft²) Commercial Vehicle Inspection Facility (new 2,100 ft², 16,242 ft² of new pavement, and 1,658 ft² of pre-existing pavement) Demolish B-1460 (100 ft²). 	Long	20,000 ft ²	18,242 ft ²
3	Demolish Munitions Storage Facility and Construct New Storage Facility	Base Support and Industrial District	<ul style="list-style-type: none"> Demolish current Munitions Maintenance/Storage Facility, B-2220, (534 ft²). Construct new facility (11,100 ft²). 	Medium	11,100 ft ²	10,566.3 ft ²
4	4 - New Civil Engineering Tech Training Complex	Technical Training District	<ul style="list-style-type: none"> Renovate B-1921 and B-1927 (193,372 ft² total). Construct a 35,000 ft² Power Pro training facility. Demolish B-2001, B-2010, B-2012, and B-2014 (83,741 ft² total). Renovate B-1900 to accommodate 365 TRS (122,070 ft²). Renovate B-920, B-960, B-1040, B-1060, B-1080, and B-1090 (342,750 ft² total). 	Long	35,000 ft ²	-48,741 ft ²
Additions to Buildings						
5	Add/Alter MWD Certification Training Complex	Base Support and Industrial District	<ul style="list-style-type: none"> Construct 1,000 ft² addition to existing facility (1,872 ft²) to include veterinary workspace, imprint room, administrative training area for eight people, sleep room and shower for handlers, feed room, isolation kennel, and dog wash station. 	Medium	1,000 ft ²	1,000 ft ²
Demolition Only						
6	Demolish Facility B200 and Consolidate Space	Community Services District	<ul style="list-style-type: none"> Demolish B-200 (2,560 ft²). 	Short	N/A	-2,560 ft ²

Project Number	Project Title	Planning District	Description	Project Phasing ^{a,b}	Estimated Facility or Infrastructure Size	Estimated Change in Facility Footprint
Infrastructure/Utilities Construction						
7	Repair Electrical Distribution, Circuits 2 & 3	-	<ul style="list-style-type: none"> Replace existing O/H lines with O/H conductors and pad-mounted transformers. 	Medium	13,330 lf	N/A
8	Repair Electrical Infrastructure Components for Circuits 5 & 9	-	<ul style="list-style-type: none"> Replace existing O/H lines with O/H conductors and pad-mounted transformers. 	Short	5,455 lf	N/A -
9	Repair Airfield Drainage/Headwalls Phase 3	Flightline District	<ul style="list-style-type: none"> Remove headwalls and enclose and bury 1,600 lf of drainage piping starting at Runway 18/36 to Taxiway D. 	Short	1,600 lf	N/A
10	Repair Pavement and Drainage under Ground Instructional Trainer Aircraft Shelter	Technical Training District	<ul style="list-style-type: none"> Install a drainage system and repair concrete foundation for the GITA paint shelter, B-11018 (16,516 ft²) to resolve safety hazards including tripping hazards from the deteriorated concrete and water pooling. 	Medium	700 lf of drainage & 16,516 ft ² of foundation repair	N/A
11	Repair Airfield Drainage of Bear Creek South of Taxiway G	Flightline District	<ul style="list-style-type: none"> Repair 12,800 lf of underground and surface drainage systems on the southeast end of the airfield, including piping, headwalls and inlets, elevation and line grading, surveying, erosion control and seeding, and outfall modifications. Failed drainage travels east of centerline of Runway 15C/33C. 	Medium	12,800 lf	N/A
12	Demolish Taxiway A South/Replace Signage	Flightline District	<ul style="list-style-type: none"> Leave the existing abandoned taxiway as is and continue maintaining the mandatory closed pavement markings and correcting any foreign object debris (FOD)-producing hazards. 	Short	N/A	N/A
13	Repair Runway 15C/33C & Overruns 15R/33L	Flightline District	<ul style="list-style-type: none"> Make improvements to Runway 15C/33C (1,498,854 ft²) and overruns (total combined area of 300,561 ft²), to include maintenance of the concrete runway end and repair of the asphalt runway center and airfield lighting components. Add 10-ft paved shoulders (total combined shoulder area of 239,924 ft² assuming shoulders extend along overruns as well) to both sides. Provide subsurface drainage (23,992 lf assuming drainage runs along both sides of the runway and overruns). Mill and overlay Overruns 15R/33L (600,003 ft² total) to include repair of any failed subsurface. 	Short	23,992 lf of drainage, 2,399,418 ft ² of repair/maintenance & 239,924 ft ² of added pavement	239,924 ft ²

Project Number	Project Title	Planning District	Description	Project Phasing ^{a,b}	Estimated Facility or Infrastructure Size	Estimated Change in Facility Footprint
14	Maintain Airfield Grading, Southwest Runway 15R/33L	Flightline District	<ul style="list-style-type: none"> Grade hill at southwest end of Runway 15C/33C to remedy elevation violations to airfield imaginary surfaces as defined by UFC 3-260-01. 	Short	45 acres	N/A
15	Maintain Airfield Grading, Southeast of Runway 15L/33R	Flightline District	<ul style="list-style-type: none"> Reshape channel to reduce velocities and stabilize with engineered liner. Reduce side slopes so that grass can be mowed safely and efficiently. 	Short	60 acres	N/A
16	Replace Storm Drain South of 15R/33L	Flightline District	<ul style="list-style-type: none"> Repair/replace storm drainage pipe and drop inlets on south end of Overruns 15R/33L. 	Short	2,750 lf	N/A
17	Relocate the Perimeter Fence at Outfall 2	Flightline District	<ul style="list-style-type: none"> Move fence line from Outfall 2 on the east side of the airfield approximately 75 ft east-northeast to the Installation boundary, enclosing approximately 97,000 ft² of a tributary stream bed with the fence line in the riparian zone of the tributary. 	Short	1,300 lf	N/A

Notes:

a. Project phasing dependency, timeline for recommended construction start, and priority for completion.

b. Short = 1–3 years; Medium = 4–6 years; Long = 7+ years

B = Building (as in B-2220); ENJJPT = Euro-NATO Joint Jet Pilot Training Program; FOD = foreign object debris; ft = foot/feet; ft² = square foot/feet; FTW = Flying Training Wing; GITA = Ground Instructional Trainer Area; HQ = headquarters; lf = linear feet; MWD = Military Working Dogs; N/A = not applicable; O/H = overhead; TRS = Training Squadron; TRW = Training Wing; UFC = Unified Facilities Criteria; U/G = underground.

2.3 SELECTION STANDARDS FOR ALTERNATIVE SCREENING

In accordance with 32 CFR § 989.8(c), selection standards were developed to establish a means for determining the reasonableness of an alternative and whether an alternative should be carried forward for further analysis in the PEA. Consistent with 32 CFR § 989.8(c), the following selection standards meet the purpose of and need for the Proposed Action and were used to identify reasonable alternatives for analysis in the PEA. The supporting alternatives must:

- Remedy facilities and infrastructure deficiencies in order to adequately support current and future strategic missions.
- Be consistent with land use requirements, force protection, and planning concepts as defined in the 2016 IDP and other Air Force guidance.
- Minimize operational inefficiencies and promote sustainable development.
- Provide and promote quality of life environment on Sheppard AFB.

Based on these selection standards, no other reasonable alternatives were identified beyond those outlined in **Section 2.4**.

2.4 ALTERNATIVES

The NEPA and CEQ regulations mandate the consideration of reasonable alternatives to the Proposed Action. “Reasonable alternatives” are those that could also be utilized to meet the purpose of and need for the Proposed Action. Alternatives were considered for each of the proposed projects. The Air Force uses several guidelines and instructions in determining the best approach for construction, renovation, and demolition. AFI 32-1023, *Designing and Constructing Military Construction Projects*, implements Air Force Policy Directive 32-10, *Installations and Facilities*, and Military Standard 3007F, *Standard Practice for Unified Facilities Criteria and Unified Facilities Guide Specifications*. AFI 32-1023 provides general design criteria and standards and information on design and construction management. This document provides guidance governing Air Force military construction projects. Department of the Air Force Manual 32-1084, *Standard Facility Requirements*, which can be supplemented by Air Force Reserve Command Handbook 32-1001, *Standard Facility Requirements*, provides guidance for determining space allocations for Air Force facilities and may be used to program new facilities or evaluate existing spaces.

The NEPA process is intended to support flexible, informed decision-making; the analysis provided by this PEA and feedback from stakeholders will inform decisions made about whether, when, and how to execute the Proposed Action. Among the alternatives evaluated for each project is a No Action Alternative, which evaluates the potential consequences of not undertaking the Proposed Action and serves to establish a comparative baseline for analysis.

This section presents reasonable and practicable alternatives for projects where multiple, viable courses of action exist. Each alternative is assessed relative to the selection standards (see **Section 2.3**).

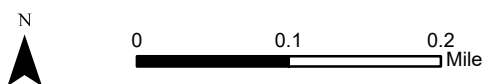
2.4.1 Alternative 1

Under Alternative 1, the Proposed Action would involve building construction, building additions, demolition-only, and infrastructure/utilities construction projects (**Figures 2-3–2-8**). Under Alternative 1, four new construction projects, a single building addition project, and a single demolition-only project would add approximately 344,933 ft² of new building space and demolish approximately 392,395 ft² of building space (see **Table 2-1**). These projects would result in a net change in facility footprint of -47,462 ft². The four construction projects would also include the renovation of approximately 654,266 ft² of pre-existing building space (**Table 2-1**).



FIGURE 2-3
Project 1 Locations – Proposed Action Alternatives

- Construction
- Demolition
- Installation Boundary



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N

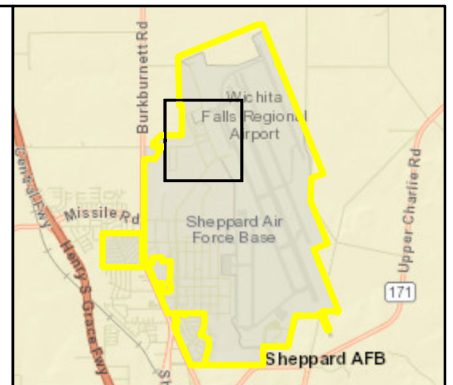
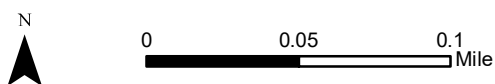


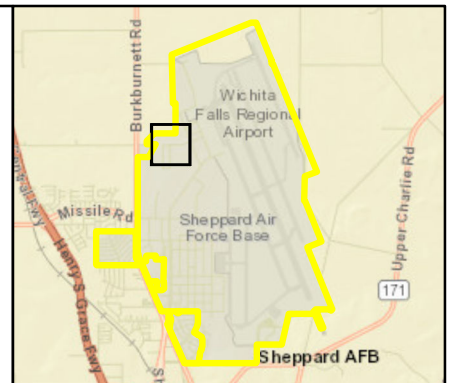


FIGURE 2-4
 Projects 3 and 5 Locations – Proposed Action Alternatives

- Installation Boundary
- Building Addition
- Construction
- Demolition



Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



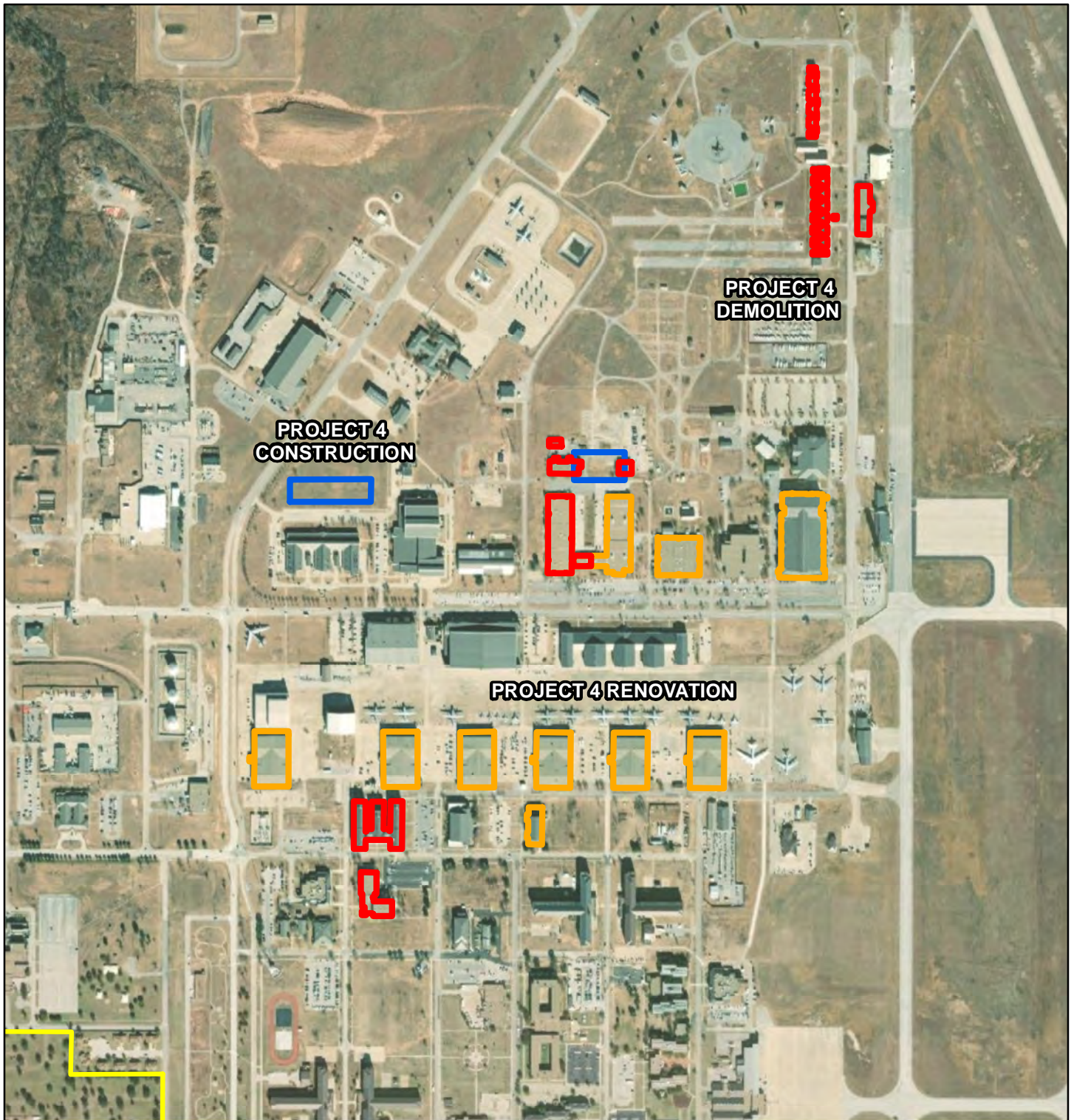
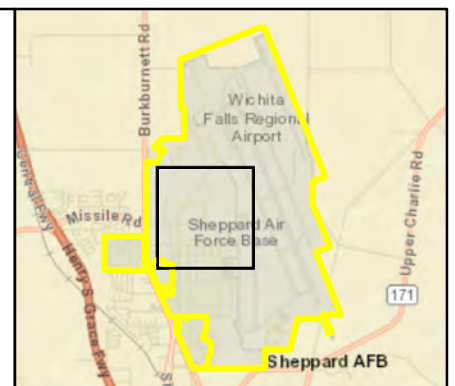


FIGURE 2-5
Project 4 Locations – Alternative 1

- Installation Boundary
- Renovation
- Construction
- Demolition



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



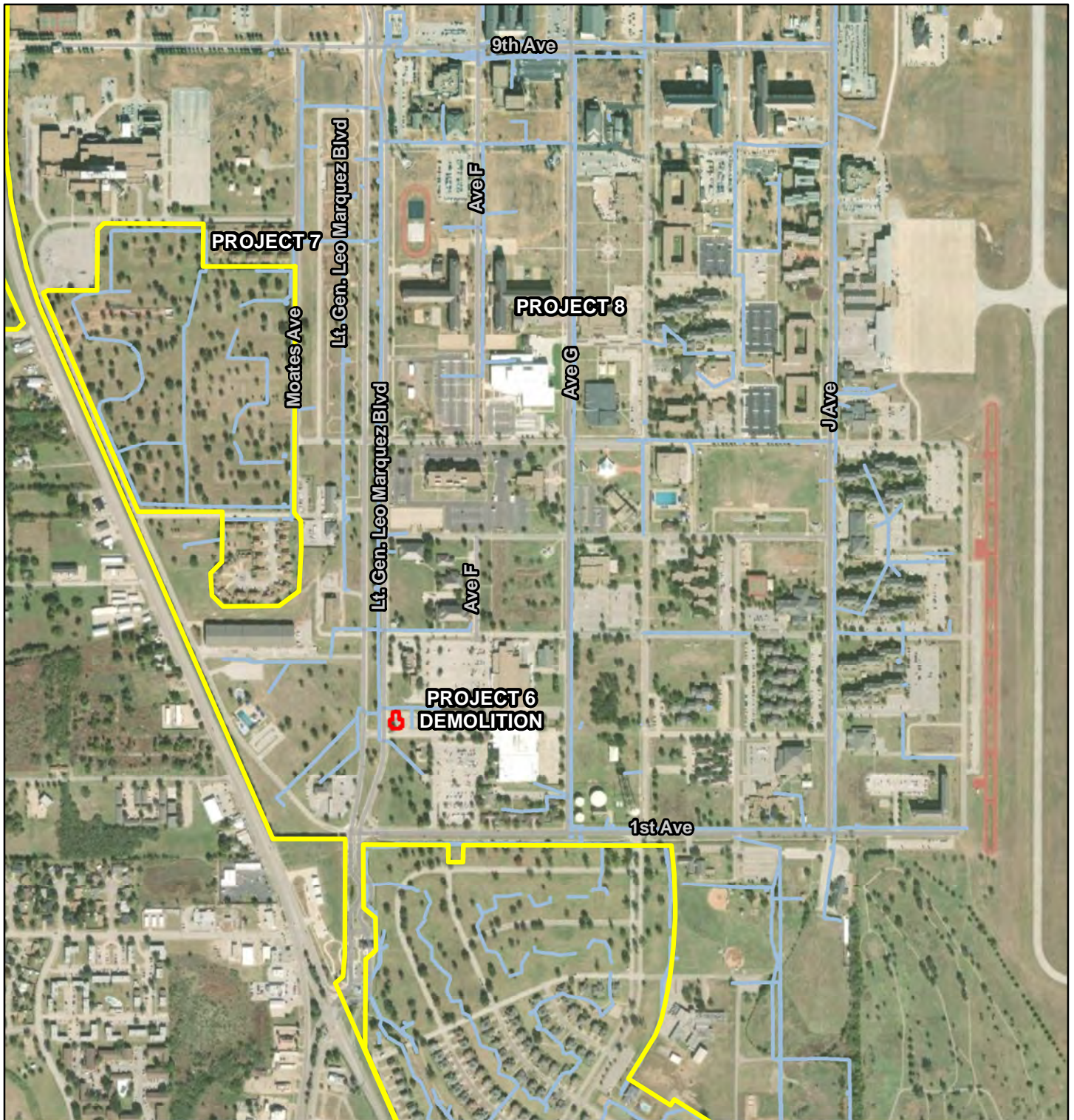


FIGURE 2-6
Projects 6–8 – Proposed Action Alternatives

-  Electrical Lines
-  Installation Boundary
-  Roads
-  Demolition



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N

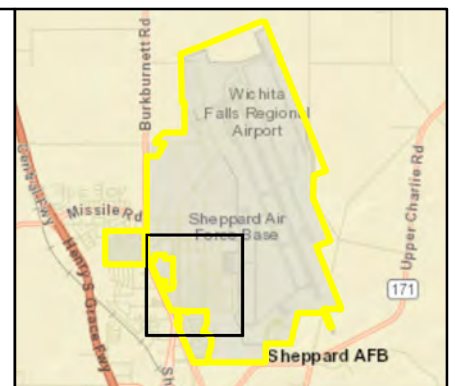



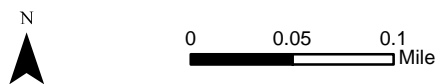


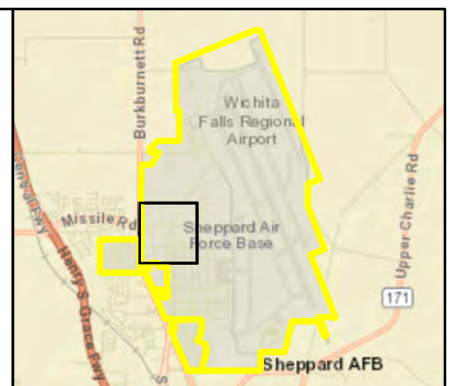


FIGURE 2-7
 Projects 2 and 10 – Proposed Action Alternatives

-  Installation Boundary
-  Drainage Repair Area
-  Construction



Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



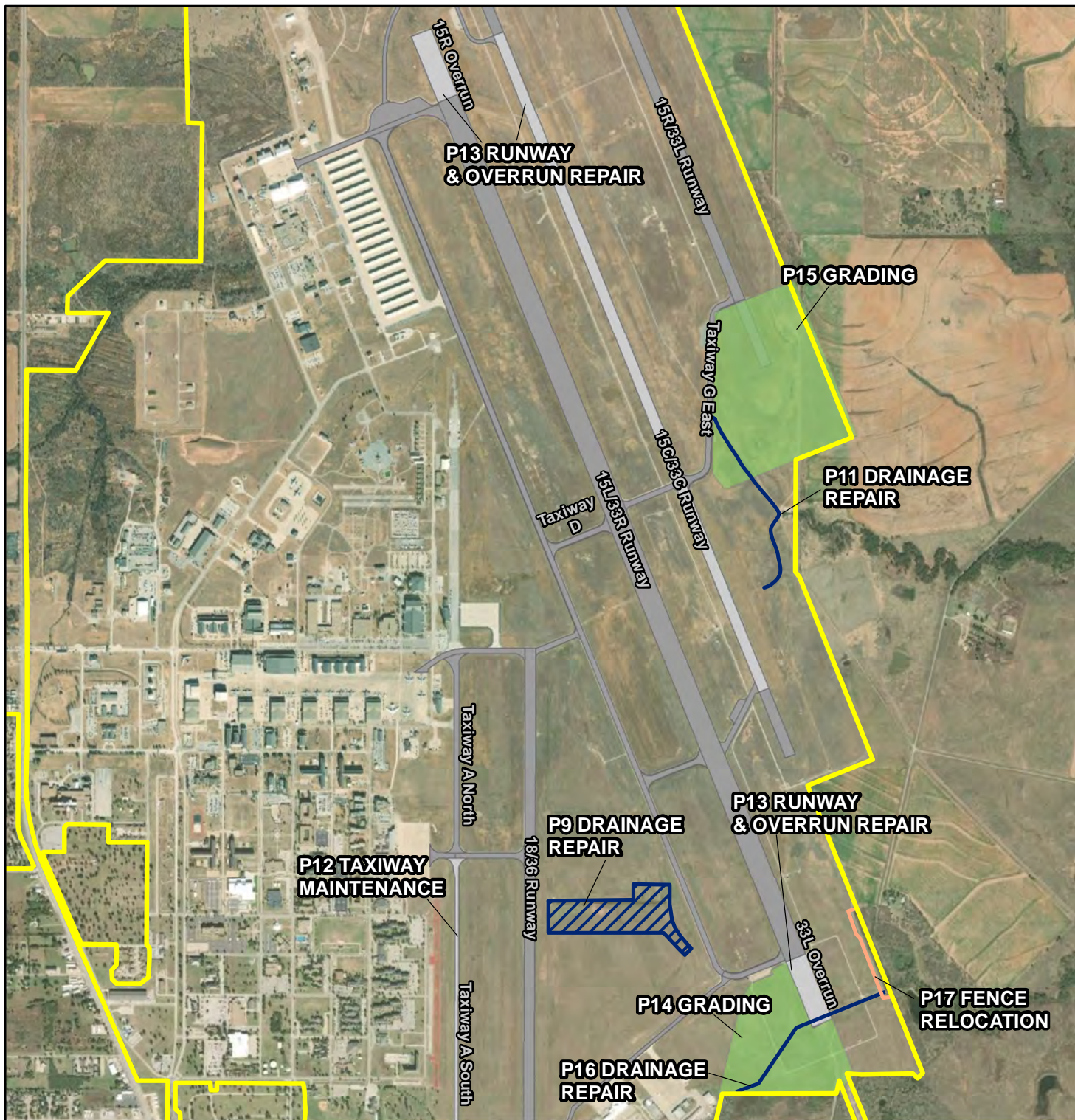







FIGURE 2-8

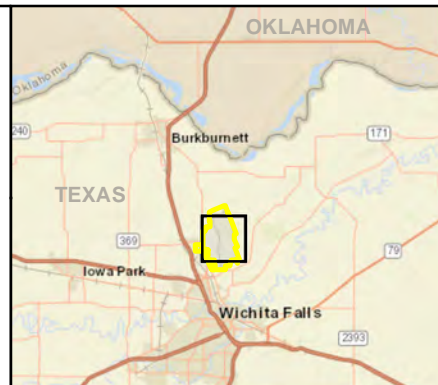
Projects 9 and 11–17 – Proposed Action Alternatives

- | | | | |
|---|-----------------------|---|-----------------------|
|  | Drainage Line |  | Airfield Pavement |
|  | Fence |  | Airfield Project Area |
|  | Installation Boundary |  | Grading Area |
|  | Drainage Repair Area | | |



0 0.25 0.5
Mile

Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



Under Alternative 1, two infrastructure/utilities construction projects would replace approximately 58,284 lf of existing underground and overhead lines with new underground lines. Three infrastructure/utilities construction projects would replace, repair, or install approximately 14,400 lf of drainage system. One infrastructure/utilities project would install approximately 700 lf of drainage system and repair approximately 16,516 ft² of concrete foundation. One infrastructure/utilities construction project would install approximately 23,992.4 lf of drainage, repair/maintain approximately 2,399,418 ft² of airfield pavement, and add approximately 239,924 ft² of airfield pavement. One infrastructure/utilities construction project would demolish approximately 141,260 ft² of airfield pavements. Under Alternative 1, three other infrastructure/utilities construction projects would grade approximately 105 acres of hilly area and relocate approximately 1,300 lf of fencing (see **Table 2-2**).

Overall, projects included under Alternative 1 would result in a net increase of approximately 53,762 ft² of new impervious surface area. All proposed projects would meet the selection standards listed in **Section 2.3** and would remedy facility deficiencies, be consistent with land use requirements, increase operational efficiencies and sustainable development, and improve the quality of life.

2.4.2 Alternative 2

Reasonable alternatives to the projects listed in **Section 2.2** were determined to exist for only Projects 4, 7, 8, and 12 (**Table 2-3**). No other reasonable alternatives meeting the selection standards were identified for other projects. Therefore, the project list under Alternative 2 would remain the same as Alternative 1 with the following exceptions:




- **Project 4** – Buildings 1900, 1921, 1927, 920, 960, 1040, 1060, 1080, and 1090 would be renovated (658,192 ft² total). Buildings 2001, 2010, 2012, and 2014 would be demolished (83,741 ft² total). A new 35,000-ft² Power Pro training facility would be constructed (**Figure 2-9**).
- **Project 7** – No underground lines would be installed or replaced, and approximately 13,330 lf of existing overhead lines would be replaced with overhead conductors and pad-mounted transformers.
- **Project 8** – No underground lines would be installed or replaced, and approximately 5,455 lf of existing overhead lines would be replaced with overhead conductors and pad-mounted transformers.
- **Project 12** – The existing abandoned taxiway would be left as is, the mandatory closed pavement markings would continue to be maintained, and any foreign object debris (FOD)-producing hazards would be corrected.

Under Alternative 2, the Proposed Action would include building construction, building addition, demolition-only, and infrastructure/utilities construction projects (**Figures 2-3–2-9**). Under Alternative 2, four new construction projects, a single building addition project, and a single demolition-only project would add approximately 204,933 ft² of new building space and would demolish approximately 246,929 ft² of building space (see **Table 2-1**). These projects would result in a net change in facility footprint of -41,996 ft². The four construction projects would also include the renovation of approximately 658,192 ft² of pre-existing building space (**Table 2-1**).

Under Alternative 2, two infrastructure/utilities construction projects would replace approximately 18,785 lf of existing overhead lines with overhead conductors and pad-mounted transformers. Three infrastructure/utilities construction projects would replace, repair, or install approximately 14,000 lf of drainage system. One infrastructure/utilities project would install approximately 700 lf of drainage system and repair approximately 16,516 ft² of concrete foundation. Two infrastructure/utilities construction projects would install approximately 23,992.4 lf of drainage, repair/maintain approximately 2,611,598 ft² of airfield pavement, and add approximately 239,924 ft² of airfield pavement. Under Alternative 2, three other infrastructure/utilities construction projects would grade approximately 105 acres of hilly area and relocate approximately 1,300 lf of fencing (see **Table 2-3**).

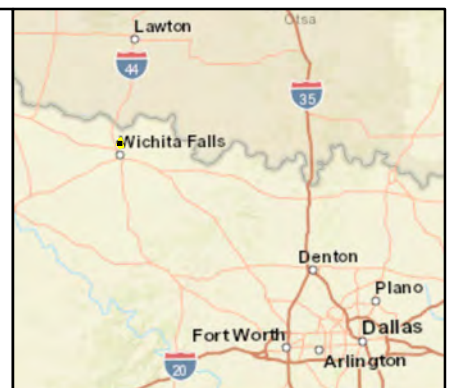


FIGURE 2-9
Project 4 Locations – Alternative 2

-  Construction
-  Demolition
-  Renovation



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



Projects included under Alternative 2 would result in a net increase of approximately 197,928 ft² of new impervious surface area. Under Alternative 2, all proposed projects would meet the selection standards listed in **Section 2.3** and would remedy facility deficiencies, be consistent with land use requirements, increase operational efficiencies and sustainable development, and improve the quality of life.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Additional preliminary alternatives were considered for Projects 4, 7, 8, 12, and 13.

- **Project 4** – One additional alternative was considered that would involve renovating Buildings 1921, 1927, 2001, and 2010 for the 366th Training Squadron (366 TRS); renovating Building 1020 for the 363 TRS and 365 TRS; and renovating Buildings 1900, 920, 960, 1040, 1060, 1080, and 1090. This alternative would not adequately support the current strategic missions or future mission growth requirements and would not adequately address operational inefficiencies. Therefore, it was eliminated from detailed analysis.
- **Project 7** – One additional alternative was considered that would involve replacing existing overhead lines with new overhead lines. However, 40 percent of Circuit 2 and 49 percent of Circuit 3 consist of underground lines, and implementation of this alternative would impede standardizing routing. Also, the overhead portion of Circuit 2 serves as cross-feed for Circuits 1, 5, and 7. The transition would expose risk to the system, and lower reliability from overhead systems would be expected. Therefore, this alternative was eliminated from detailed analysis.
- **Project 8** – One additional alternative was considered that would involve replacing existing overhead lines with new overhead lines. However, 35 percent of Circuit 5 and 95 percent of Circuit 9 consist of underground lines, and implementation of this alternative would impede standardizing routing. Also, the overhead portion of Circuit 5 serves as cross-feed for Circuit 9, and the overhead portion of Circuit 9 serves as cross-feed for Circuits 2, 5, and 7. The transition would expose risk to the system, and lower reliability from overhead systems would be expected. Therefore, this alternative was eliminated from detailed analysis.
- **Project 12** – One additional alternative was considered that would involve demolishing the entire taxiway, thereby eliminating the need to maintain closed pavement markings. This alternative would not only increase vehicle traffic on an active runway but would also require removal of the access roadway attached to the existing taxiway leading to the Crash Damage or Disabled Aircraft Recovery facility. This alternative would not be consistent with force protection and would not adequately address infrastructure deficiencies and was therefore eliminated from detailed analysis.
- **Project 13** – One additional alternative was considered that would make improvements/repairs to Runway 15C/33C, mill and overlay Overruns 15R/33L, and install subsurface drainage to Taxiway L and Taxiway G. This alternative would not provide shoulders to the active runways, which would violate the UFC for paved shoulders. Paved shoulders prevent erosion caused by jet blasts, support an occasional aircraft that wanders off the taxiway, support vehicular traffic, and reduce the maintenance and repair costs of unpaved shoulder areas. This alternative would not adequately address infrastructure deficiencies or operational inefficiencies and was therefore eliminated from detailed analysis.

2.6 ALTERNATIVES RETAINED FOR DETAILED ANALYSIS

Alternatives 1 and 2 are retained for detailed analysis for each of the components of the Proposed Action, as well as the No Action Alternative.

No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects, and Sheppard AFB would continue to operate under current conditions. The facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission

support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

While the No Action Alternative would not satisfy the purpose of and need for the Proposed Action, this alternative is retained to provide a comparative baseline against which to analyze the effects of the Proposed Action, as required under the CEQ regulations ([40 CFR § 1502.14\(c\)](#)).

2.7 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The potential impacts under Alternatives 1 and 2 and the No Action Alternative are summarized in **Table 2-4**. The summary is based on information discussed in detail in **Chapter 3** of this PEA and includes a concise definition of the issues addressed and the potential environmental impacts associated with each alternative.

**Table 2-4
Summary of Environmental Consequences**

Resource Area	Proposed Action		No Action Alternative
	Alternative 1	Alternative 2	
Land Use	There would be no impacts to land use under the Proposed Action Alternatives.		No impacts to land use would occur.
Air Quality	Adverse impacts to air quality under the Proposed Action Alternatives would be short term and negligible due to the negligible increases in steady-state and criteria pollutant emissions.		No impacts to air quality would occur.
Earth Resources	Impacts to earth resources due to soil disturbance during construction under Alternative 1 would be short term, negligible, and adverse. There would be no impacts to geology or topography. Long-term, minor, beneficial impacts would occur due to improved drainage and added erosion controls.	Alternative 2 would be less impactful than Alternative 1, as it would disturb less soil. Impacts under Alternative 2 would be short term and negligible. There would be no impacts to geology or topography. Long-term, minor, beneficial impacts would occur due to improved drainage and added erosion controls.	No impacts to earth resources would occur.
Water Resources	Adverse impacts to water resources under the Proposed Action Alternatives would be short term and minor due to increased risk of erosion and sedimentation during construction. Long-term, minor, adverse impacts to stormwater and ground water would occur due to increased impervious surface area in certain proposed project locations. Long-term, minor, beneficial impacts to floodplains due to removal of impervious surface area within its bounds, as well as long-term benefits due to an improved drainage infrastructure, which would also benefit surface water and water quality.		Long-term, minor, adverse impacts to water resources would occur. Drainage infrastructure would continue to deteriorate, preventing proper drainage which would affect quality of stormwater runoff and prevent the floodplain from functioning as intended.

Resource Area	Proposed Action		No Action Alternative
	Alternative 1	Alternative 2	
Biological Resources	The Proposed Action Alternatives would result in short-term, negligible, adverse impacts to wildlife during construction due to movement and noise. Impacts to vegetation would be short term and negligible due to the lack of established vegetation in proposed project areas. There would be a determination of “not likely to adversely affect” federally listed threatened or endangered species and other protected species. There would be the potential for minor impacts from invasive plant establishment, which would be minimized through the use of Best Management Practices.		No impacts to biological resources would occur.
Cultural Resources	Assessment of effects is contingent upon receipt of historic resource survey data from the Air Force.	Assessment of effects is contingent upon receipt of historic resource survey data from the Air Force.	Assessment of effects is contingent upon receipt of historic resource survey data from the Air Force.
Noise	No significant direct or indirect impacts on noise-sensitive receptors or increases in operational noise levels would occur.		No impacts to noise levels would occur.
Infrastructure (including Transportation and Utilities)	Impacts to infrastructure and utilities would be short term, minor, and adverse due to potential service disruptions during construction activities. These impacts would be managed during project planning. There would be short-term, minor impacts on local transportation due to construction vehicles and related traffic. Long-term, minor, beneficial impacts to utilities and infrastructure would occur due to drainage and electrical systems improvement.	Impacts to infrastructure and utilities would be short term, minor, and adverse due to potential service disruptions during construction activities. These impacts would be managed during project planning. There would be short-term, minor impacts on local transportation due to construction vehicles and related traffic. Long-term, minor, beneficial impacts to utilities and infrastructure would occur due to drainage and electrical systems improvement. However, beneficial impacts to electrical systems would be less than under Alternative 1, as only overhead electrical lines would be replaced, and lines would not be relocated underground for protection against weather.	Long-term, adverse impacts to infrastructure, including transportation and utilities, would occur. The electrical lines would continue to experience more frequent and significant system failures due to underlying component weaknesses, and pavement and drainage infrastructure would continue to deteriorate.
Hazardous Materials and Wastes	Adverse impacts to hazardous materials and wastes under the Proposed Action Alternatives would be minor and short term, with strict adherence to existing management plans and all applicable requirements and regulations.		No impacts to hazardous materials and wastes would occur.
Safety	No significant, adverse impacts to safety would occur. Short-term, negligible-to-minor, adverse impacts on contractor health and safety could occur during proposed construction and demolition projects. Long-term, beneficial impacts to ground safety would occur due to pavement, drainage infrastructure, and structural repairs, and demolition of obsolete facilities.		Long-term, adverse impacts would occur, as the built environment at Sheppard AFB would continue to deteriorate, and safety would continue to be an issue.

Resource Area	Proposed Action		No Action Alternative
	Alternative 1	Alternative 2	
Socioeconomics	The Proposed Action Alternatives would not impact socioeconomics.		No impacts to socioeconomics would occur.
Environmental Justice and Protection of Children	No disproportionate adverse effects to communities with environmental justice concerns or youth populations would occur.		No impacts to environmental justice populations would occur.
Cumulative Impacts	When incremental impacts of the Proposed Action Alternatives are combined with past, present, or reasonably foreseeable environmental trends and planned actions at Sheppard AFB, no significant cumulative effects were identified.		No significant cumulative effects would occur.

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CHAPTER 3 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

This section describes the baseline resource conditions and environmental consequences of the Proposed Action and Alternatives.

The methodology used to analyze potential adverse effects that could result from the Proposed Action or Alternatives is briefly described in **Section 3.1**. Resources considered but dismissed from detailed analysis in this PEA, including a brief justification for their dismissal, are discussed in **Section 3.2**. Resources carried forward for analysis are identified in **Section 3.3**. These resources are further described and analyzed in **Sections 3.4–3.15**.

3.1 FRAMEWORK FOR ANALYSIS

To provide a framework for the analyses in this PEA, the Air Force defined a study area specific to each resource or sub-resource area. Referred to as a Region of Influence (ROI), these areas delineate a boundary where possible effects from the considered alternatives would have a reasonable likelihood to occur. Beyond these ROIs, potential adverse effects on resources would not be anticipated. For the purposes of analysis, potential effects are described as follows:

- **Beneficial** – positive effects that improve or enhance resource conditions
- **Adverse** – negative or harmful results
- **Negligible** – effects likely to occur but at levels not readily observable by evaluation
- **Minor** – observable, measurable, tangible effects qualified as below one or more significance threshold(s)
- **Moderate** – tangible effects that are readily apparent, qualified as below one or more significance threshold(s)
- **Significant** – obvious, observable, verifiable effects qualified as above one or more significance threshold(s); not mitigable to below significance

When relevant to the analyses in this PEA, potential effects are further defined as direct or indirect; short or long term; and temporary, intermittent, or permanent.

To determine the potential for “significant” effects under the Proposed Action, the Air Force defined impact thresholds to support the analyses in this PEA. Based upon the nature of the Proposed Action and the affected environment, both qualitative and quantitative thresholds were used as benchmarks to qualify effects. Further, each resource analysis section (i.e., **Sections 3.4–3.15**) concludes with a cumulative effects analysis that considers the Proposed Action in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB not included in the Proposed Action. **Table 3-1** summarizes past, present, and reasonably foreseeable future actions considered in the cumulative effects evaluation.

3.2 RESOURCES ELIMINATED FROM DETAILED ANALYSIS

CEQ regulations state that federal agencies should “identify and eliminate from detailed study the issues which are not significant, or which have been covered by prior environmental review” ([40 CFR § 1501.9\(f\)\(1\)](#)). Accordingly, the Air Force considered but eliminated from further analysis the following resources:

- **Airspace Management** – Flight operations would not change under the Proposed Action and Alternatives.
- **Coastal Zone Management** – Sheppard AFB is located in north-central Texas and is approximately 430 miles from the nearest coastal zone.

**Table 3-1
Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Approximate Distance from Proposed Action (lf)	Approximated Time of Construction ^a
Level 1 Regional Confinement Facility	Construct a 5,287 ft ² confinement facility utilizing conventional design and construction methods to accommodate a Level I, 12-cell requirement. This project will include fire suppression systems, all utilities, communications, site improvements, cybersecurity of facility-related control systems, and associated support facilities. The adequately sized confinement facility will provide space for pre-trial detainees and post-trial inmates, both male and female, appropriately segregated and secured against escape. The confinement facility will be constructed on the security forces building parking lot to reduce environmental requirements.	1,000–11,500	Unknown
PF Chang's and Communal Area	Construct a modular to-go focused brand name food concept at the corner of Lt Gen Leo Marquez Boulevard and 3rd Avenue with community areas and sidewalks totaling a footprint of approximately 79,000 ft ² . Proposed is currently a grassed area that is adjacent to the Commons (Building 312). This location provides expansion capability for additional restaurants or other venues. It also has high visibility from the main gate and, as such, has quick access for carryout/delivery service.	500–14,000	Unknown
Child Development Center	Construct a new 28,836 ft ² Child Development Center and demolish Building 195 (22,055 ft ²).	1,700–15,000	In progress
Repair Circuits 4 and 11	Repair by replacement. Remove 2,415 lf of existing primary overhead lines along Avenue K serving Circuit 4 and replace with underground lines. Replace 55,454 lf of existing primary underground and 22,000 lf of secondary underground electrical distribution lines serving Circuits 4 and 11. Line replacement to include all associated appurtenances including transformers, switches, street lighting, duct banks, smart meters where needed, and manholes. Reuse existing smart meters. Replace street lighting on Missile Road from Lt Gen Leo Marquez Boulevard to Avenue K and on Avenue K from Missile Road to 17th Avenue. Replace lightning protection and grounding system. Sheppard AFB will disturb approximately 57.11 cubic yards of soil on one Installation Restoration Program site, ST0 12.	1,500–15,000	In progress
Hospital Demolition	Demolish Building 1200 (hospital). It was constructed in 1963 and is 329,520 ft ² in size. No future development is currently planned at this location within the next 5 years.	900–12,200	Unknown
Install Marquee, Missile Gate	Install 56 ft ² concrete slab with electronic marquee sign.	2,300–12,300	Unknown
Sanitary and Storm Sewer Rehabilitation Projects	Repair/replace approximately 14,680 lf of selected 6–15-inch-diameter sanitary sewer line segments on Sheppard AFB. Other sanitary sewer projects included under this action involve rehabilitation work at seven sewage lift stations and repair or replacement of 15 manholes.	100–14,700	2022–2025

Name	Description	Approximate Distance from Proposed Action (lf)	Approximated Time of Construction ^a
Renovate K-9 Training Area	Construct a 70 x 130 x 12–13-foot (nominal) pre-engineered metal building roof canopy inside the fenced training yard using 36-inch-wide PBR roof panels (dark bronze) screw attached with open sides and downspouts supported by 24-inch diameter dilled piers. All exposed steel structures will be painted (color: 504 Bronzestone). Synthetic grass "TURF" and sub-base will be installed within the entire fenced training yard. The existing K9 training yard area is currently 100 percent natural grass turf (pervious surface) and is open to the outdoor weather elements. The grounds will be changed to synthetic grass turf (pervious surface) over a sand/gravel sub-base (pervious subsurface) that will absorb, permeate, and slope to drain. The covered canopy roof will be open to all elements on all four sides with gutters and downspouts to collect and flow into the pervious ground through drainage swales running back to the north into other natural pervious surrounding grounds that drain to the adjacent 100-year flood plain. Two sturdy 8-foot chain link and three strand-top fenced working dog break areas will be added with 5-foot-wide gates and new 5-inch-thick reinforced concrete sidewalks.	5,500–13,500	In progress

Note:

a. Project construction start times are dependent on future funding allocations that are not yet known
ft² = square feet; lf = linear feet

3.3 RESOURCES CARRIED FORWARD FOR DETAILED ANALYSIS

Based on the results of internal and external scoping (see **Section 1.5**), the following resources were carried forward for analysis: land use; air quality; earth, water, biological, and cultural resources; noise; infrastructure (including transportation and utilities); hazardous materials and wastes; safety; socioeconomics; and environmental justice and protection of children.

3.4 LAND USE

3.4.1 Definition of the Resource

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws; however, no nationally recognized convention or uniform terminology has been adopted for describing land use categories. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions.

The ROI for land use is Sheppard AFB.

3.4.2 Existing Conditions

Sheppard AFB occupies approximately 5,297 acres within the municipal boundary of Wichita Falls, located in Wichita County in north-central Texas. The land surrounding the Installation to the north, east, and west is used for agriculture, grazing, and scattered single-family residences with the more densely populated city of Wichita Falls to the south (Sheppard AFB, 2016). Interstate 44 runs north to south through the center of Wichita Falls and to the west of the Installation. State Highway 240 runs north to south along the western boundary of the Installation and through Wichita Falls. The runways on Sheppard AFB are located beside the eastern edge of the Installation, and E. McKinley Street runs along the Installation’s southern boundary. Land use on Sheppard AFB is broadly classified by planning districts; that is, areas that contain common functions and types of operational activities. The 12 planning districts on Sheppard AFB include:

- District 1–80 FTW Campus
- District 2–Base Support/Industrial
- District 3–Technical Training
- District 4–Recreation/Open Space
 - 4A–Recreation West
 - 4B–Recreation South
- District 5–Central AiT Campus
- District 6–Medical
- District 7–Privatized Housing
- District 8–Family Housing
 - 8A–Family Housing West
 - 8B–Family Housing South
- District 9–Permanent Party Housing
- District 10–Community Services
- District 11–Sheppard Training Annex
- District 12–Flightline

The proposed projects would occur in Districts 1, 2, 3, 10, and 12. The functions of each of these districts are outlined in **Section 1.2**.

3.4.3 Environmental Consequences

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

- inconsistency or non-compliance with existing land use plans or policies,
- precluded the viability of existing land use,
- precluded continued use or occupation of an area,
- incompatibility with adjacent land use to the extent that public health or safety is threatened, or
- conflict with planning criteria established to ensure the safety and protection of human life and property.

3.4.3.1 Alternative 1 (Preferred Alternative)

The proposed projects under Alternative 1 would occur entirely within the Installation boundaries. Projects would be implemented within planning districts consistent with their existing purpose and no changes to land use would occur. The four new construction projects, Projects 1, 2, 3, and 4 would occur in areas consistent with existing land use or in open space buffer zones (**Figure 3-1**).

3.4.3.2 Alternative 2

The proposed projects under Alternative 2 would occur entirely within the Installation boundaries (**Figure 3-2**). Projects would be implemented within planning districts consistent with their intended purpose and no changes to land use would occur. Under this alternative, new construction for Project 4 would take place entirely within the administrative zone and would not utilize the open space buffer zone.

3.4.3.3 Cumulative Impacts

None of the reasonably foreseeable projects listed in **Table 3-1** would adversely impact land use at Sheppard AFB, and past and present projects have occurred in areas of compatible land use. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and

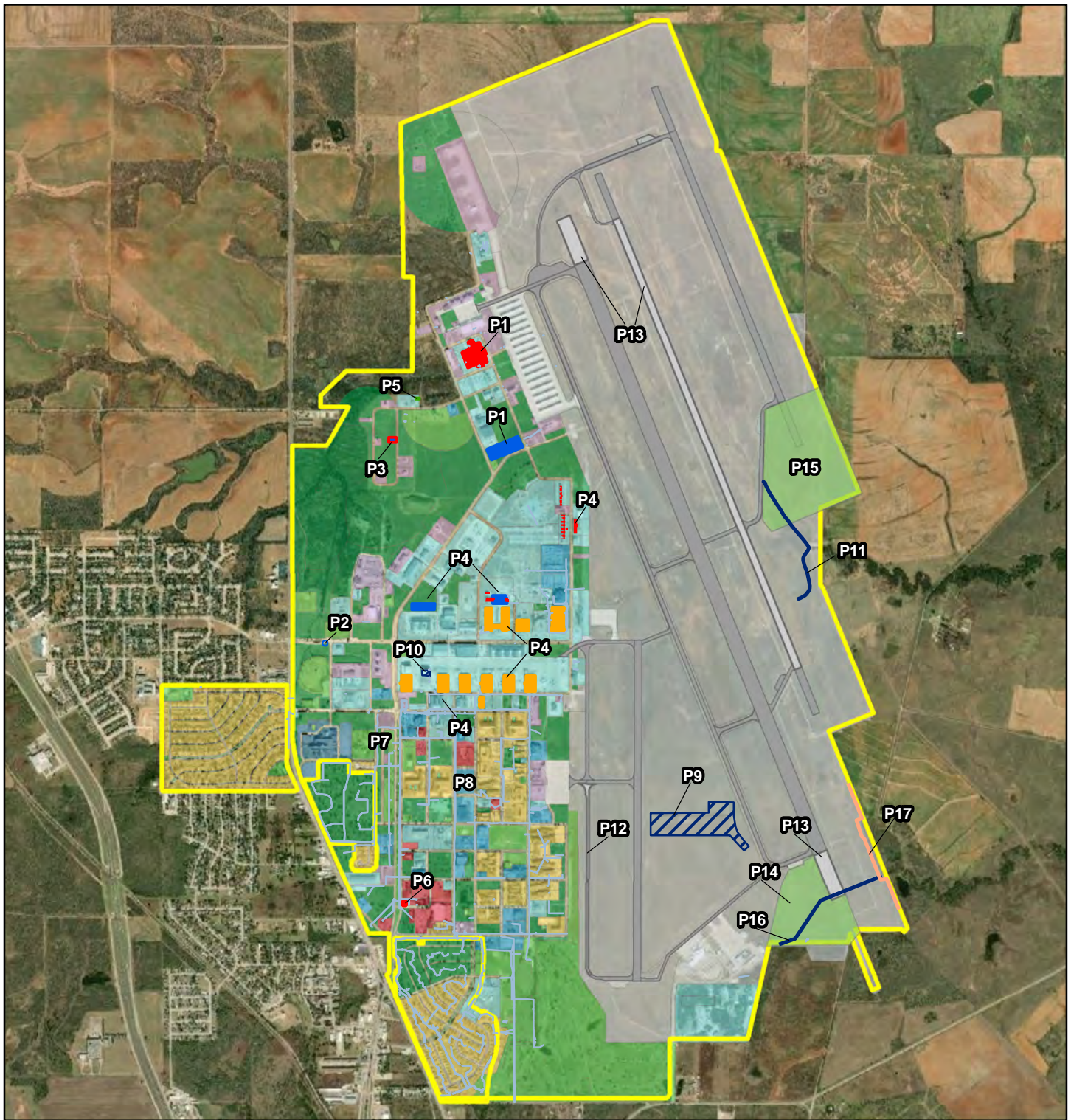


FIGURE 3-1
Land Use – Alternative 1

- | | | |
|------------------------|------------------------------|------------------------|
| Drainage Line | Demolition | Community Service |
| Electrical Lines | Renovation | Grading Area |
| Fence | Administrative | Housing |
| Installation Boundary | Airfield Pavement (Land Use) | Industrial |
| Drainage Repair Area | Airfield Pavement | Medical/Dental |
| Additions to Buildings | Airfield Project Area | Open Space Buffer Zone |
| Construction | Community Commercial | Outdoor Recreation |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



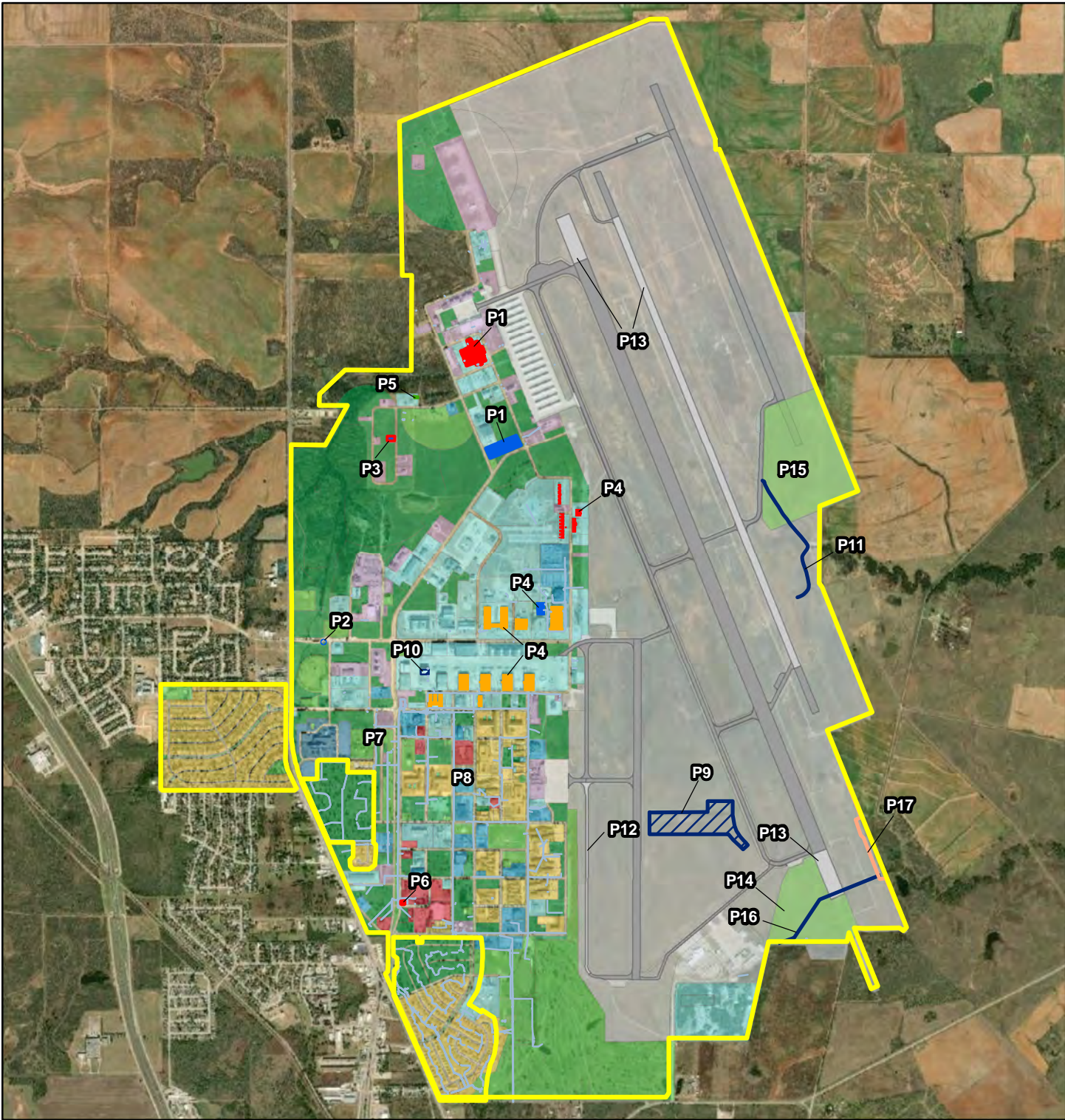
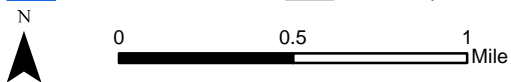


FIGURE 3-2
Land Use – Alternative 2

- | | | |
|------------------------|------------------------------|------------------------|
| Drainage Line | Demolition | Community Service |
| Electrical Line | Renovation | Grading Area |
| Fence | Administrative | Housing |
| Installation Boundary | Airfield Pavement (Land Use) | Industrial |
| Drainage Repair Area | Airfield Pavement | Medical/Dental |
| Additions to Buildings | Airfield Project Area | Open Space Buffer Zone |
| Construction | Community Commercial | Outdoor Recreation |



Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to land use would be anticipated to occur with implementation of the Proposed Action Alternatives.

3.4.3.4 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects and land use on Sheppard AFB would remain unchanged. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.4.3.5 Best Management Practices and Mitigation

No Best Management Practices (BMPs) or project-specific mitigation measures are recommended.

3.5 AIR QUALITY

3.5.1 Definition of the Resource

Air pollution is a threat to human health and damages trees, crops, other plants, waterbodies, and animals. It creates haze or smog that reduces visibility in national parks and cities and interferes with aviation. To improve air quality and reduce air pollution, Congress passed the CAA and its amendments in 1970 and 1990, which set regulatory limits on air pollutants and help to ensure basic health and environmental protection from air pollution.

Sheppard AFB is located in Wichita County within the Abilene-Wichita Falls Interstate Air Quality Control Region (AWFI AQCR) ([40 CFR § 81.132](#)), which serves as the ROI.

3.5.1.1 Criteria Pollutants

In accordance with CAA requirements, the air quality in any given region or area is measured by the concentration of various pollutants in the atmosphere. Measurements of these “criteria pollutants” in ambient air are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

The CAA directed the United States Environmental Protection Agency (USEPA) to develop, implement, and enforce environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, the USEPA developed National Ambient Air Quality Standards (NAAQS). NAAQS are numerical concentration-based standards for pollutants that have been determined to impact human health and the environment. The USEPA also established both primary and secondary NAAQS under the provisions of the CAA. The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration allowable for the protection of vegetation, crops, and other public resources in addition to maintaining visibility standards. NAAQS are currently established for the criteria air pollutants ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter (including coarse particulates equal to or less than 10 microns in diameter [PM_{10}] and fine particulates equal to or less than 2.5 microns in diameter [$\text{PM}_{2.5}$]), and lead. The NAAQS are presented in **Table 3-2**.

Ozone is not usually emitted directly into the air but is formed in the atmosphere by “ozone precursors.” Such ozone precursors consist primarily of nitrogen oxides and volatile organic compounds that are directly emitted from a wide range of emission sources. For this reason, regulatory agencies limit atmospheric ozone concentrations by controlling volatile organic compound pollutants (also identified as reactive organic gases) and nitrogen oxides.

**Table 3-2
National Ambient Air Quality Standards**

Pollutant		Primary/ Secondary ^{a,b}	Averaging Time	Level ^c	Form
Carbon monoxide		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead		Primary and Secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded
Nitrogen dioxide		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and Secondary	1 year	53 ppb	Annual mean
Ozone		Primary and Secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution	PM _{2.5}	Primary	1 year	12.0 µg/m ³	Annual mean, averaged over 3 years
		Secondary	1 year	15.0 µg/m ³	Annual mean, averaged over 3 years
		Primary and Secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	Primary and Secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur dioxide		Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: [USEPA NAAQS table](#)

µg/m³ = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standards; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; ppb = parts per billion; ppm = parts per million; USEPA = US Environmental Protection Agency

Notes:

- a. Primary Standards: the levels of air quality necessary, with an adequate margin of safety to protect public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the USEPA.
- b. Secondary Standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- c. Concentrations are expressed first in units in which they were promulgated.
 - (1) In areas designated nonattainment for the lead standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.
 - (2) The level of the annual nitrogen dioxide standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
 - (3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) ozone standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) ozone standards.
 - (4) The previous sulfur dioxide standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous sulfur dioxide standards or is not meeting the requirements of a state implementation plan call under the previous sulfur dioxide standards (40 CFR § 50.4(3)). A state implementation plan call is a USEPA action requiring a state to resubmit all or part of its state implementation plan to demonstrate attainment of the required NAAQS.

3.5.1.2 General Conformity and Attainment

When a region or area meets NAAQS for a criteria pollutant, that region or area is classified as in "attainment" for that pollutant. When a region or area fails to meet NAAQS for a criteria pollutant, that region or area is classified as "nonattainment" for that pollutant. In cases of nonattainment, the affected state, territory, or local agency must develop a state implementation plan for USEPA review and approval. The state implementation plan is an enforceable plan developed at the state level that lays out a pathway for

how the state will comply with air quality standards. If air quality improves in a region that is classified as nonattainment, and the improvement results in the region meeting the criteria for classification as attainment, then that region is reclassified as a “maintenance” area.

Under the CAA, the General Conformity Rule requires proposed federal agency activities in designated nonattainment or maintenance areas (i.e., attainment areas reclassified from a prior nonattainment designation) to demonstrate conformity with the state implementation plan for attainment of NAAQS. Agencies are required to show that the net change in emissions from a federal proposed action would be below applicable *de minimis* threshold levels.

3.5.1.3 New Source Review

Per the CAA, the USEPA's Prevention of Significant Deterioration (PSD) New Source Review permit program regulates criteria and certain non-criteria air pollutants for air quality control regions designated as unclassified or in attainment status with respect to the federal standards. In such areas, a PSD review is required for new “major source” or “major modification of existing source” emissions that exceed 100 or 250 tons per year (tpy) of a regulated CAA pollutant, dependent on the type of major stationary source. For “minor source” emissions, a PSD review is required if a project increases a “major source” threshold.

3.5.1.4 Greenhouse Gases

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere helps regulate the earth's temperature and contributes to global climate change. GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. The global warming potential of a particular gas provides a relative basis for calculating its carbon dioxide-equivalent (CO₂e) or the amount of CO₂e to the emissions of that gas. Carbon dioxide has a global warming potential of one and is therefore the standard by which all other GHGs are measured. The GHGs are multiplied by their global warming potential, and the resulting values are added together to estimate the total CO₂e.

The USEPA regulates GHG primarily through a permitting program known as the GHG Tailoring Rule. This rule applies to GHG emissions from larger stationary sources. Additionally, the USEPA promulgated a rule for large GHG emission stationary sources, fuel and industrial gas suppliers, and carbon dioxide injection sites if they emit 25,000 metric tons or more of CO₂e per year ([40 CFR § 98.2\(a\)\(2\)](#)).

3.5.1.5 Operating Permits

The State of Texas has adopted the federal NAAQS. Pursuant to Title 30 of the *Texas Administrative Code*, Chapter 116, the TCEQ administers a permit program for stationary source emissions generated at federal facilities. Permitting requirements for federal owners and operators are largely based on a “potential to emit,” defined as the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design or configuration. Calculations are used to determine whether a federal facility is defined as a “major source” under the CAA requiring a Title V operating permit; however, some “non-major” or “minor source” federal owners or operators are subject to permit-by-rule requirements. Permits-by-rule authorize stationary source emissions for individual or specific operations.

3.5.2 Existing Conditions

The AWF IAQCR, in which the ROI is located, is designated “in attainment” for all criteria air pollutants (USEPA, 2023a). Sheppard AFB is defined as a minor source for criteria and hazardous air pollutants and operates under a permit-by-rule as specified in Title 30 *Texas Administrative Code*, Chapter 106.

3.5.2.1 Air Emission Sources at Sheppard AFB

There are several air emissions sources at Sheppard AFB that may contribute to the total emissions reported at the end of each calendar year. The Sheppard AFB Comprehensive Stationary Annual Emissions Inventory lists the following air emission sources:

- Internal combustion sources: emergency generators (diesel fuel) and general-purpose generators (diesel fuel);
- Jet engine testing;
- External combustion sources: sources include, but are not limited to those boilers, heaters, spray booth heaters and bake-off ovens;
- Fuel storage tanks: underground storage tanks and aboveground storage tanks;
- Abrasive blasting;
- Herbicide/Pesticide application;
- Surface and spray coating operations: sources include, but are not limited to, surface and spray coating (paint booth) operations; and
- Miscellaneous chemical usage: sources include, but are not limited to, solvent cleaning equipment.

3.5.2.2 Regional Climate

The regional climate of the Wichita Falls, Texas area is temperate with mild winters, hot summers, and moderate precipitation. The average July temperature is 84.7 degrees Fahrenheit (°F). Average temperatures in spring and fall are 62.8°F (April) and 64.6°F (October), respectively. Winter temperatures tend to be mild; January is the coolest month of the year, with an average daily temperature of 42.4°F. Daily minimum temperatures throughout the year range from 72.2°F (July) to 30.0°F (January) (National Centers for Environmental Information, 2023). On an annual basis, the Wichita Falls area has an average growing season of 211 days (City of Wichita Falls, 2012).

The median annual precipitation at Sheppard AFB, as measured at the Wichita Falls Municipal Airport, is approximately 28 inches with the wettest months being May, June, September, and October with an annual average of 3.81, 3.35, 2.99 and 2.88 inches, respectively. Average snowfall for Sheppard AFB is approximately 3.1 inches annually (National Centers for Environmental Information, 2023).

3.5.3 Environmental Consequences

3.5.3.1 Evaluation Criteria

The environmental impact methodology for air quality impacts presented in this PEA is derived from Air Force Manual (AFMAN) 32-7002, *Environmental Compliance and Pollution Prevention* (February 2020). The Proposed Action is broken down into basic units. For example, a basic development project that consists of replacing a building with a new building could be broken down into demolition (ft²), grading (ft²), building construction (ft² and height), architectural coatings (ft²), and paving (ft²). These data are then input into the Air Force's Air Conformity Applicability Model (ACAM), which models emissions based on the inputs and estimates air emissions for each specific criteria and precursor pollutant, as defined in the NAAQS. The calculated emissions are then compared against the applicable threshold based on the attainment status of the ROI. If the annual net increase in emissions from the project are below the applicable thresholds, then the Proposed Action and Alternatives are not considered significant and would not be subject to any further conformity determination. Assumptions of the model, methods, and detailed summary results are provided in **Appendix C** of this PEA.

The ROI is in attainment for all NAAQS; therefore, the PSD value is used as a threshold for all other criteria pollutants other than lead. Due to the toxicity of lead, the use of the PSD threshold as an indicator of potential air quality impact insignificance is not protective of human health or the environment. Therefore, the *de minimis* value is used instead. A PSD value is not used for carbon dioxide-equivalent; however, it is

still listed within the ACAM model to show that it is below the GHG Tailoring Rule of 25,000 metric tons per year. The following thresholds are applicable for the Proposed Action and Alternatives:

- 250 tpy PSD value for ozone precursors (volatile organic compounds and nitrogen oxides), carbon monoxide, sulfur dioxide, PM₁₀, PM_{2.5} precursor ammonia.
- 25 tpy *de minimis* value for lead.

Assumptions

ACAM modeling for the Proposed Action and Alternatives assumes an estimated area that would be involved in construction, demolition, and renovation project activities. The areas of paving and demolition actions were estimated based on the square footage of the existing and proposed structures. For construction and grading actions, the estimated areas are assumed to be greater than the existing structures to allow for construction area accessibility, utilities improvements, and laydown storage.

Schedule

For the purpose of the ACAM model, the demolition, grading, paving, and construction activities have been spread out over three phases: short-range (one-to-three years), medium-range (four-to-six years), and long-range (seven-to-nine years). Project phasing is the timeline for recommended construction start and completion. For the ACAM model, the short-range projects are listed to occur from 2024 to 2026, the medium-range projects from 2027 to 2029, and the long-range projects from 2030 to 2032.

3.5.3.2 Alternative 1 (Preferred Alternative)

Table 3-3 summarizes the results of the ACAM analysis annualized over the course of implementation of Alternative 1. The ACAM emissions for the various pollutants were higher at different years and phases of the project.

**Table 3-3
Air Emissions and Annual PSD Thresholds, AWF IAQCR – Alternative 1**

Pollutant	Short Range (1–3 years)			Medium Range (4–6 years)			Long Range (7–9 years)		
	2024	2025	2026	2027	2028	2029	2030	2031	2032
Volatile organic compound	0.388	0.277	0.277	0.915	0.926	0.937	3.209	3.200	3.190
Nitrogen oxides	2.111	1.441	1.438	1.571	1.768	1.966	1.825	1.655	1.485
Carbon monoxide	2.640	2.088	2.084	2.186	2.352	2.518	2.311	2.168	2.026
Sulfur oxides	0.006	0.005	0.005	0.006	0.007	0.009	0.007	0.006	0.005
PM ₁₀	7.594	7.564	7.564	4.161	4.176	4.192	2.691	2.679	2.666
PM _{2.5}	0.089	0.060	0.060	0.063	0.078	0.093	0.077	0.064	0.052
Lead	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ammonia	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.004	0.004
Carbon dioxide-equivalent	623.1	448.3	443.6	720.9	958.6	1196.3	995.1	790.2	585.4

PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter

Table 3-4 summarizes the highest annual ACAM emissions for each pollutant compared to their respective thresholds for Alternative 1.

**Table 3-4
Air Emissions and Annual PSD Thresholds, AWF IAQCR – Alternative 1**

Pollutant	Highest Annual Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (yes or no)
Volatile organic compound	3.209	250	No
Nitrogen oxides	2.111	250	No
Carbon monoxide	2.640	250	No
Sulfur oxides	0.009	250	No
PM ₁₀	7.594	250	No
PM _{2.5}	0.093	250	No
Lead	0.000	25	No
Ammonia	0.004	250	No
Carbon dioxide-equivalent	1196.3	N/A	N/A

N/A = not applicable; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter

Table 3-5 represents “steady-state” emissions, which measure the net annual increase in emissions that would be expected to continue in perpetuity after the construction phase is completed. The only steady-state emissions that would occur under Alternative 1 would be associated with heating the newly constructed buildings or the additions to existing buildings. As seen in **Table 3-5**, these steady-state emissions increases would be considered minor.

**Table 3-5
Steady-State Air Emissions and Annual PSD Thresholds, AWF IAQCR – Alternative 1**

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (yes or no)
Volatile organic compound	0.004	250	No
Nitrogen oxides	0.070	250	No
Carbon monoxide	0.059	250	No
Sulfur oxides	0.000	250	No
PM ₁₀	0.005	250	No
PM _{2.5}	0.005	250	No
Lead	0.000	25	No
Ammonia	0.000	250	No
Carbon dioxide-equivalent	84.8	N/A	N/A

N/A = not applicable; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter

For all criteria pollutants, the increase in emissions would be negligible in comparison to the applicable threshold. The annual net increase in steady-state emissions would occur because of a negligible increase in heating square footage and would be negligible in comparison to the applicable threshold. In short, the cumulative emissions would result in negligible, short-term, adverse impacts.

3.5.3.3 Alternative 2

Table 3-6 summarizes the results of the ACAM analysis for Alternative 2.

Table 3-6
Air Emissions and Annual PSD Thresholds, AWF IAQCR – Alternative 2

Pollutant	Short Range (1–3 years)			Medium Range (4–6 years)			Long Range (7–9 years)		
	2024	2025	2026	2027	2028	2029	2030	2031	2032
Volatile organic compound	0.388	0.277	0.277	0.915	0.926	0.937	2.935	2.925	2.915
Nitrogen oxides	2.111	1.441	1.438	1.571	1.768	1.966	1.795	1.613	1.431
Carbon monoxide	2.640	2.088	2.084	2.186	2.352	2.518	2.289	2.136	1.983
Sulfur oxides	0.006	0.005	0.005	0.006	0.007	0.009	0.007	0.006	0.005
PM ₁₀	5.893	5.863	5.863	3.535	3.550	3.565	1.489	1.475	1.461
PM _{2.5}	0.089	0.060	0.060	0.063	0.078	0.093	0.076	0.062	0.048
Lead	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ammonia	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.004	0.004
Carbon dioxide-equivalent	623.1	448.3	443.6	720.9	958.6	1196.3	970.7	751.4	532.1

PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter

Table 3-7 summarizes the highest annual ACAM emissions for each pollutant compared to their respective thresholds for Alternative 2.

Table 3-7
Air Emissions and Annual PSD Thresholds, AWF IAQCR – Alternative 2

Pollutant	Highest Annual Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (yes or no)
Volatile organic compound	2.935	250	No
Nitrogen oxides	2.111	250	No
Carbon monoxide	2.640	250	No
Sulfur oxides	0.009	250	No
PM ₁₀	5.893	250	No
PM _{2.5}	0.093	250	No
Lead	0.000	25	No
Ammonia	0.004	250	No
Carbon dioxide-equivalent	1196.3	N/A	N/A

N/A = not applicable; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter

Table 3-8 represents steady-state emissions for Alternative 2. The only steady-state emissions that would occur under Alternative 2 would be associated with heating the newly constructed buildings or the additions to existing buildings. As seen in **Table 3-8**, these steady-state emissions increases would be considered minor.

Under Alternative 2, more renovation projects and fewer new construction projects would result in impacts to air quality that are slightly less than those under Alternative 1. Air quality impacts under Alternative 2 would be negligible.

**Table 3-8
Steady-State Air Emissions and Annual PSD Thresholds, AWF IAQCR – Alternative 2**

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (yes or no)
Volatile organic compound	0.002	250	No
Nitrogen oxides	0.034	250	No
Carbon monoxide	0.029	250	No
Sulfur oxides	0.000	250	No
PM ₁₀	0.003	250	No
PM _{2.5}	0.003	250	No
Lead	0.000	25	No
Ammonia	0.000	250	No
Carbon dioxide-equivalent	41.3	N/A	N/A

N/A = not applicable; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter

3.5.3.4 Cumulative Impacts

Existing ACAM analysis of other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and the surrounding environs indicates that Wichita County would remain in attainment for criteria pollutants. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to air quality would be anticipated to occur with implementation of the Proposed Action Alternatives.

3.5.3.5 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects. There would be no changes to air quality beyond baseline conditions. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.5.3.6 Best Management Practices and Mitigation Measures

No BMPs or project-specific mitigation measures are recommended

3.6 EARTH RESOURCES

3.6.1 Definition of the Resource

Geological resources include geology, topography, and soils, the characteristics of which help determine whether land is suitable for development. Geology refers to the structure and configuration of surface and subsurface features. Characteristics of geology include the physical features of the land, subsurface rock types, and structural elements. Over long periods of time, geological processes determine topography: the shape, height, and position of the land surface. Soil refers to the unconsolidated materials overlying bedrock or other parent material. Soils are defined by their composition, slope, and physical characteristics. Attributes of soil, such as elasticity, load-bearing capacity, shrink-swell potential, and erodibility, determine its suitability to support a particular land use, including development.

The ROI for geological resources is Sheppard AFB.

3.6.2 Existing Conditions

3.6.2.1 Geology and Topography

Sheppard AFB is located in northern Texas in an area called the Rolling Red Plains of Texas, which is part of the Central Lowlands physiographic province. While the area consists of smooth rounded hills with wide shallow valleys, the Installation is in the Rolling Red Plains of Texas, which is largely flat. The geologic strata or layers of sedimentary rock underlying Sheppard AFB are products of ancient fluvial (river and stream) deposition and erosion. The uppermost strata of bedrock associated with the Installation and surrounding area range from 10 to 30 feet below ground surface across the Installation, and are primarily made up of mudstone with shale, siltstone, and sandstone. Sheppard AFB lies within the outcrop area of a sandstone unit ranging in thickness from 3 to 25 feet that is characterized by layers of sands, silts, and clays (Sheppard AFB 2017a, 2022b).

3.6.2.2 Soils

Sheppard AFB is located on a broad east-to-west soil belt known as the Kamay-Bluegrove-Deandale Association. This association is made up of loamy soils that were formed in red-bed clay, shale, or sandstone, or old clay, silt, sand, or gravel that was left behind by running water. The association is approximately 32 percent Kamay soils, 12 percent Bluegrove soils, 10 percent Deandale soils, and 46 percent other less extensive soils. Of these types, 13 different classes of soil can be found on the Installation (Table 3-9).

**Table 3-9
Soil Types Associated with the Proposed Action**

Symbol	Name	Acres in ROI	Percent of ROI	Drainage Class	Runoff Class
Aw	Wheatwood and Port soils, frequently flooded	99.2	2.1	Well drained	Negligible
BeB	Bluegrove loam, 1 to 3 percent slopes	134.0	2.9	Well drained	Medium
BuB	Bluegrove-Urban land complex, 1 to 3 percent slopes	316.8	6.9	Well drained	Medium
DaA	Deandale silt loam, 0 to 1 percent slopes	178.4	3.9	Moderately well drained	High
DaB	Deandale silt loam, 1 to 3 percent slopes	298.1	6.5	Moderately well drained	Very high
DbA	Deandale silt loam, loamy substratum, 0 to 1 percent slopes	46.0	1.0	Moderately well drained	High
FrB	Frankirk loam, 1 to 3 percent slopes	125.8	2.7	Well drained	Medium
KaB	Kamay silt loam, 1 to 3 percent slopes	840.0	18.2	Well drained	Very high
KcB	Kamay-Urban land complex, 0 to 3 percent slopes	495.1	10.7	Well drained	Very high
ObC	Jolly fine sandy loam, 1 to 5 percent slopes	119.3	2.6	Well drained	Low
Ua	Urban land	1,935.9	41.9	Not specified	Not specified
VcB	Vernon clay loam, 1 to 3 percent slopes	22.0	0.5	Well drained	Very high
VcC	Vernon clay loam, 3 to 5 percent slopes	0.3	0.0	Well drained	Very high

Source: United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS), 2022a

These include silt loam, sandy loam, and clay loam. The natural topsoil on Sheppard AFB is generally described as a thin layer of sandy loam situated on top of red clay and is highly susceptible to wind and water erosion (Sheppard AFB, 2022b; USDA NRCS, 2022a).

3.6.2.3 Prime Farmland

Prime farmland is protected under the *Farmland Protection Policy Act of 1981* and is defined as land other than urban or built-up land or water areas that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. Prime farmland is not present in the ROI and is not discussed further.

3.6.3 Environmental Consequences

Potential adverse impact(s) on earth resources would include:

- substantial alteration of unique, valued, or beneficial geologic or topographic conditions;
- substantial soil loss or erosion off site;
- measurable loss or degradation of a valued or beneficial soil function; and
- disturbance of soils with contaminant(s) above regulatory threshold(s).

3.6.3.1 Alternative 1 (Preferred Alternative)

Geology

The underlying geology of Sheppard AFB would not change under Alternative 1. No direct or indirect impacts to geology would occur with implementation of this alternative.

Topography

None of the projects under Alternative 1 would require large-scale alteration of topography to accommodate construction. Any alteration of ground surfaces would be limited to basic earthwork such as compacting and excavating to prepare the ground for the siting of a structure. After placing and compacting reuse or fill soils, superficial soils would be graded to match the local topography to maintain efficient drainage. Alternative 1 would have negligible, short-term, adverse impacts to topography.

Soils

Implementation of Alternative 1 would involve earthwork to include excavation, grading, backfilling, and compacting of soils or fill materials on and immediately adjacent to the project sites (**Figure 3-3**). Dependent on the scope and design of the individual projects, excavated soils and fill materials would require temporary storage on site and/or transport to or from Sheppard AFB for use or disposal. These activities would expose soils and increase their susceptibility to water and wind erosion. Inclement weather (i.e., rain or wind) could increase the probability and severity of any potential impacts on soils. Where excavation and backfill are required, soil structure, composition, and function could be altered. Further, operating heavy vehicles and equipment to remove, place, or stabilize infrastructure could result in soil compaction. In a compacted state, normal soil function may be altered (e.g., water storage, infiltration, or filtration).

All soils associated with the Proposed Action are previously disturbed, and all project sites under the Proposed Action are generally suitable for development; however, the Air Force would validate soil conditions at each site prior to construction to address any limiting factors by management or design. Additionally, construction phasing under the Proposed Action would minimize the severity of potential adverse effects on soils.

Alternative 1 would disturb approximately 1,115,952 ft² of soil and would result in a net increase of 53,762 ft² of impervious surface area, which is a 0.1 percent increase in impervious surfaces present on the Installation. Under Alternative 1, potential adverse effects on soils, including soil loss, contamination, and structural alteration, would be managed at an individual project level. When projects would disturb one or more acres of soil, the construction contractor would obtain and comply with a Construction General Permit

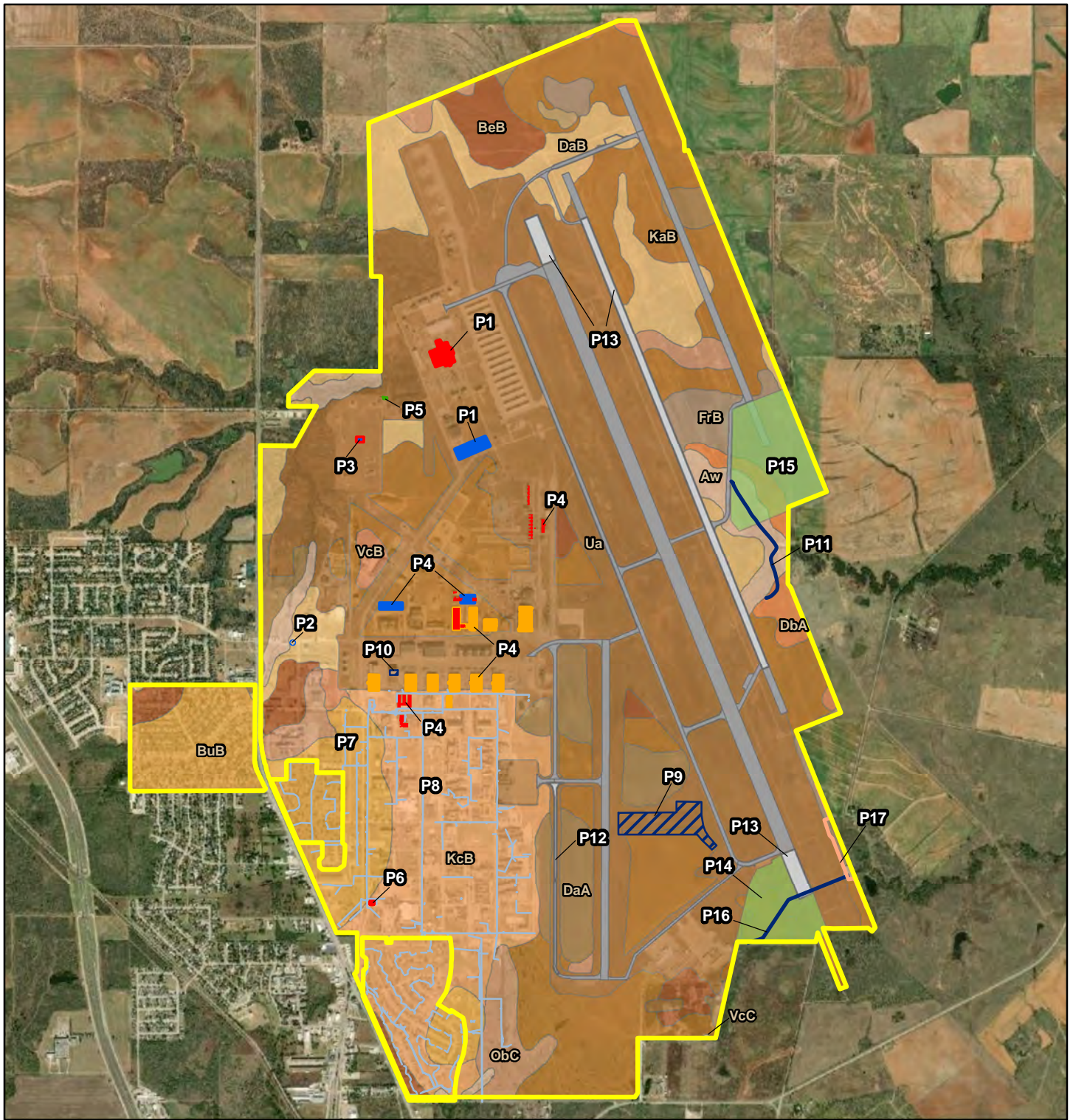
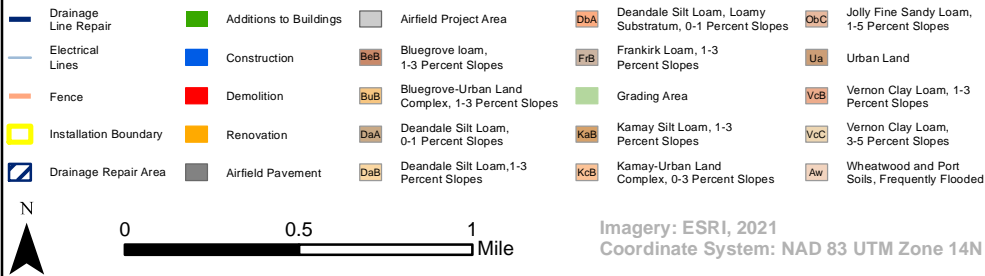


FIGURE 3-3
Soil Types – Alternative 1



(CGP) under the TCEQ-administered Texas Pollutant Discharge Elimination System (TPDES) program. The CGP would require the preparation, approval, and implementation of a site-specific Stormwater Pollution Prevention Plan (SWP3) prior to construction, including appropriate structural and non-structural erosion, sediment, and waste control BMPs. Additional measures may include planning and operational considerations such as staging construction equipment and materials on existing gravel or paved surfaces or minimizing or restricting vehicle movements to select areas on Sheppard AFB.

Once reuse or fill soils are placed and compacted, the construction contractor would grade surface soils to conform to local topography and achieve positive surface drainage. Construction activities would conclude with revegetation of the landscape using native plants and trees, as appropriate. Per TPWD recommendations, erosion control blankets or mats would not be used during post-construction soil stabilization due to the entanglement hazard they present to wildlife (**Appendix A**). The Air Force would also conduct post-construction site inspections to ensure any agreed-upon management measures remain effective and pre-construction conditions remain the same or improve.

Improved drainage conditions due to drainage infrastructure installation, repair, and replacement projects would have minor beneficial impacts on soil due to decreased risk of erosion. Project 11 specifically would implement erosion control measures and seeding (see **Tables 2-2** and **2-3**). With project-specific measures required and in place during implementation of Alternative 1, potential impacts on soils in the ROI would be negligible, short term, and adverse. Minor, long-term, beneficial impacts to soils would occur under this alternative.

3.6.3.2 Alternative 2

Geology and Topography

Impacts to geology and topography under Alternative 2 would be the same as those under Alternative 1.

Soils

Fewer potential impacts to soils related to earthwork would occur under Alternative 2 due to the decreased footprint of proposed construction and demolition actions (**Figure 3-4**). The demolition of 141,260 ft² of Taxiway A South under Project 12 in Alternative 1 would not be included in Project 12 under Alternative 2. As compared to Alternative 1, Alternative 2 would result in a total disturbance of approximately 691,786 ft² of soil, which is 424,166 ft² less than Alternative 1. Alternative 2 would add 197,928 ft² of impervious surfaces compared to 53,762 ft² of impervious surfaces added under Alternative 1. The added impervious surface area under Alternative 2 is equal to an approximately 0.5 percent increase from the current amount on the Installation.

Effects on soils under Alternative 2 would be managed as outlined under Alternative 1. With those management measures in place, impacts to soils under Alternative 2 would be the same as those under Alternative 1.

3.6.3.3 Cumulative Impacts

The Proposed Action, in addition to the past, present, and reasonably foreseeable future actions and environmental trends, would have negligible cumulative impacts to soils during new construction activities, which would occur in previously disturbed areas. BMPs and compliance with required permits would minimize the cumulative effect on soils. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to earth resources would be anticipated to occur with implementation of the Proposed Action Alternatives.

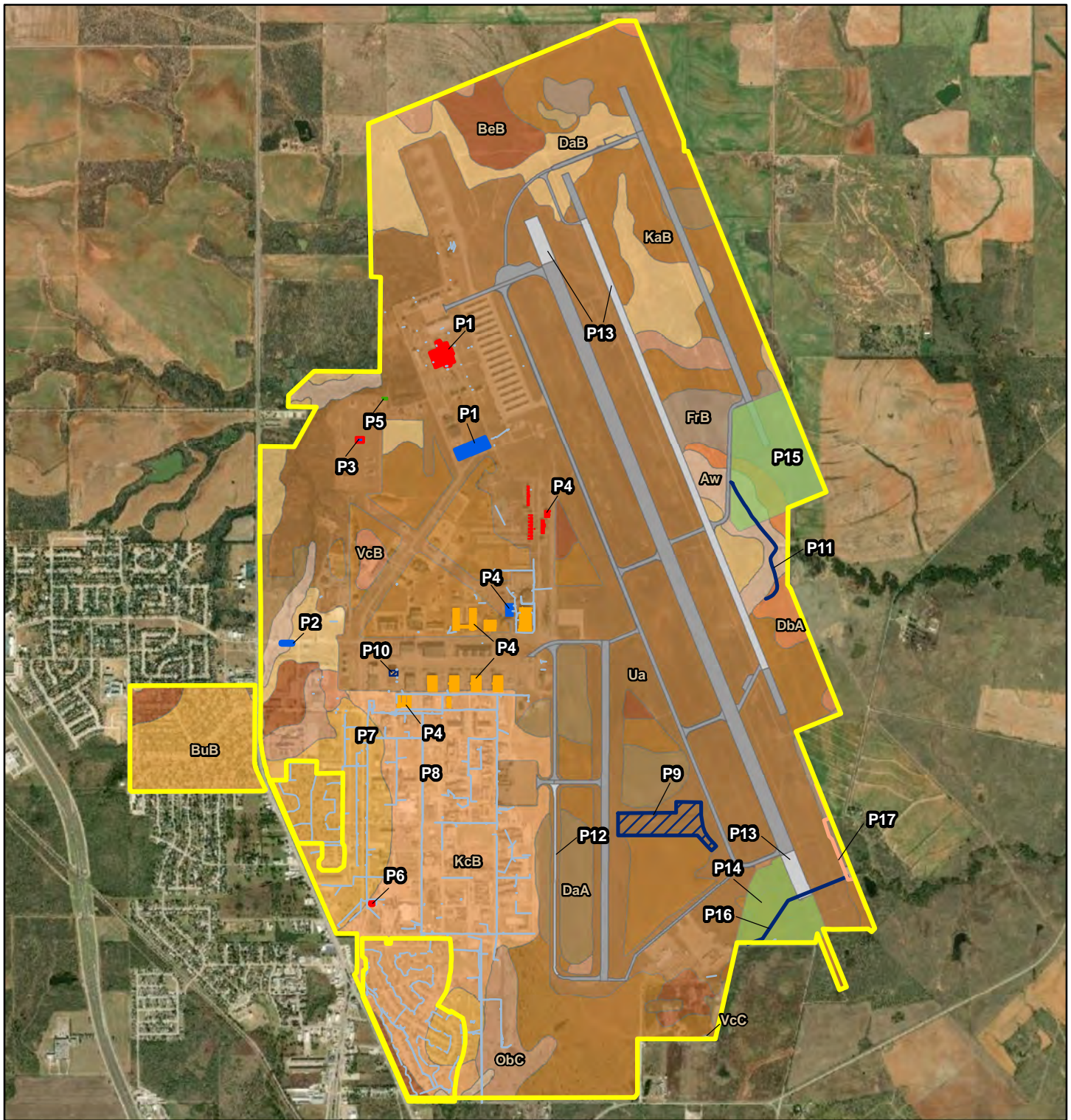


FIGURE 3-4
Soil Types – Alternative 2

- | | | | | |
|-----------------------|------------------------|--|--|---|
| Drainage Line Repair | Additions to Buildings | Airfield Project Area | Deandale Silt Loam, Loamy Substratum, 0-1 Percent Slopes | Jolly Fine Sandy Loam, 1-5 Percent Slopes |
| Electrical Lines | Construction | Bluegrove loam, 1-3 Percent Slopes | Frankirk Loam, 1-3 Percent Slopes | Ua Urban Land |
| Fence | Demolition | Bluegrove-Urban Land Complex, 1-3 Percent Slopes | Grading Area | VcB Vernon Clay Loam, 1-3 Percent Slopes |
| Installation Boundary | Renovation | Deandale Silt Loam, 0-1 Percent Slopes | Kamay Silt Loam, 1-3 Percent Slopes | VcC Vernon Clay Loam, 3-5 Percent Slopes |
| Drainage Repair Area | Airfield Pavement | Deandale Silt Loam, 1-3 Percent Slopes | Kamay-Urban Land Complex, 0-3 Percent Slopes | Aw Wheatwood and Port Soils, Frequently Flooded |



0 0.5 1 Mile

Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



3.6.3.4 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects, and Sheppard AFB would continue to operate under current conditions. There would be no changes to earth resources beyond baseline conditions, and inadequate drainage infrastructure would continue to contribute to erosion on the airfield. The facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.6.3.5 Best Management Practices and Mitigation Measures

BMPs recommended to reduce potential impacts on earth resources include:

- Revegetate temporarily disturbed areas as soon as possible to minimize erosion and sedimentation.
- Maintain stormwater management features throughout the life of the project to ensure long-term functionality to original design standards.

No project-specific mitigation measures are recommended.

3.7 WATER RESOURCES

3.7.1 Definition of the Resource

Water resources include surface water, groundwater, stormwater, wetlands, and floodplains. The *Federal Water Pollution Control Act of 1948*, as amended by the Clean Water Act (CWA), was enacted to protect water resources vulnerable to contamination and quality degradation. The CWA provides the authority to establish water quality standards, control discharges into surface and subsurface waters (including groundwater), develop waste treatment management plans and practices, and issue permits for discharges. A National Pollutant Discharge Elimination System (NPDES) permit under Section 402 of the CWA is required for discharges into navigable waters. The USEPA oversees the issuance of NPDES permits at federal facilities as well as water quality regulations (CWA, Section 401) for both surface- and groundwater.

The ROI for water resources is Sheppard AFB and the Wichita River Watershed.

3.7.1.1 Surface Water and Stormwater

The USEPA defines surface waters as waters of the US, which are primarily lakes, rivers, estuaries, coastal waters, and wetlands. Waters of the US, or jurisdictional waters, including surface water resources as defined in [33 CFR § 328.3](#), are regulated under Sections 401 and 404 of the CWA and Section 10 of the *Rivers and Harbors Act*. Man-made features not directly associated with a natural drainage, such as upland stock ponds and irrigation canals, are generally not considered jurisdictional waters.

3.7.1.2 Stormwater

Stormwater is surface runoff generated from precipitation and has the potential to introduce sediments and other pollutants into surface waters. Stormwater is regulated under the CWA Section 402 NPDES program. Impervious surfaces such as buildings, roads, parking lots, and even some natural soils increase surface runoff. Stormwater management systems are designed to contain runoff on site during construction and to maintain predevelopment stormwater flow characteristics following development through either the application of infiltration or retention practices. The *Energy Independence and Security Act* ([42 USC § 17094](#)) establishes stormwater design requirements for development and redevelopment projects. Under these requirements, federal facility projects larger than 5,000 ft² must maintain or restore, to the maximum

extent feasible, the predevelopment hydrologic conditions of the property with respect to the water temperature, rate, volume, and duration of flow.

3.7.1.3 Groundwater

Groundwater is water that exists in the saturated zone beneath the earth's surface in pore spaces and fractures and includes aquifers. Groundwater is recharged via water moving below the ground's surface through those pore spaces (e.g., precipitation and surface water bodies) and via water moving upward from lower aquifers. Groundwater is an essential resource that can be used for drinking, irrigation, and/or industrial processes, and can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations. Groundwater quality and quantity are regulated under several different programs, including the *Safe Drinking Water Act*, which helps protect aquifers that are critical to water supply.

3.7.1.4 Wetlands

The US Army Corps of Engineers (USACE) (33 CFR § 328.3) and the USEPA (40 CFR § 230.3) define wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Wetlands are a subset of waters of the US, and those deemed “jurisdictional” are regulated under Section 404 of the CWA. When a federal agency's proposed action requires a Section 404 wetlands permit, states are provided authority to enforce surface water quality standards under Section 401 of the CWA by review of the proposed action and permit application. The natural-function benefits of wetlands include flood control, groundwater recharge, maintenance of biodiversity, wildlife habitat, recreational opportunities, and maintenance of water quality.

3.7.1.5 Floodplains

Floodplains are areas of low-level ground along rivers, stream channels, or coastal waters that provide a broad area to fill with, and temporarily store, floodwater. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body. Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. The risk of flooding is influenced by local topography, the frequency of precipitation events, and the size and characteristics of the watershed that contains the floodplain.

The Federal Emergency Management Agency (FEMA) evaluates and maps flood potential, which defines the 100-year (regulatory) floodplain. The 100-year floodplain is the area that has a one-percent annual chance of inundation by floodwater. FEMA uses letter designations for flood zone classification. Zone A designates 100-year floodplains where flood depths (base flood elevations) have not been calculated and further studies are needed. Zone AE floodplains include calculated base flood elevations, which are the minimum elevation standards for buildings in a floodplain. Zone X indicates areas outside of the FEMA 100-year regulatory floodplain that have a low risk of flooding hazards (FEMA, 2020). Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to property and human health and safety.

EO 11988, *Floodplain Management*, provides guidelines that agencies should follow as part of their decision-making process on projects that have potential impacts to, or within, the floodplain. This EO requires that federal agencies avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and avoid direct and indirect support of floodplain development wherever there is a practicable alternative. EO 13690, *Establishing a Flood Risk Management Standard and Process for Further Soliciting and Considering Stakeholder Input*, established a Federal Flood Risk Management Standard and a process for further soliciting and considering stakeholder input; however, this EO was later revoked by Section 6 of EO 13807, *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure*. EO 13807 did not revoke or otherwise alter EO 11988.

3.7.2 Existing Conditions

3.7.2.1 Surface Waters

Sheppard AFB lies within the Wichita River Basin (Hydrologic Unit Code #11130206), part of the larger Red River watershed that spans seven states. Two sub-basins of the Wichita River Basin divide the Installation: the Bear Creek-Wichita River sub-basin and the Plum Creek-Wichita River sub-basin. These basins drain water from Sheppard AFB south-southeast and south-southwest, respectively. Both Bear Creek and Plum Creek are tributaries of the Wichita River.

Pursuant to the CWA, the TCEQ sets and enforces water quality standards for surface waters in Texas. Discharges to State waters are permitted under the TPDES permit program.² TPDES permits are required for different types of pollutant-generating activities such as construction, industrial operations, and public-owned and operated storm sewers (TCEQ 2022a, 2022b). Sheppard AFB has a TPDES permit developed according to the provisions of the Small MS4 General Permit TXR040000.

Under Section 303(d) of the CWA, the State of Texas is required to identify and develop a list of waterbodies (or waterbody segments) that are impaired based on their intended use (e.g., swimming or fishing); the nearest impaired waterway to Sheppard AFB is more than three miles southeast and therefore would not be impacted by the Proposed Action.

The surface waters associated with Sheppard AFB consist of intermittent and perennial streams and some ponds. Bear Creek, a perennial stream that bisects the Installation from north to southeast, is the primary surface water feature. However, due to past development activities on Sheppard AFB, streams on the Installation have been substantially altered from their natural state. Most streams on the Installation were diverted below ground to support development (e.g., Bear Creek in the southern portion of the airfield).

3.7.2.2 Wetlands

During a 2014 wetland delineation study, Sheppard AFB was found to contain four jurisdictional wetlands totaling approximately 10 acres. Three of the four jurisdictional wetlands are classified as palustrine forested and the fourth is classified as palustrine shrub-scrub (Air Force, 2014).

The three palustrine forested wetlands are classified as jurisdictional because they are located within the ordinary high-water mark of a jurisdictional stream and show signs of surface water and saturation. The palustrine shrub-scrub wetland is considered jurisdictional, as it is associated with a tributary of Bear Creek (Air Force, 2014).

An additional three non-jurisdictional wetlands, totaling approximately 12.13 acres, were also identified on the Installation.

3.7.2.3 Stormwater

Stormwater that originates on Sheppard AFB ultimately discharges to Plum Creek, Bear Creek, or the Wichita River via a series of outfalls. Plum and Bear creeks are tributaries of the Wichita River, which empties to the Red River farther east (Sheppard AFB, 2020a).

Sheppard AFB maintains an Installation-wide Stormwater Management Plan (SWMP) to meet its obligations under the TCEQ General Permit for Phase II Municipal Separate Storm Sewer System (MS4) *Discharges for Small Cities within the State of Texas* (MS4 #TXR040087). The SWMP describes procedures for the management of stormwater that originates on Sheppard AFB and discharges via the three main outfalls along the boundary of the Installation. Outfall 003 also discharges into the City of Wichita

² https://www.sheppard.af.mil/Portals/65/Documents/Environmental/MS4%20NOI_2022.pdf?ver=Pdwt5vBCzHFXoZGQYqDYhg%3D%3D

Falls' MS4 (Sheppard AFB, 2014). The Sheppard AFB SWMP also includes the stormwater management BMPs established under the Installation's MS4 permit.

Multi-Sector General Permits (MSGPs) are issued under the TPDES permit program to regulate stormwater discharges from industrial areas³. Among other conditions, MSGPs require the preparation and implementation of a SWP3 specific to the involved industrial activities. Sheppard AFB maintains a SWP3 for this purpose.

Stormwater discharges from construction activities that disturb one acre or more of soil on the Installation are also permitted under the TPDES. Construction sites of this size require a TCEQ-approved CGP prior to the start of construction activity. CGPs establish standard measures to prevent or minimize potential soil erosion and sedimentation from construction sites. For example, as conditions of the CGP construction activities, Sheppard AFB must adhere to a project-specific SWP3, and post-construction inspections are required to confirm establishment of a 70-percent vegetative cover (TCEQ, 2023b).

3.7.2.4 Floodplains

Sheppard AFB is surrounded by several named and unnamed streams and tributaries that are associated with identified 100-year floodplains classified as Zone A. Zone A refers to the 100-year floodplain where detailed elevation modeling has not occurred. An unnamed stream to the northwest of Sheppard AFB connects with Bear Creek to the east of the Installation via a Zone A floodplain located in the northern third of the Installation. This Zone A floodplain, which is approximately 0.5 mile wide, bisects the Installation in a northwest-southeast direction (FEMA, 2021).

3.7.2.5 Groundwater and Water Quality

Groundwater quantity and quality in north-central Texas is characterized by the Seymour Aquifer. Most groundwater is contained in isolated patches of alluvium in poorly sorted gravel, coarse-grained sedimentary rock, sand, and silty clay beds. Groundwater yields are highly variable, ranging from 100 to 1,300 gallons per minute or, on average, 300 gallons per minute. Ranging from fresh to slightly saline, groundwater quality is affected by excess nitrates caused by natural processes and man-made inputs (e.g., chloride). Approximately 90 percent of groundwater pumped from the Seymour Aquifer is used for irrigation; the remaining 10 percent is used as a potable water supply (Texas Water Development Board [TWDB], 2011). Shallow groundwater occurs at or near the ground surface on Sheppard AFB, separated from the underlying main body of groundwater by a layer of rock. Groundwater depth varies, and a gradient of shallow to deeper groundwater has been observed traveling from south to west within the boundaries of the Installation. Depth to groundwater from the surface ranges from 2.5 feet at the southern end of the Installation down to 35 feet in the western portion of the Installation (TWDB, 2020). Within the northern extent of Sheppard AFB, groundwater generally flows in a northeasterly direction; within the southern half of the Installation, groundwater generally flows in a southerly and easterly direction (Sheppard AFB, 2017a).

3.7.3 Environmental Consequences

Potential adverse impact(s) on water resources would include:

- fill or dredge of jurisdictional waters of the US subject to Sections 401 and 404 of the CWA;
- the unauthorized release of contaminants into an "impaired" waterbody subject to a Total Maximum Daily Load;⁴
- non-compliance with applicable stormwater management requirements for the prevention, control, and minimization of erosion and sedimentation;

³ On 14 August 2021, the TCEQ renewed the [MSGP for Industrial Facilities](#) (TCEQ, 2023a).

⁴ <https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls>

- development within a 100-year floodplain without full consideration of alternatives and methods that would avoid, prevent, or minimize adversely affecting its functional value; and
- the unmitigated release of a regulated contaminant into the environment with potential to enter groundwater.

3.7.3.1 Alternative 1 (Preferred Alternative)

Surface Waters

Under Alternative 1, short-term, negligible, adverse impacts to Bear Creek could occur during construction activities related to Projects 9, 11, 13, and 15 because of increased risk of erosion and sedimentation due to disturbed soils (**Figure 3-5**). However, these projects would improve airfield drainage south of Taxiway G, Repair Runway 15C/33C and Overruns 15R/33L and maintain airfield grading southeast of Runway 15L/33R, respectively. Impacts associated with construction activities would be managed through BMPs such as erosion and sedimentation control and effective project coordination and planning. Improved surface drainage would allow for erosion control of soils adjacent to Bear Creek and would help to carry water to designated drainage pipes and outfalls. This would provide long-term, minor, beneficial impacts to surface waters.

Wetlands

Under Alternative 1, impacts to wetlands would not be expected to occur, as none of the projects are in proximity to jurisdictional or non-jurisdictional wetlands. Project 2, the closest project to a wetland, is located more than 130 feet away from the nearest wetland boundary (**Figure 3-5**).

Stormwater

Projects under Alternative 1 would result in a net increase of approximately 53,762 ft² of impervious surface area. This overall increase would result in long-term, minor, adverse impacts to stormwater at Sheppard AFB due to increased surface runoff potential. While there would be an overall increase in impervious surface area, significant adverse impacts would not occur as the area for development is currently highly developed with impervious surfaces, resulting in little change to the current landscape of the Installation.

Floodplains

Under Alternative 1, Projects 1, 11, 13, 15, 16, and 17 would be located within the 100-year floodplain. Project 1, demolition of the existing HQ facility, would result in a long-term, minor, beneficial impact to the floodplain as approximately 159,995 ft² of impervious surface would be removed from the regulatory floodplain. The new construction associated with Project 1 would be located outside of the floodplain, further reducing impacts. Project 11 would include repairs to the existing runway in the floodplain. These repairs would improve drainage on the runway, allowing the floodplain to function and drain as intended with minimal impediment from impervious surfaces. Projects 13, 15, and 16 would include repair of existing infrastructure resulting in beneficial impacts to floodplains. Project 17, relocation of the perimeter fence, would result in no change to the floodplain as this fence currently exists within the floodplain and would remain there.

Groundwater and Water Quality

Under Alternative 1, groundwater and water quality would be improved by updating and repairing drainage infrastructure on the Installation. Specifically, Project 13 would provide subsurface drainage improvements aiding the process of groundwater collection and overall function. Improved drainage would allow the water to flow, as intended, with decreased ponding, sedimentation, and/or erosion. Project 11 would provide additional surface drainage improvements and would include grading to reduce erosion and sedimentation. These improvements would provide long-term, negligible, beneficial impacts to groundwater and water quality.

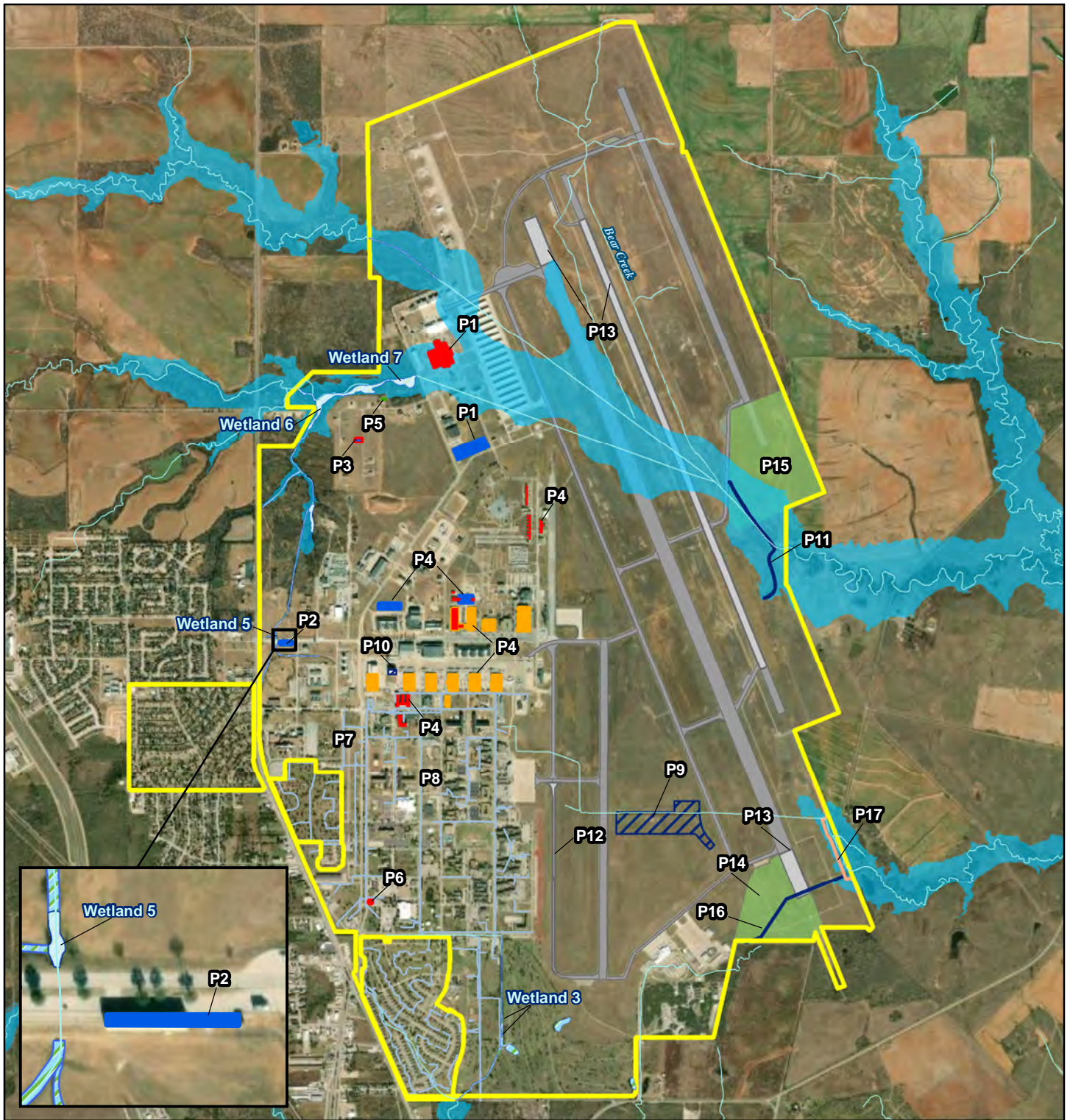
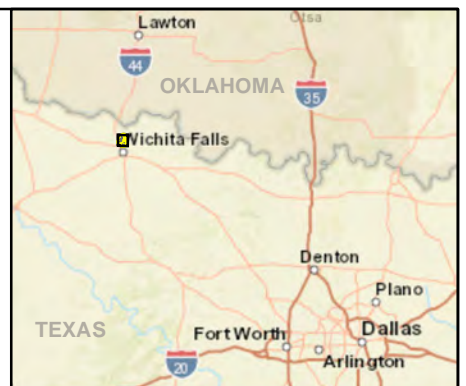


FIGURE 3-5
Surface Waters and Floodplains - Alternative 1

- | | | |
|-----------------------|------------------------|-----------------------------|
| Creek | Additions to Buildings | Grading Area |
| Drainage Line | Construction | Jurisdictional Wetlands |
| Electrical Lines | Demolition | Non-Jurisdictional Wetlands |
| Fence | Renovation | 100-Year Floodplain |
| Installation Boundary | Airfield Pavement | |
| Drainage Repair Area | Airfield Project Area | |



Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



The addition of new impervious surfaces would result in long-term, minor, adverse impacts to the natural function of groundwater at Sheppard AFB at Sheppard AFB. While there is an overall increase in impervious surface area, significant adverse impacts would not occur as the area where projects would be located is currently highly developed with impervious surfaces resulting in little change to the current landscape of Sheppard AFB.

3.7.3.2 Alternative 2

Surface Waters

Impacts to surface waters under Alternative 2, including beneficial ones, would be the same as those under Alternative 1.

Wetlands

Impacts to wetlands under Alternative 2 would be the same as those under Alternative 1.

Stormwater

As with Alternative 1, Alternative 2 would also result in a net increase of impervious surface area. However, the demolition of 141,260 ft² of Taxiway A South as part of Project 12 under Alternative 1 would not be included in Project 12 under Alternative 2, resulting in an overall increase of approximately 197,928 ft² of impervious surface area. Alternative 2 would add 197,928 ft² of impervious surfaces compared to 53,762 ft² of impervious surfaces added under Alternative 1. This overall increase would result in long-term, minor, adverse impacts to stormwater at Sheppard AFB due to increased surface runoff potential. While there is an overall increase in impervious surface area, significant adverse impacts would not occur as the area for development is currently highly developed with impervious surfaces resulting in little change to the current landscape of Sheppard AFB.

Floodplains

Impacts to floodplains under Alternative 2 would be the same as those under Alternative 1 (**Figure 3-6**).

Groundwater and Water Quality

Impacts to groundwater and water quality under Alternative 2, including beneficial impacts, would be similar to those under Alternative 1. Under Alternative 2, Project 12 would not include the demolition of 141,260 ft² of airfield pavement, resulting in a higher overall amount of added impervious surface area in combination with the other Alternative 2 projects (approximately 197,928 ft²). This would have long-term, negligible, adverse impacts on the ability of groundwater to reach groundwater resources.

3.7.3.3 Cumulative Impacts

When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs, the Proposed Action Alternatives would result in cumulative beneficial impacts to stormwater due to future planned Sanitary and Storm Sewer Rehabilitation Projects (see **Table 3-1**). No significant cumulative adverse effects to water resources would occur with implementation of the Proposed Action Alternatives.

3.7.3.4 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects. The water resources on, around, and beneath Sheppard AFB would continue to be managed in compliance with applicable federal, state, and local laws and regulations. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo, and facility and infrastructure assets of the Installation would continue to degrade. Various components of the sanitary and

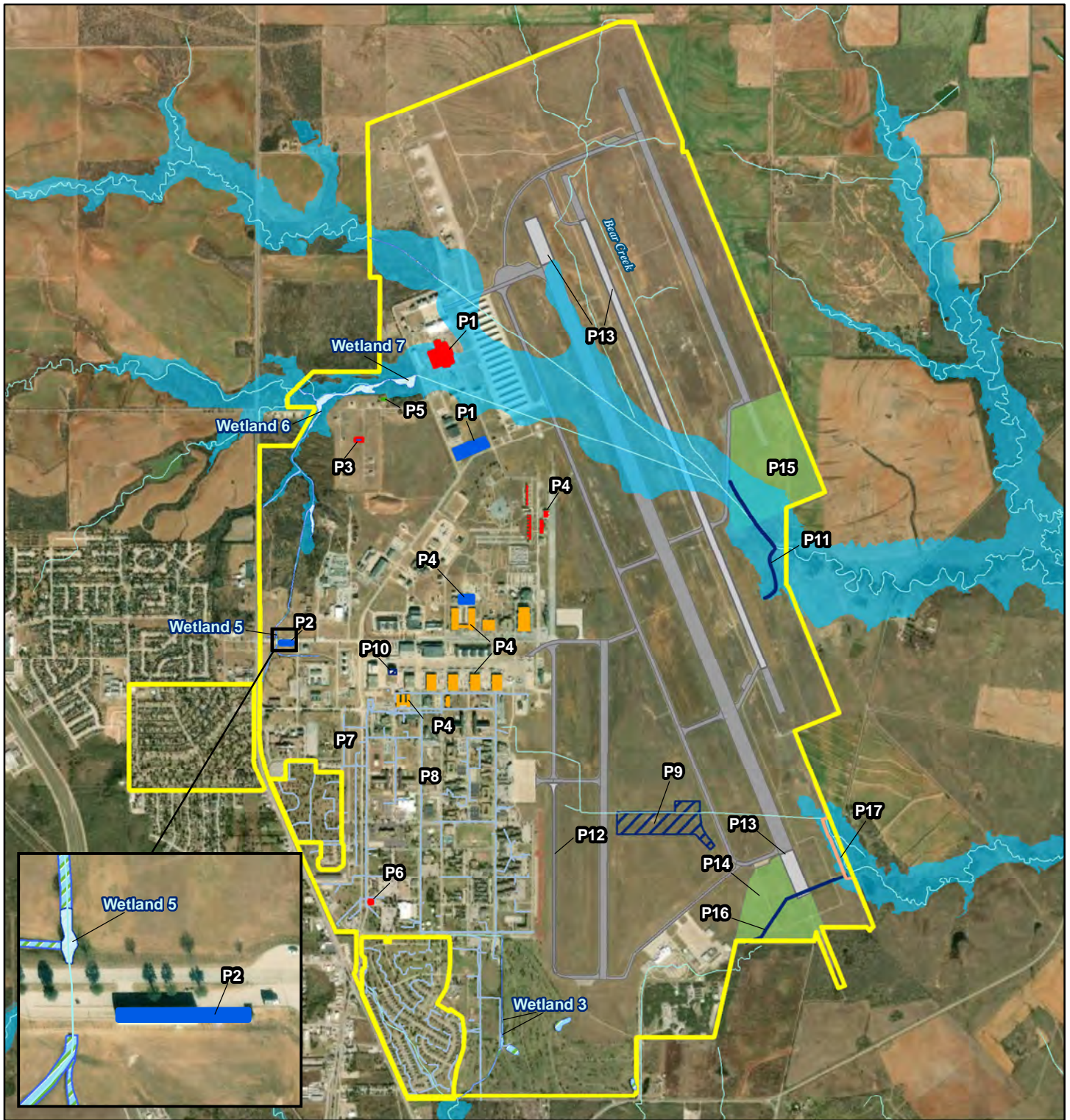


FIGURE 3-6
Surface Waters and Floodplains - Alternative 2

- | | | |
|-----------------------|------------------------|-----------------------------|
| Creek | Additions to Buildings | Grading Area |
| Drainage Line | Construction | Jurisdictional Wetlands |
| Electrical Lines | Demolition | Non-Jurisdictional Wetlands |
| Fence | Renovation | 100-Year Floodplain |
| Installation Boundary | Airfield Pavement | |
| Drainage Repair Area | Airfield Project Area | |



Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



storm sewer systems on Installation would continue to deteriorate, increasing the probability of system malfunctions such as leaks or breaks that contaminate local surface water or groundwater resources. The No Action Alternative would eventually result in Sheppard AFB's non-compliance with permits currently in place to protect such resources. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.7.3.5 Best Management Practices and Mitigation Measures

BMPs recommended to reduce potential impacts on water resources include:

- Follow recommended procedures for soil erosion and sedimentation prevention surrounding stormwater and drainage lines.
- Implement yearly drainage line flushing to reduce degradation and blockage of existing lines to ensure stormwater is flowing freely.
- Conduct regular inspections of stormwater outfalls.

No project-specific mitigation measures are recommended.

3.8 BIOLOGICAL RESOURCES

3.8.1 Definition of the Resource

Biological resources include native or invasive plants and animals; sensitive and protected floral and faunal species; and the associated habitats, such as wetlands, forests, grasslands, cliffs, and caves in which they exist. Habitat can be defined as the resources and conditions in an area that support a defined group of organisms. The following is a description of the primary federal statutes that form the regulatory framework for the evaluation of biological resources.

The ROI for biological resources is Sheppard AFB.

3.8.1.1 Endangered Species Act

The ESA established protection for threatened and endangered species and the ecosystems that they depend on. Sensitive and protected biological resources include plant and animal species listed as threatened, endangered, or special status by the USFWS. The ESA also allows the designation of geographic areas as critical habitat for threatened or endangered species. Under the ESA, an "endangered species" is defined as any species in danger of extinction throughout all, or a large portion, of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. USFWS maintains a list of candidate species being evaluated for possible listing as threatened or endangered under the ESA. Although candidate species receive no statutory protection under the ESA, USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and may warrant statutory protection in the future.

3.8.1.2 Migratory Bird Treaty Act

The *Migratory Bird Treaty Act of 1918* ([16 USC §§ 703–712](#)) (MBTA) makes it unlawful for anyone to take migratory birds or their parts, nests, or eggs unless permitted to do so by regulations. Per the MBTA, "take" is defined as "pursue, hunt, shoot, wound, kill, trap, capture, or collect" ([50 CFR § 10.12](#)). Birds protected under the MBTA include nearly all species in the US except for non-native/human-introduced species and some game birds.

EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires all federal agencies undertaking activities that may negatively impact migratory birds to follow a prescribed set of actions to further implement the MBTA. EO 13186 directs federal agencies to develop a Memorandum of Understanding with USFWS that promotes the conservation of migratory birds.

The *National Defense Authorization Act for Fiscal Year 2003* ([Public Law 107-314, 116 Stat. 2458](#)) gave the Secretary of the Interior the authority to prescribe regulations to exempt the armed forces from the incidental take of migratory birds during authorized military readiness activities. Congress defined military readiness activities as all training and operations of the US Armed Forces that relate to combat and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use. Further, in October of 2012, the Authorization of Take Incidental to Military Readiness Activities was published in the Federal Register ([50 CFR § 21.15](#)), authorizing incidental take during military readiness activities unless such activities may result in significant adverse effects on a population of a migratory bird species.

In December 2017, the US Department of the Interior issued M-Opinion 37050, which concluded that the take of migratory birds from an activity is not prohibited by the MBTA when the purpose of that activity is not the take of migratory birds, eggs, or nests. On August 11, 2020, the US District Court, Southern District of New York, vacated M-37050. Thus, the incidental take of migratory birds is again prohibited. The interpretation of the MBTA remains in flux, and additional court proceedings are expected.

3.8.1.3 Bald and Golden Eagle Protection Act

The *Bald and Golden Eagle Protection Act of 1940* ([16 USC §§ 668–668c](#)) (BGEPA) prohibits actions to “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” Further, the BGEPA defines “take” as “pursue, shoot, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” is defined as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, injury to an eagle, a decrease in productivity by substantially interfering with the eagle’s normal breeding, feeding or sheltering behavior, or nest abandonment by substantially interfering with the eagle’s normal breeding, feeding, or sheltering behavior.” The BGEPA also prohibits activities around an active or inactive nest site that could result in disturbance to returning eagles.

3.8.1.4 Invasive Species

Invasive species are non-native species whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health. EO 13751, *Safeguarding the Nation from the Impacts of Invasive Species*, requires federal agencies to identify actions that may affect invasive species; use relevant programs to prevent introductions of invasive species; detect, respond, and control such species; monitor invasive species populations; and provide for restoration of native species. Invasive species damage native habitat and impede successful vegetation management by outcompeting native species. Through a multi-year grassland restoration plan that began in 2014, Sheppard AFB has established and/or restored more than 500 acres of native grasslands. The restoration of native grasslands on the Installation has many benefits, including carbon sequestration, improved water quality, and improved soil health (Johnson, 1990).

Invasive species at Sheppard AFB spread most often after some type of unmitigated disturbance, such as construction activities, and reduce the stability of the existing vegetation community. The decreased soil nutrients and altered hydrology typically support the growth of invasives rather than native vegetation.

3.8.2 Existing Conditions

3.8.2.1 Vegetation

Sheppard AFB is located in the Southern Plains in the south-central US. Two biomes, Cross Timbers and Rolling Plains, are found within the boundaries of Sheppard AFB. A biome is a characteristically similar area of plants and animals. The Cross Timbers and Rolling Plains biomes are characterized by large arid spans of openly spaced vegetation on alluvial soils. The Cross Timbers biome is located in an area that extends from southern Kansas through central Oklahoma and into north-central Texas. This region is

characterized by a mix of deciduous forests and grasslands. The Cross Timbers is named for the belt of post oak (*Quercus stellata*) and blackjack oak (*Quercus marilandica*) trees that grow there, interspersed with prairies and savannas. The landscape is generally flat, with some rolling hills and rocky outcrops. Historically, the region was important for grazing and was heavily logged for its valuable timber resources (TPWD, 2023a). The Rolling Plains biome is located further west, stretching from the eastern edge of the Rocky Mountains in New Mexico across western Texas and into southern Oklahoma. This region is characterized by rolling hills and plains, with a mix of grasslands and forests. The landscape is generally drier and more arid than the Cross Timbers biome, and the vegetation is adapted to drought conditions. Historically, the region was important for ranching and grazing, and today it remains an important region for agriculture (TPWD, 2023b).

Plant species within Sheppard AFB are typically drought resistant. The vegetation throughout the region has been heavily impacted by overgrazing of livestock and other construction and development. The prairies in the Rolling Plains biome, once dominated by sideoats grama (*Bouteloua curtipendula*), little bluestem (*Schizachyrium scoparium*), and blue grama (*Bouteloua gracilis*), have largely been converted to grain fields or have been cleared for oil well pads. Sheppard AFB is dominated by mixed-vegetation canopy with scattered broadleaf evergreen or deciduous shrub and short tree species with sporadic grass cover throughout the region. A 2015 survey identified four vegetation types on Sheppard AFB: riparian, maintained grassland, mixed mesquite woodland, and mesquite brushland (Air Force, 2015b).

Approximately 2,763 acres of Sheppard AFB, or approximately 52 percent of the total Installation, are improved or semi-improved grounds, which require some periodic maintenance such as mowing, irrigation, and xeriscaping practices, which utilize drought-tolerant plants for water conservation. Predominant varieties of turf grasses observed within the developed areas of Sheppard AFB include Bermudagrass (*Cynodon dactylon*), yellow bluestem (*Bothriochloa ischaemum*), and buffalo grass (*Bouteloua dactyloides*). The area within Sheppard AFB is predominantly improved or semi-improved grounds. On and around the ROI, efforts to maintain vegetation have also included controlled burns, reseeding, and targeted herbicide application.

3.8.2.2 Wildlife

The land within Sheppard AFB is moderately to highly developed. Species that have adapted to urban life can be found within the developed portions of the Installation. Avian, reptile, amphibian, and small mammal species may occur on the Installation in areas of limited development. Wildlife present at Sheppard AFB includes species that are typical of grassland, woodland, and riparian habitats of the region in northern Texas. Species in the vicinity of Sheppard AFB include but are not limited to white-tailed deer (*Odocoileus virginianus*), coyotes (*Canis latrans*), bobcats (*Lynx rufus*), raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), armadillos (*Dasypus novemcinctus*), foxes (*Vulpes* spp.), squirrels (*Sciurus* spp.), rabbits (*Sylvilagus* spp.), and skunks (family *Mephitidae*).

Very few wildlife surveys have been conducted on Sheppard AFB. The 2015 survey identified 46 species of birds, several of which were migratory species using the Installation as a stopover to feed and rest during migration. The survey also found other breeding species of bird, including a pair of Mississippi kites (*Ictinia mississippiensis*). There were several small mammals detected through trapping efforts in riparian, grassland, and mixed woodland habitats, including eastern woodrat (*Neotoma floridana*), hispid cotton rat (*Sigmodon hispidus*), and eastern deer mouse (*Peromyscus maniculatus*). Two species of snake, the western ratsnake (*Pantherophis obsoletus*) and North American racer (*Coluber constrictor*), were found near water sources along with other reptiles, including a red-eared slider (*Trachemys scripta elegans*), yellow mud turtle (*Kinosternon flavescens*), and spiny softshell (*Coluber constrictor*) (Air Force, 2015b). The Proposed Action and Alternatives would occur in developed areas that are not likely to support native wildlife species.

3.8.2.3 Threatened or Endangered Species and Other Protected Species

Threatened or endangered species and other protected species include federally and state-listed endangered or threatened species, Texas Species of Greatest Conservation Need (SGCN), and birds that are protected under the MBTA and/or the BGEPA or are identified as Birds of Conservation Concern (BCC) by the USFWS (Sheppard AFB, 2022b).

Threatened or Endangered Species

One federally listed threatened or endangered species and three state-listed threatened or endangered species have the potential to occur in the ROI and be affected by the Proposed Action Alternatives (**Table 3-10**) (Sheppard AFB, 2022b). Of these species, only two species, the Texas kangaroo rat (*Dipodomys elator*) and the Texas horned lizard (*Phrynosoma cornutum*), are known to occur on Sheppard AFB.

**Table 3-10
Federal- and State-Listed Species with the Potential to Occur Within the ROI**

Common Name	Scientific Name	Type	Status	Known to Occur on Sheppard AFB
Whooping crane	<i>Grus americana</i>	Bird	Federal Endangered	No
Tricolored bat	<i>Perimyotis subflavus</i>	Mammal	Federal Proposed Endangered and State SGCN	No
Texas kangaroo rat	<i>Dipodomys elator</i>	Mammal	State Threatened/ SGCN	Yes
Texas horned lizard	<i>Phrynosoma cornutum</i>	Reptile	State Threatened/ SGCN	Yes

AFB = Air Force Base; ROI = region of influence; SGCN = species of greatest conservation need

Whooping cranes occur in wetlands, marshes, mudflats, wet prairies, and fields (National Wildlife Federation, 2023). No suitable habitat for the whooping crane is present within the ROI; however, whooping cranes may stop over in the ROI during seasonal migration to and from the Texas coast. While two other birds, the piping plover (*Charadrius meoldus*) and the red knot (*Calidris canutus rufa*), have the potential to occur within the ROI, the USFWS IPaC system indicates that impacts to these species within the ROI need only be evaluated for projects involving wind energy (**Appendix A**). None of these species are documented to occur on Sheppard AFB, no ESA-designated critical habitat occurs on or adjacent to the Installation, and the Proposed Action would not involve wind energy.

The tricolored bat (*Perimyotis subflavus*) is a Texas SGCN, and while it does not have official protection under the ESA, it is listed by the USFWS as “Proposed Endangered.” During the winter it is often found in caves and abandoned mines, but in the southern US where there are fewer caves, the species will often roost in road-associated culverts or man-made structures. During spring, summer, and fall, the bats are often found in forested areas, living among the leaves of live or recently dead deciduous hardwood trees. They can, however, also be found in Spanish moss, pine trees, and occasionally in man-made structures. The tricolored bat is facing extinction due to white-nose syndrome, which has caused an estimated 90-percent decrease in population in affected tricolored bat colonies across most of the species range (USFWS, 2023). When making use of a man-made structure, the tricolored bat typically prefers to hibernate on ceilings with minimal air flow and relatively stable conditions that allow them to remain undisturbed (TWPD, 2023c). Vacant and unused structures on Sheppard AFB could potentially provide roosting areas for this species.

While not federally listed, the monarch butterfly (*Danaus plexippus*) is currently considered a candidate species by USFWS. Monarch butterflies migrate in the spring and autumn through Texas in an area known as the Central Flyway. The decline of monarch butterfly populations has been attributed to reductions in overwintering areas and loss of milkweed and nectar-producing plants in breeding areas. Extreme weather conditions have also impacted overwintering breeding areas (TPWD, 2016a). Monarch butterflies feed on

nectar from many species of flower but breed only where there are milkweeds. Undisturbed areas of Sheppard AFB may provide flowering plants for migrating individuals if there is enough winter rain to produce spring flowers. Due to disturbances associated with development on Sheppard AFB, habitat suitability associated with monarch butterflies would be considered relatively low, and would be limited to smaller, patchy areas. Due to disturbances associated with development on Sheppard AFB, habitat suitability associated with monarch butterflies would be considered relatively low, and would be limited to smaller, patchy areas.

Migratory Birds

Sheppard AFB lies within the Central Flyway, a major north-to-south bird migration corridor that encompasses much of the central US. As such, the Installation is a potential stopover or breeding season location for various migratory birds. Migratory bird species, protected under the MBTA, likely utilize areas in the undeveloped surrounding areas of Sheppard AFB. In accordance with the *Migratory Bird Treaty Act of 1918* ([16 USC §§ 703–712](#)) and EO 13186, [Responsibilities of Federal Agencies to Protect Migratory Birds](#), Sheppard AFB enforces a do-not-disturb for any newly established migratory bird nests on the Installation. In such cases, removal or relocation of active nests of migratory birds left undisturbed to hatch their young or deemed a safety hazard requires a permit.

Two migratory birds with potential to occur on or around Sheppard AFB are notable as USFWS BCC species: the chimney swift (*Chaetura pelagica*) and the red-headed woodpecker (*Melanerpes erythrocephalus*). The chimney swift breeds regionally from approximately March through August and may be present in the area from early April to the end of May, during mid-June and mid-July, at the beginning and end of August, and through September into the beginning of October each year. The red-headed woodpecker has the most potential to occur in late April, late May, and early and late September each year and breeds regionally from approximately May through September (**Appendix A**).

Similar to the monarch butterfly, disturbances associated with development on the Installation have limited the areas that might be used by migratory birds to smaller, patchy areas, and habitat suitability would be considered relatively low.

Bald and Golden Eagles

The bald eagle (*Haliaeetus leucocephalus*) is protected under the BGEPA. It breeds from early October through the end of July and has the potential to occur regionally during the second half of February and briefly during the middle of December (**Appendix A**).

Other Protected Species

A survey for protected and endangered species was last conducted at Sheppard AFB in 2015 (Air Force, 2015b). The Texas horned lizard and Texas kangaroo rat, both state-listed species and SGCN, have been observed on Sheppard AFB; however, the Texas kangaroo rat was not observed during the 2015 survey. The Texas horned lizard prefers open areas with sparse plant cover in arid and semiarid habitats, and commonly occupies areas with loose sandy or loamy soils (TPWD, 2016b). The Texas horned lizard typically breeds in the spring, and the female will lay her eggs in the sand or soil. This species feeds primarily on ants, which are abundant in arid regions of Texas. Habitat for this lizard does exist on Sheppard AFB but is fragmented. The old landfill area in the northwestern corner of the Installation is the primary on-Base location where the Texas horned lizard has been found. Sheppard AFB has no designated habitats of concern, and there are no designated critical habitats in the regional vicinity.

The Sheppard AFB Integrated Natural Resources Management Plan identifies multiple other Texas SGCN as well as several other USFWS BCCs. However, none has been recorded within the ROI (Sheppard AFB, 2022b).

3.8.2.4 Invasive Species

Sheppard AFB is currently in the process of developing an *Invasive Species Management Plan* (Sheppard AFB, 2022b). Recent surveys conducted at the Installation identified seven highly invasive/undesirable plants: Khaki weed (*Alternanthera caracasa*), Johnson grass (*Sorghum halpense*), sandspur (*Cenchrus* spp.), cheatgrass/Japanese brome (*Bromus japonicus*), crab grass (*Digitaria* spp.), puncture vine (*Tribulus terrestris*), and field bindweed (*Convolvulus arvensis*). Through a multi-year grassland restoration plan that began in 2014, Sheppard AFB has established and/or restored more than 500 acres of native grasslands. In 2020–2021, four acres were seeded with sideoats gramma and buffalograss, and over 800 acres were treated with herbicide to control cheatgrass (*Bromus tectorum*) and other invasive plants. These efforts will continue in future years as funding permits (Sheppard AFB, 2022b).

3.8.3 Environmental Consequences

3.8.3.1 Evaluation Criteria

The level of impact on biological resources is based on the following:

- importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource;
- proportion of the resource that would be affected relative to its occurrence in the region;
- sensitivity of the resource to the proposed activities; and
- duration of potential ecological impact.

Adverse impacts on biological resources would occur if the Proposed Action or Alternatives negatively affect species or habitats of high concern over relatively large areas, or if estimated disturbances cause reductions in population size or distribution of a species of high concern.

As a requirement under the ESA, federal agencies must provide documentation that ensures that the agency's proposed actions would not adversely affect the existence of any threatened or endangered species. The ESA requires that all federal agencies avoid "taking" federally threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). Section 7 of the ESA establishes a consultation process with the USFWS that ends with either a "No Effect" determination by the federal agency or a biological opinion from the USFWS that the Proposed Action either would or would not jeopardize the continued existence of a species.

3.8.3.2 Alternative 1 (Preferred Alternative)

Vegetation

The areas designated for proposed project activities under Alternative 1 are generally highly disturbed, developed, or closely maintained. Due to the lack of intact native vegetation in the areas proposed for development and the minimal vegetation clearing associated with construction and demolition activities under Alternative 1, impacts to vegetation would be short term, negligible, and adverse. Project 12 under Alternative 1 would demolish approximately 141,260 ft² of Taxiway A South, which could have long-term, minor, beneficial impacts on vegetation by providing additional area for growth and revegetation.

Wildlife

Avian, reptile, amphibian, and small mammal species may be present on Sheppard AFB in areas with little development. There is limited suitable habitat for wildlife on Sheppard AFB within the proposed project locations for Alternative 1 due to heavy development. The developed portion of Sheppard AFB, in which the projects proposed under Alternative 1 would be located, likely supports relatively common wildlife species such as small mammals. Bats have the potential to roost on some of the buildings scheduled for demolition under this alternative; buildings would be checked for roosting bats prior to demolition. The bat

maternity season is generally from early May through mid to late August. The noise temporarily caused by construction and demolition activities would have short-term, negligible, adverse impacts on wildlife.

Threatened or Endangered Species and Other Protected Species

Habitat for the Texas kangaroo rat is limited to the location of Project 2, which involves the construction of the 20,000-ft² commercial vehicle inspection facility. The Project 2 site has been previously disturbed and is located in a developed area, likely limiting suitable habitat for the Texas kangaroo rat. However, the project area would be examined for potential presence of the Texas kangaroo rat prior to the start of construction. In the event of an unexpected discovery of any kangaroo rats, all construction activities would stop, and the Sheppard AFB Natural Resources Manager would be contacted. The Texas horned lizard occurs in sandy soils with sparse native vegetation cover, which are not present at any project sites under Alternative 1. Therefore, the Air Force has determined that the Proposed Action would be “not likely to adversely affect” threatened or endangered species.

Under Alternative 1, there would be potential for migratory birds to nest in buildings proposed for demolition or renovation; however, all project areas would be checked prior to construction and demolition activities for nesting birds or the presence of migratory species. Per TPWD recommendations, any necessary vegetation clearing associated with construction activities would be scheduled outside of the general migratory bird nesting season. If vegetation clearing during nesting season is unavoidable, nest surveys would be conducted in the proposed project areas no more than five days prior to vegetation clearing activities to ensure that no nests with eggs or young would be disturbed. These recommendations, as well as those on the handling of active nests if discovered, can be found in **Appendix A**. Adverse impacts to migratory birds under Alternative 1 would be expected to be short term and negligible.

No rare or listed plant species are known to grow within the ROI. Most of the areas proposed for development under Alternative 1 are maintained by the Installation and due to the lack of intact native vegetation in these areas, no significant effects to rare or listed vegetation would occur under this alternative.

Invasive Species

The majority of the project sites under Alternative 1 do not contain soil conducive to the establishment of the invasive grasses that have been recorded at Sheppard AFB. Soil disturbance during construction would create potential sites for establishment of invasive plant species. However, most of these sites would be occupied by new buildings or hardscapes (e.g., parking lots) and surrounded by maintained landscaping, thus preventing the establishment of these species. BMPs, such as checking construction sites for the presence of invasive plants, would be employed. If invasive plants are present, mechanically or chemically treating the plants, avoiding areas of native plants, and thoroughly cleaning and inspecting equipment and work clothing before moving off site would lessen the probability of spreading seeds throughout the Installation. With the use of applicable BMPs, adverse impacts due to invasive species would be anticipated to be short term and negligible.

3.8.3.3 *Alternative 2*

Vegetation

Impacts to vegetation under Alternative 2 would be similar to those under Alternative 1; however, the demolition of 141,260 ft² of Taxiway A South under Project 12 in Alternative 1 would not be included in Project 12 under Alternative 2. Alternative 2 would add 197,928 ft² of impervious surfaces compared to 53,762 ft² of impervious surfaces added under Alternative 1, a total difference of 144,166 ft². As a result, no beneficial impacts due to potential revegetation under Project 12 would occur. As with Alternative 1, the majority of the areas where projects would be located under Alternative 2 are already highly or semi-developed. Adverse impacts to vegetation under this alternative would be short term and negligible.

Wildlife

Impacts to wildlife under Alternative 2 would be the same as those under Alternative 1, except for the difference in the amount of construction. Alternative 2 would have a smaller construction footprint than Alternative 1.

Threatened or Endangered Species and Other Protected Species

Impacts to threatened or endangered or other protected species under Alternative 2 would be the same as those under Alternative 1.

Impacts to migratory birds under Alternative 2 would be the same as those under Alternative 1.

Invasive Species

The risk of potential establishment of invasive species under Alternative 2 would be the same as that of Alternative 1.

3.8.3.4 Cumulative Impacts

The Proposed Action, in addition to other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs, would result in negligible impacts to biological resources. Construction activities in the future could have the potential to further reduce the amount of native vegetation and available habitat for wildlife. However, as noted, native vegetation and suitable habitat for wildlife and protected species is highly limited at Sheppard AFB due to the developed nature of the Installation. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to biological resources would occur with implementation of the Proposed Action Alternatives.

3.8.3.5 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects and there would be no impacts to biological resources. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.8.3.6 Best Management Practices and Mitigation Measures

BMPs recommended to reduce potential impacts on biological resources include:

- Enforce a do-not-disturb policy with respect to any newly established migratory bird nests on the Installation.
- Do not remove or relocate active nests of migratory birds left undisturbed to hatch their young or deemed a safety hazard without a permit.
- Check sites for invasive species before beginning construction.
- If invasive species are found, mechanically or chemically treat the plants, avoid areas of native plants, and thoroughly clean and inspect equipment and work clothing before moving off site.

No project-specific mitigation measures are recommended.

3.9 CULTURAL RESOURCES

3.9.1 Definition of the Resource

Cultural resources are defined as any prehistoric or historic district, site, building, structure, artifacts, or object considered important to a culture or community for scientific, traditional, religious, or other purposes.

A number of statutes and regulations that have been enacted at the local, state, and federal levels protect cultural resources and must be considered during the NEPA process. The NHPA, as amended through 2016, and its associated regulations ([36 CFR Part 800](#)) provide for the preservation of cultural resources. The act established the National Register of Historic Places (NRHP), which is a listing of historic properties that are significant to American history and culture and is maintained by the National Park Service (NPS). Sections 106 and 110 of the NHPA set forth the processes federal agencies must follow to manage and protect cultural resources under their care. Section 106 and its implementing regulation require that federal agencies consider the effects of their undertakings on historic properties and define processes for resource identification, significance evaluation, assessment of effects on significant historic properties, and resolution of adverse effects on such properties. Section 110 of the NHPA requires federal agencies to institute programs to identify and evaluate historic resources under their care and to consider all prudent and feasible alternatives to avoid an adverse impact to cultural resources by a proposed undertaking.

Cultural resources are protected and identified under several federal laws and EOs including the *Archaeological and Historic Preservation Act of 1960*, as amended ([54 USC § 300101](#) et seq.), the *American Indian Religious Freedom Act of 1978* ([42 USC § 1996](#)), the *Archaeological Resources Protection Act of 1979*, as amended ([16 USC §§ 470aa–470mm](#)), the *Native American Graves Protection and Repatriation Act of 1990* ([25 USC §§ 3001–3013](#)), EO 13007, *Indian Sacred Sites* and the NHPA. The NHPA requires federal agencies to consider effects of federal undertakings on historic properties prior to deciding or taking an action and integrate historic preservation values into their decision-making process. Federal agencies fulfill this requirement by completing the NHPA Section 106 consultation process, as set forth in 36 CFR Part 800. NHPA Section 106 also requires agencies to consult with federally recognized American Indian tribes with a vested interest in the undertaking. NHPA Section 106 requires all federal agencies to seek to avoid, minimize, or mitigate adverse effects to historic properties ([36 CFR § 800.1\(a\)](#)).

Cultural resources include the following subcategories:

- Archaeological (i.e., prehistoric or historic sites where human activity has left physical evidence of that activity, but no structures remain standing);
- Architectural (i.e., buildings, structures, groups of structures, or designed landscapes that are of historic or aesthetic significance); and
- Traditional Cultural Properties (TCPs) (resources of traditional, religious, or cultural significance to American Indian tribes).

Significant cultural resources are those listed on the NRHP or determined to be eligible for listing. Eligible resources must meet one or more criteria as defined in NHPA 36 CFR § 60.4. These criteria for significance include the following:

1. Associated with events that have made a significant contribution to the broad patterns of our history (Criterion A);
2. Associated with the lives of persons significant in our past (Criterion B);
3. Embody distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); and/or
4. Have yielded or be likely to yield information important in prehistory or history (Criterion D).

In addition to significance, an NRHP-eligible resource must also possess integrity. The NPS defines integrity as “the ability of a property to convey its significance” (NPS, 1997). The integrity of cultural resources is evaluated based on seven aspects: location, design, setting, materials, workmanship, feeling, and association. A property does not necessarily need to possess all seven aspects to retain overall integrity. The resource must possess a sufficient level of integrity to convey its historical significance and meet at least one of the four criteria for significance above. The term “historic property” refers to National Historic Landmarks, NRHP-listed, and NRHP-eligible cultural resources.

The ROI for cultural resources, also referred to as the direct Area of Potential Effects (APE), is the location of each proposed project and a 50-meter buffer around each site. The term indirect APE represents an 800-meter buffer around all proposed projects.

3.9.2 Existing Conditions

Northern Texas has historically played important roles in archaeological reconstructions of culture histories and past lifeways in the ancient US Southwest and Great Plains. There are several Indian tribes in northern Texas: the Comanche, the Kiowa, and the Wichita tribes. The Comanche and Kiowa tribes historically were nomadic populations that relied primarily on hunting and gathering for subsistence, while the Wichita tribe historically consisted of more fixed settlements of farmers that relied on crops such as corn, beans, and squash, but also hunted and gathered for subsistence. The prehistoric and historic cultural periods are described in the Sheppard AFB *Integrated Cultural Resources Management Plan* (Sheppard AFB, 2022d).

The land cover at Sheppard AFB includes a mix of developed areas and natural landscapes. Developed areas include the buildings, runways, and other infrastructure associated with the Installation, as well as commercial and residential properties in the surrounding area. The natural landscapes in and around Sheppard AFB include grasslands, forests, and wetlands, as well as the nearby Wichita River and its associated riparian zones. Much of the natural landscape on Sheppard AFB has been altered or modified over time due to agricultural activities and construction associated with military infrastructure. The area surrounding the Installation is also prone to periodic droughts, which can have a significant impact on local land cover and archaeological resources.

3.9.2.1 Archaeological Sites

One archaeological survey, which included a combination of pedestrian survey and archaeological shovel testing, was conducted in 1993; no archaeological resources were identified in the 1993 survey (Devore, 1993). No previously recorded archaeological sites are located within the direct APE or indirect APE for the proposed projects (Sheppard AFB, 2022d).

3.9.2.2 Historic Architectural Properties

Sheppard AFB has evaluated on-Base structures that are 50 years or older to determine eligibility for listing on the NRHP three times: in 1993, 2002, and 2012. Three buildings on the Installation were determined to be eligible for listing on the NRHP: the Kell Field Air Terminal Building, Building 2560, and the Alert Apron, all of which are located within the indirect APE for projects associated with the Proposed Action, but are outside of the direct APE. All three eligible historic structures are recorded as being significant Cold War properties. The Kell Field Air Terminal Building was constructed in 1928 and is located just north of the intersection of Missile Road and Drivers Road, approximately 960 feet west of the direct APE. Both Building 2560 and the Alert Apron were constructed in 1960 and are located approximately 2,000 feet west of the direct APE, but within the indirect APE.

3.9.2.3 Traditional Cultural Properties

In archaeology, TCPs are considered important because they can provide valuable insights into the cultural history and traditions of a particular community. They can also be important for understanding how communities interacted with the landscape over time and how they adapted to changing environmental

conditions. TCPs may include traditionally used plants and animals, trails, and certain geographic areas. Types of resources that have been specifically identified in recent studies include, but are not limited to, rock art sites; “power” rocks and locations; medicine areas; and landscape features such as specific peaks or ranges, hot springs, meadows, valleys, and caves. No TCPs, sacred sites, human remains, associated grave goods, unassociated grave goods, sacred objects, or objects of cultural patrimony have been identified or recovered at Sheppard AFB (Sheppard AFB, 2022d).

3.9.3 Environmental Consequences

3.9.3.1 Evaluation Criteria

Adverse impacts on cultural resources would occur if the Proposed Action or Alternatives results in the following:

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

For the purposes of this PEA, an impact is considered significant if it alters the integrity of an NRHP-listed, eligible, or potentially eligible resource, or potentially impacts TCPs.

3.9.3.2 Alternative 1 (Preferred Alternative)

By letter dated 22 March 2023, the Air Force initiated Section 106 consultation regarding the Proposed Action with the Texas SHPO and the Texas Historical Commission (THC).

Archaeological Sites

Under Alternative 1, new construction, demolition and renovation actions would occur within previously developed areas (**Figure 3-7**). Drainage repairs and grading would occur on the eastern portion of the Installation near the existing runway area. No known archaeological sites are located within the vicinity of any of the construction areas associated with Alternative 1. Although no archaeological probability mapping has yet been completed at Sheppard AFB, the extensive development and disturbed soils found within both the direct and indirect APEs, most of which are categorized as Urban/Fill soil (see **Figure 3-3**), would suggest low to medium probability for intact archaeological resources to be present (USDA NRCS, 2022b). No significant effects to cultural resources would be expected to occur with implementation of Alternative 1.

During construction, the Air Force would ensure standard operating procedures (SOPs) and any other applicable measures or provisions of the Sheppard AFB Integrated Cultural Resources Management Plan are incorporated into the Proposed Action. For example, should any excavations unearth undetected or unknown archaeological deposits, the procedures outlined in SOP-6, *Dealing with Discoveries*, would be invoked. In the event of a discovery, SOP-6 requires construction crews to immediately halt work in the area and notify the Sheppard AFB Cultural Resources program of the situation. Further, under SOP-5, *Archaeological Resource Protection Act Compliance*, any American Indian communities that may consider a site to be of cultural or religious importance would receive a 30-day notice for making such a determination (Sheppard AFB, 2016).

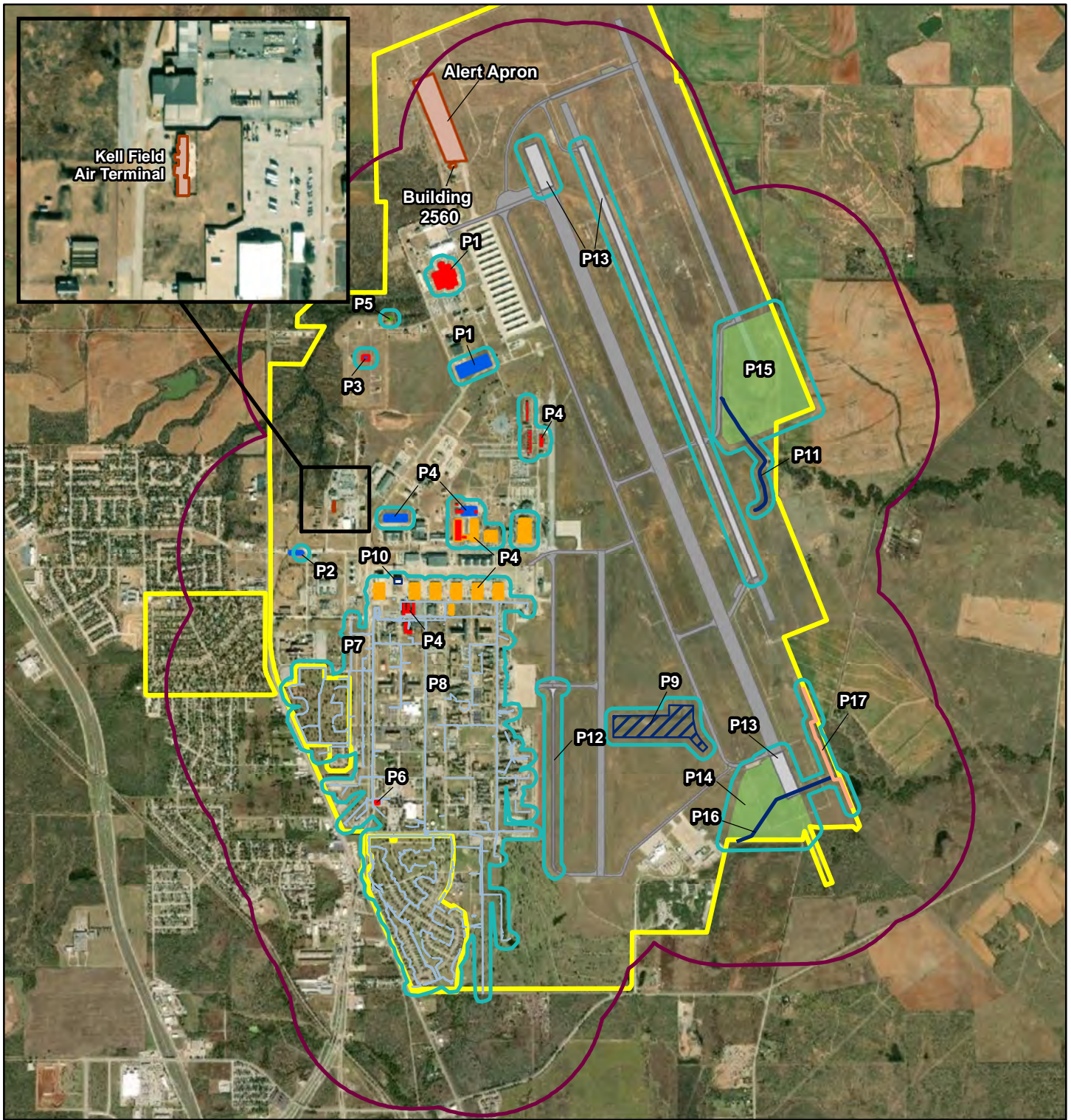
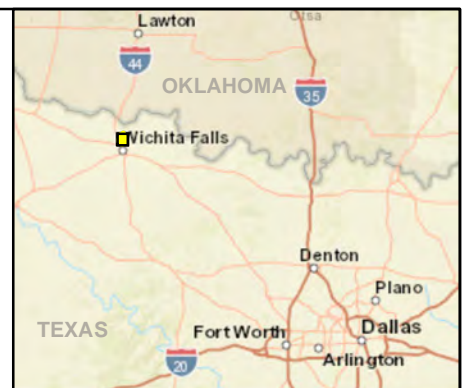


FIGURE 3-7
Cultural Resources – Alternative 1

- | | | |
|----------------------|------------------------|-----------------------|
| Drainage Line | Installation Boundary | Renovation |
| Electrical Lines | Drainage Repair Area | Airfield Pavement |
| Fence | Additions to Buildings | Airfield Project Area |
| Direct APE (50 m) | Construction | Grading Area |
| Indirect APE (800 m) | Demolition | Historic Structure |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



Historic Architectural Properties

In addition to the three eligible properties, the demolition or renovation under Alternative 1 would have the potential to impact the following six buildings that have yet to be surveyed for listing on the NRHP:

- Demolition
 - Fort Sill National Bank (Building 200) in the Community Services District constructed in 1962
 - Mambretti Hall Power Pro Training Building (Building 2001) in the Technical Training District constructed in 1956
 - Civil Engineering Training Storage Building (Building 2014) in the Technical Training District constructed in 1956
- Renovation
 - Aircraft Hydraulics Training Building (Building 1010) in the Technical Training District constructed in 1952
 - Kearby Hall Healthcare Sciences Training Building (Building 1900) in the Technical Training District constructed in 1966
 - Bernard Hall Civil Engineering Training Building (Building 1921) in the Technical Training District constructed in 1972

The demolition of Building 920 (built in 1954) and renovation of Buildings 1020, 1040, 1060, 1080, and 1090 (all built in 1941) would not adversely impact cultural resources, as they were previously surveyed and determined not eligible for listing on the NRHP.

Thirty-six buildings within the direct and indirect APEs evaluated for the 2012 survey have since crossed the 50-year threshold and would need to be surveyed prior to the Proposed Action to determine if they are eligible for listing on the NRHP (**Table 3-11, Figure 3-8**).

Previously conducted cultural resources surveys within the direct and indirect APE under Alternative 1 found no NRHP-eligible resources. However, there are structures within the direct and indirect APE that have not been previously surveyed, as well as structures that have aged past the 50-year threshold since the last survey. To ensure that there are no historic structures adversely affected, all structures 50 years or older should be treated as NRHP-eligible until an eligibility determination is made. A cultural resources survey for Sheppard AFB is planned for the future, though timing has not yet been decided. Therefore, implementation of Alternative 1 would require a survey to be conducted prior to the start of any construction, renovation, or demolition activities to determine if any historic structures are eligible for inclusion on the NRHP. Per this PEA, Section 106 consultations would occur at a later date on a project-by-project basis prior to beginning construction, demolition, or renovation activities.

Traditional Cultural Properties

Alternative 1 would result in no impacts to TCPs, as none are known to be present on Sheppard AFB. However, in the event of an unexpected discovery of an archaeological resource during any subsurface excavation associated with construction or demolition, all work activity would cease until an investigation is completed.

**Table 3-11
 Buildings 50 Years or Older Since 2012**

Building Number	Year Built	APE
195	1973	Direct
237	1971	Direct
312	1966	Direct
318	1970	Direct
430	1969	Direct
450	1968	Direct
471	1967	Direct
649	1970	Direct
811	1963	Direct
845	1963	Direct
987	1968	Direct
992	1971	Direct
1011	1972	Direct
1015	1971	Indirect
1081	1969	Direct
1200	1963	Indirect
1202	1970	Indirect
1365	1967	Direct
1932	1967	Direct
1959	1970	Indirect
1960	1966	Indirect
2010	1963	Direct
2119	1969	Indirect
2161	1968	Indirect
2208	1965	Indirect
2323	1970	Direct
2333	1968	Indirect
2402	1973	Indirect
2412	1973	Indirect
2532	1969	Indirect
2534	1969	Indirect
2536	1969	Indirect
2538	1969	Indirect
2559	1970	Indirect
2565	1967	Indirect
4491	1965	Direct

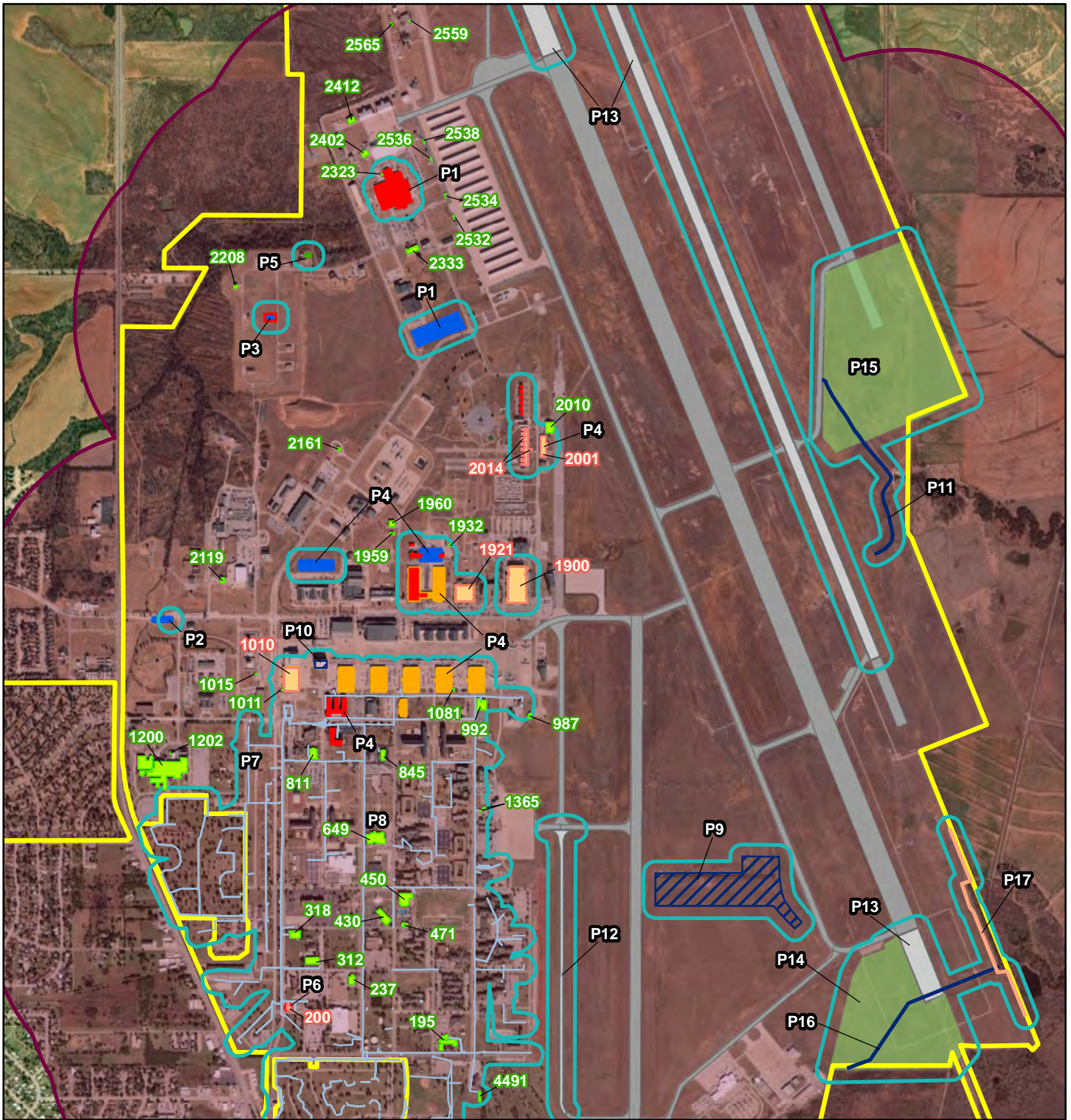
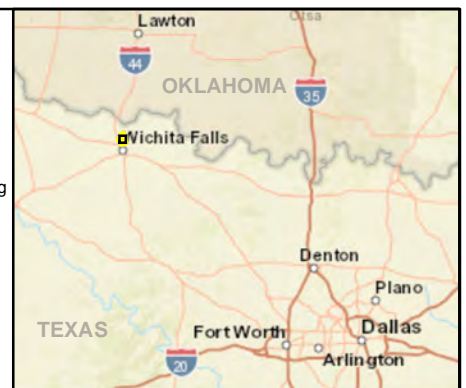


FIGURE 3-8
Buildings 50 Years and Older – Alternative 1

- | | | | |
|-------------------|------------------------|-----------------------|------------------------------|
| Drainage Line | Installation Boundary | Demolition | Grading Area |
| Electrical Lines | Drainage Repair Area | Renovation | Building Needing Resurfacing |
| Fence | Additions to Buildings | Airfield Pavement | Indirect APE (800 m) |
| Direct APE (50 m) | Construction | Airfield Project Area | Unsurveyed Building |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



3.9.3.3 Alternative 2

By a letter dated 22 March 2023, the Air Force initiated Section 106 consultation regarding the Proposed Action with the Texas SHPO and the THC.

Archaeological Sites

Under Alternative 2, new construction, demolition and renovation actions would occur within previously developed areas (**Figure 3-9**). As with Alternative 1, there would be no impacts to archaeological sites under Alternative 2. In the event of inadvertent discovery of archaeological resources, SOPs outlined under Alternative 1 would be followed.

Historic Architectural Properties

In addition to the three eligible properties, the demolition or renovation under Alternative 2 would have the potential to impact the following four buildings that have yet to be surveyed for listing on the NRHP:

- Demolition
 - Fort Sill National Bank (Building 200) in the Community Services District constructed in 1962
 - Mambretti Hall Power Pro Training Building (Building 2001) in the Technical Training District constructed in 1956
 - Civil Engineering Training Storage Building (Building 2014) in the Technical Training District constructed in 1956
- Renovation
 - Bernard Hall Civil Engineering Training Building (Building 1921) in the Technical Training District constructed in 1972

The renovation of Buildings 920 (built in 1954), 1040, 1060, 1080, and 1090 (all built in 1941) would not impact cultural resources, as they were previously surveyed and determined not eligible for listing on the NRHP.

Previously conducted cultural resources surveys within the direct and indirect APE under Alternative 2 found no NRHP-eligible resources. However, there are structures within the APE that have not been previously surveyed, as well as 36 structures that have aged past the 50-year threshold since the last survey (see **Table 3-11** above and **Figure 3-10**). To ensure that there are no historic structures adversely affected, all structures 50 years or older should be treated as NRHP-eligible. A cultural resources survey for Sheppard AFB is planned for the future, though exact timing has not yet been decided. Therefore, implementation of Alternative 2 would require a cultural resources survey to be conducted prior to the start of any construction, renovation, or demolition activities to determine if any historic structures are eligible for inclusion on the NRHP. Per this PEA, Section 106 consultations would occur at a later date on a project-by-project basis prior to beginning construction, demolition, or renovation activities.

Traditional Cultural Properties

As with Alternative 1, there would be no impacts to TCPs, as none are known to be present on Sheppard AFB. In the event of an unexpected discovery of an archaeological resource during any subsurface excavation associated with construction or demolition, all work activity would cease until an investigation is completed.

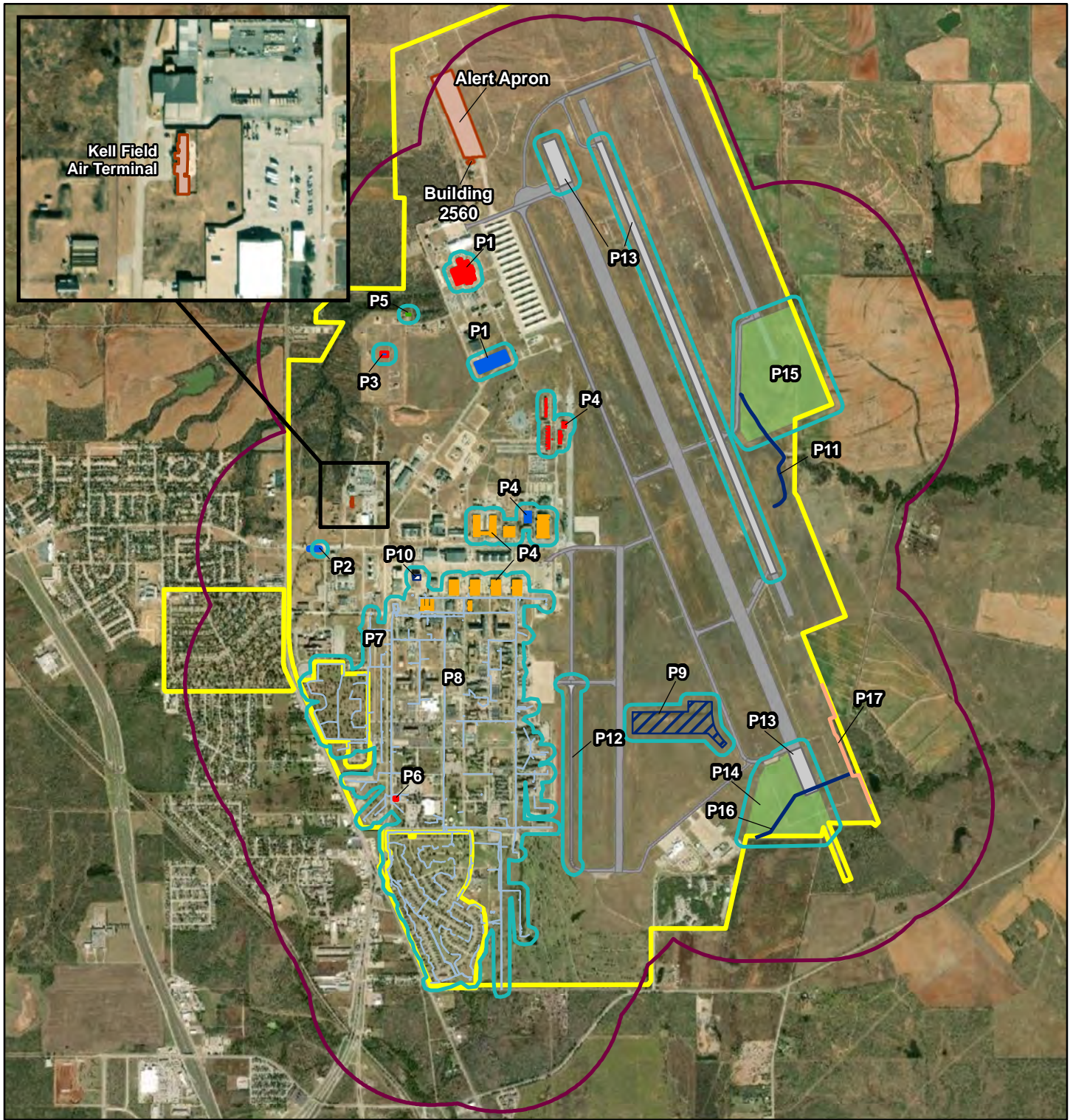


FIGURE 3-9
Cultural Resources – Alternative 2

- | | | |
|----------------------|------------------------|-----------------------|
| Drainage Line | Installation Boundary | Renovation |
| Electrical Lines | Drainage Repair Area | Airfield Pavement |
| Fence | Additions to Buildings | Airfield Project Area |
| Direct APE (50 m) | Construction | Grading Area |
| Indirect APE (800 m) | Demolition | Historic Structure |



Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



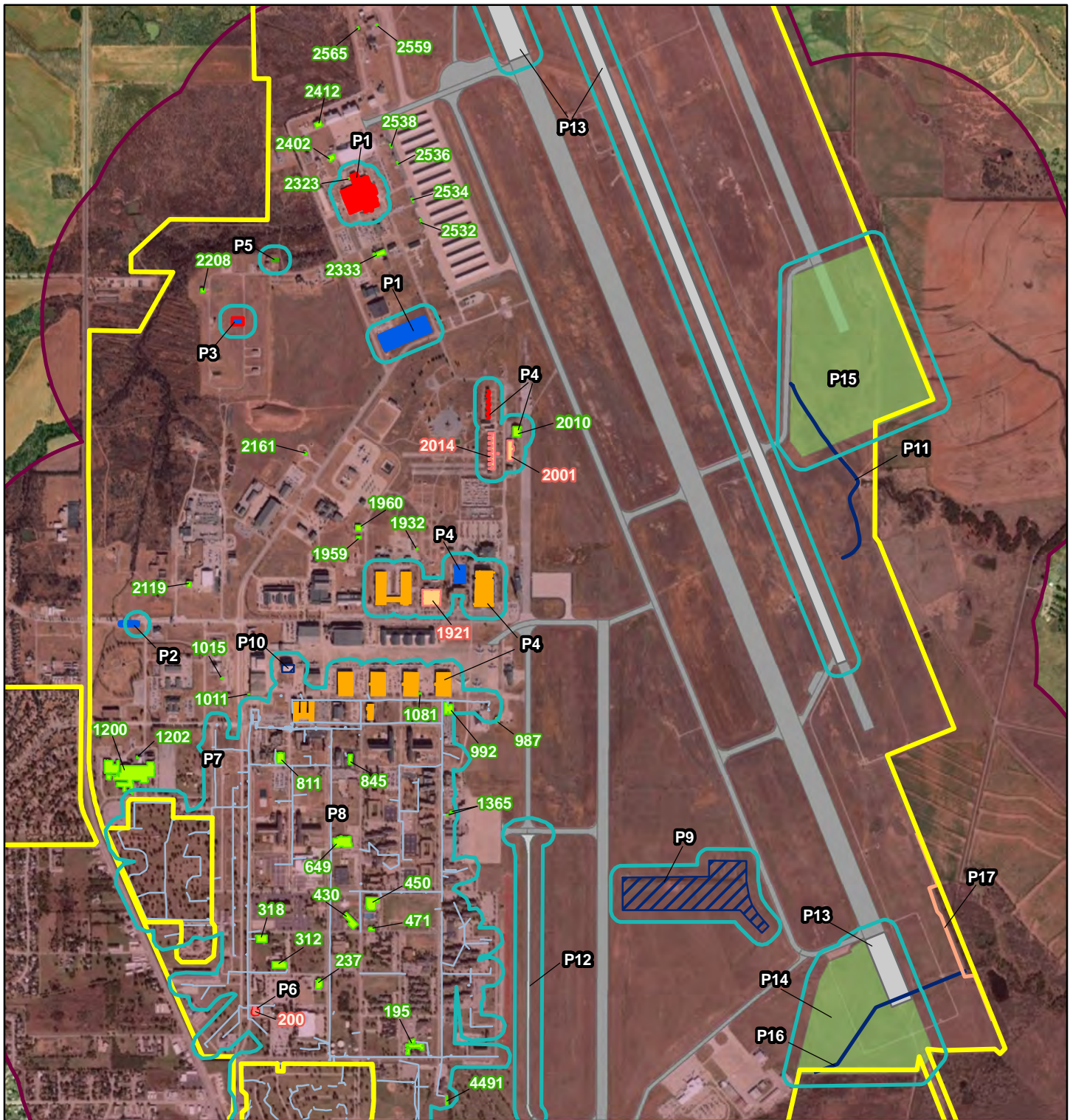
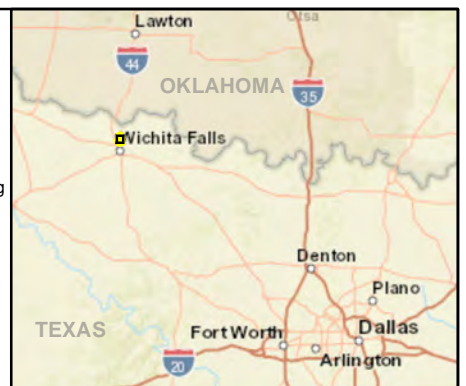


FIGURE 3-10
Buildings 50 Years and Older – Alternative 2

- | | | | |
|-------------------|------------------------|-----------------------|------------------------------|
| Drainage Line | Installation Boundary | Demolition | Grading Area |
| Electrical Lines | Drainage Repair Area | Renovation | Building Needing Resurveying |
| Fence | Additions to Buildings | Airfield Pavement | Indirect APE (800 m) |
| Direct APE (50 m) | Construction | Airfield Project Area | Unsurveyed Building |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



3.9.3.4 Cumulative Impacts

Additional facility construction, renovation, or demolition in the future would need to be evaluated for impacts to cultural resources and would require consultation with federally recognized Tribes and the SHPO. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to cultural resources would occur with implementation of the Proposed Action Alternatives.

3.9.3.5 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects and no impacts to cultural resources would occur. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.9.3.6 Best Management Practices and Mitigation Measures

No BMPs are recommended to reduce potential impacts to cultural resources beyond adherence to the appropriate permits and regulations required for implementation of the Proposed Action and those outlined in the Sheppard AFB Integrated Cultural Resources Management Plan.

No project-specific mitigation measures are recommended.

3.10 NOISE

3.10.1 Definition of the Resource

Noise refers to undesirable or unwanted sound that interferes with verbal communication and hearing. Sound pressure level, described in decibels, is used to quantify sound intensity. Sound level measurements used to characterize sound levels sensed by the human ear are designated as “A-weighted” decibels (dBA).

The *Noise Control Act of 1972* ([Public Law 92-574](#)) directs federal agencies to comply with applicable federal, state, and local noise control regulations. In 1974, the USEPA provided information suggesting continuous and long-term noise levels greater than 65 dBA are normally unacceptable for noise-sensitive receptors such as residences, schools, churches, and hospitals.

The ROI for noise is Sheppard AFB and adjacent communities.

3.10.2 Existing Conditions

The primary driver of noise at Sheppard AFB is aircraft operations due to the flying mission of the Installation. The main sources of noise on airfields are flight operations, which include take-offs, landings, touch-and-go operations, and engine maintenance run-ups (City of Wichita Falls, 2014). Sheppard AFB averages approximately 276 daily flight operations (S. Henneke, personal communication, July 7, 2023). An operation is defined as a single takeoff or landing. Closed patterns consist of two operations—one departure and one arrival (e.g., two closed pattern circuits consist of four total operations). Sheppard AFB has three Class B runways, 15L/33R, 15C/33C, and 15R/33L, and one Class A runway, 18/36. Class B runways are primarily intended for large, high-performance aircraft and Class A runways are primarily intended for small, lightweight aircraft (Sheppard AFB, 2011). The 80 FTW at Sheppard AFB has a total of 201 aircraft. Flight operations occur 240 days per year, and the 80 FTW conducts more than 64,000 hours of flight time annually. This abundance of aircraft operations produces noise contours, which are mapped lines that represent equal levels of noise exposure, that extend outside of Sheppard AFB. Noise contours,

when overlaid with local land uses, can help identify areas of incompatible land uses and can assist in planning for future development. Noise compatible land use planning is a community planning method intended to protect the public's health, safety, and welfare.

The Air Installation Compatible Use Zone (AICUZ) study for Sheppard AFB was conducted in 2011 to reflect the replacement of the T-37 aircraft with the T-6 aircraft. This change in aircraft greatly reduced Sheppard AFB's noise footprint on surrounding communities. As a result of the AICUZ study, the noise contours ranging from 65 to 69 dB to 80+ dB decreased in total off-Base area from 10,353 acres to 3,988 acres. This was a drop of 61 percent of the total land included in the 1999 AICUZ study (Sheppard, AFB, 2011). The 2011 AICUZ study is updated every two years, and these noise contours currently remain up to date.

The Air Force uses the Day-Night Average Sound Level (DNL) to describe the cumulative noise exposure that results from all aircraft operations. DNL is a standard noise metric created by USEPA to describe the effects of noise on humans. There are currently less than five acres of residential land within the noise contours of 65 dB or greater (City of Wichita Falls, 2014). The AICUZ program's compatibility guidelines encourage noise-sensitive land uses to be placed outside of high-noise zones and discourages residential uses. Residential areas are compatible if they are developed at densities less than one dwelling unit per acre and if they utilize appropriate noise level reduction design or construction techniques. The only potentially incompatible existing land uses within the noise contours for Sheppard AFB, single-family residential units to the north of Sheppard AFB in the Cashion Community, and to the south of the Installation in unincorporated Wichita County and in Wichita Falls, are within the DNL 65-69 dB noise contour.

In addition to aviation noise, day-to-day operations activities, maintenance, industrial functions associated with airfield operations, and ground equipment and vehicular transportation, also contribute to the noise environment at Sheppard AFB. Aircraft maintenance may require powered engine maintenance runs. The locations for aircraft maintenance engine runup have been established in specific areas to minimize noise for people on Sheppard AFB, as well as in the surrounding communities.

3.10.3 Environmental Consequences

3.10.3.1 Evaluation Criteria

When evaluating noise effects, several aspects are examined:

- the degree to which noise levels generated by training and operations, as well as construction, demolition, and renovation activities, would be higher than the ambient noise levels;
- the degree to which there would be hearing loss and/or annoyance; and
- the proximity of noise-sensitive receptors (e.g., residences, schools, hospitals, parks) to the noise source.

An environmental analysis of noise includes the potential effects on the local population and estimates the extent and magnitude of the noise generated by the Proposed Action and Alternatives.

3.10.3.2 Alternative 1 (Preferred Alternative)

Proposed projects under Alternative 1 would include construction and demolition activities that would occur entirely within the boundaries of Sheppard AFB. The affected environment for noise effects from the Proposed Action or Alternatives and ongoing operations is focused within 0.5 miles to one mile of the proposed projects.

Noise modeling results indicate that existing DNLs range from 65 dBA DNL to 80+ dBA across Sheppard AFB and within the vicinities of the proposed projects (Sheppard AFB, 2011). Noise associated with the operation of construction equipment is generally short term, intermittent, and localized, with the loudest machinery typically producing peak sound pressure levels ranging from 86 to 95 dBA at a 50-foot distance from the source (**Table 3-12**).

Table 3-12
Peak Sound Pressure Level of Construction Equipment from 50 Feet

Equipment	Sound Pressure Level (dBA)
Bulldozer	85
Scraper	85
Front Loader	80
Backhoe	80
Grader	85
Crane	85

Source: Federal Highway Administration, 2006
dBA = A-weighted decibel

However, construction noise does not typically generate a predicted noise exposure of 65 dBA DNL or greater even at extremely high rates of operation because the equipment itself does not generate noise that would produce a 65-dBA DNL when averaged over a year. Additionally, adherence to standard Air Force Occupational Safety and Health regulations that require hearing protection along with other personnel protective equipment and safety training would minimize the risk of hearing loss to construction workers. Therefore, noise associated with construction and demolition projects proposed under Alternative 1 would not cause any significant direct or indirect impacts on noise-sensitive receptors. There would be no operational increases in noise resulting from the implementation of Alternative 1.

3.10.3.3 Alternative 2

Alternative 2 would involve fewer construction and demolition activities when compared to Alternative 1. Similarly, noise associated with construction and demolition projects proposed under Alternative 2 would not result in any significant direct or indirect impacts on noise-sensitive receptors.

3.10.3.4 Cumulative Impacts

As noise levels at Sheppard AFB would continue to be driven by aircraft operations, increases in noise due to the Proposed Action would be expected to be minor to imperceptible when combined with noise from these other actions. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to the noise environment would occur with implementation of the Proposed Action Alternatives.

3.10.3.5 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects and there would be no changes to noise beyond baseline conditions. No significant impacts on noise-sensitive receptors would occur. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.10.3.6 Best Management Practices and Mitigation Measures

No BMPs are recommended to reduce potential impacts to the noise environment beyond adherence to the appropriate regulations required for implementation of the Proposed Action.

No project-specific mitigation measures are recommended.

3.11 INFRASTRUCTURE (INCLUDING TRANSPORTATION AND UTILITIES)

3.11.1 Definition of the Resource

Infrastructure consists of systems and structures that enable a population in a specified area to function. Infrastructure is wholly man-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as developed. The availability of infrastructure and its capacity to support more users, including residential and commercial expansion, are generally regarded as essential to the economic growth of an area.

Transportation refers to the system of roadways, highways, and transit services in the vicinity of the Installation that potentially could be affected by a proposed action.

Utilities include electrical, potable water, sanitary sewage/wastewater, stormwater conveyance, and communications systems. Solid waste management primarily relates to landfill capacity for disposal of non-hazardous solid waste (e.g., construction waste) generated in an area or by a population. Stormwater infrastructure includes the man-made conveyance systems that function together with natural drainages to collect and control the rate of surface runoff during and after a precipitation event. In urbanized areas, stormwater that is not discharged to a waterbody is conveyed to sanitary sewers (also considered utilities), which are systems that collect, move, and treat liquid waste prior to its discharge back into the environment.

The ROI for infrastructure is Sheppard AFB and areas adjacent to the Installation. The components of this resource area are discussed below.

3.11.2 Existing Conditions

Transportation

Sheppard AFB is located approximately six miles south of the Oklahoma border, adjacent to the city of Wichita Falls, in Wichita County, Texas. State Highway 240 runs north to south along the western boundary of the Installation and through Wichita Falls, and Interstate 44 runs north to south to the west of the Installation. The Wichita Falls Metropolitan Area Transportation System is run by the local Metropolitan Planning Organization whose mission is to coordinate regional transportation planning between the State of Texas, Wichita County, and City of Wichita Falls. The Wichita Falls Transit System, Falls Ride, provides public transportation to residents of Wichita Falls. Although the Transit System does not offer service on Sheppard AFB, it provides services up to the Installation. On the Installation, there are shuttle buses running on designated routes that provide service to airmen. The Installation can be accessed via three gates: the Main Gate (Sheppard Road Gate), the Hospital Gate, and the Missile Road Gate (**Figure 1-2**). The Hospital Gate is normally closed and only available for special events.

The existing road network on Sheppard AFB consists of approximately 32 miles of asphalt-paved roads and streets. The roads are generally laid out in a grid pattern, except for Bridwell Road (formerly Kell Field runway), which runs diagonally from Missile Road to the northern portion of the airfield. Several blocks south of Missile Road, Ninth Avenue runs in an east-to-west direction and divides the Installation into two distinct north and south sections. Primary roads in the northern half of the Installation include Avenues D and E, Bridwell Road, and Missile Road (west of its intersection with Avenues D and E). Secondary roads that provide access to the north include Avenue H, Avenue J, Tenth Avenue, Missile Road (east of its intersection with Avenues D and E), and 21st Avenue. Primary roads in the southern half of the Installation include Avenues D and E, Avenue J, First Avenue, and Ninth Avenue. Secondary roads that provide access to the south include Nehls Boulevard, Falcon Boulevard, and Avenue H.

Personal vehicles are the preferred mode of transportation in the region with an estimated 77 percent of Wichita Falls area commuters traveling to work alone in a private vehicle. There is sufficient parking on the Installation to meet current and future mission needs (Sheppard AFB, 2016).

Electricity and Natural Gas

Oncor owns and operates the electrical distribution system on the Installation through a privatized agreement. While the existing electrical system meets current mission needs, some of the infrastructure is outdated, with overhead electrical lines built in the 1940s-1950s.

Natural gas is provided to the Installation by Atmos via a main feed that enters through the south side of the Installation. The system consists of 26 miles of buried piping that distributes natural gas to approximately 275 service connections. The natural gas system provides adequate supply and meets current and future mission needs (Sheppard AFB, 2016).

Solid Waste

Sheppard AFB utilizes the Iles-Buffalo Creek Regional Landfill and City of Wichita Falls Landfill. The Iles-Buffalo Creek Landfill is projected to have capacity through 2111 and the City of Wichita Falls Landfill is projected to have capacity through 2277 (USEPA, 2023b). There is a recycling center on the Installation that receives recyclables and routes them through a Qualified Recycling Program for recycling or diversion (Sheppard AFB, 2022c).

Potable Water Supply

Sheppard AFB purchases potable water from the City of Wichita Falls and it is provided via two metered entry points. The City's water supply comes from various local reservoirs: Lake Kickapoo, Lake Arrowhead, and Lake Kemp (Sheppard AFB, 2016). Wichita Falls is supplementing its water supply with the construction of a potable water reuse plant that will treat and pump waste material back into Lake Arrowhead to maintain the surface water level (City of Wichita Falls, 2018). There is adequate water supply to meet current and future mission needs at Sheppard AFB.

Wastewater and Stormwater

Wastewater treatment at Sheppard AFB is provided by the City of Wichita Falls wastewater treatment facility. The wastewater collection system on the Installation is largely gravity-fed with two outfall locations: one 15-inch pipe on the western side of the Installation and one 24-inch pipe on the eastern boundary of the Installation. There are also two small on-site septic tank/absorption systems. Approximately 80 percent of the Installation's wastewater flows to the River Road Publicly Owned Treatment Works south of the Installation; the remaining 20 percent flows to the Northside Publicly Owned Treatment Works. The sewage and wastewater system on the Installation is sufficient to meet current and future mission needs (Sheppard AFB, 2016).

Stormwater that originates on Sheppard AFB drains to three primary outfalls via impervious and pervious conveyances throughout the Installation. During high-intensity rainfall events, water will collect on portions of the Installation in the vicinity of the airfield. Drainage issues are present near the runways and there is a need for subsurface drainage as well as repairs to inlets on the south end of Overruns 15R/33L.

Because standing water attracts insects and birds, areas where water collects (particularly near the airfield) are routinely managed via filling, leveling, and reseeding with grass. To address these same concerns, the Installation continues to replace open-surface drains with underground conveyances. Covered storm drains, catch basins, and outfalls are also routinely maintained to address known or potential stoppages, breaks, and washouts.

Communications

The communication system on Sheppard AFB consists of copper telephone feeder and fiber optics cabling. There is a single point of entry for communications at the main gate, with plans for the addition of a second point of entry. The communication system is in good condition and is sufficient to meet current and future mission needs (Sheppard AFB, 2016).

3.11.3 Environmental Consequences

3.11.3.1 Evaluation Criteria

Impacts to infrastructure from the Proposed Action or Alternatives are evaluated for their potential to disrupt or improve existing levels of service, increase energy or water consumption, and exceed the capacity of sanitary sewer and solid waste management systems.

Adverse transportation impacts would occur if the Proposed Action or Alternatives creates a substantial increase in traffic that causes a decrease in the level of service, a substantial increase in the use of street systems or mass transit, or if on-Base parking needs could not be met.

Adverse impacts to utilities would occur if the Proposed Action or Alternatives creates a demand that exceeds the existing supply capacity or required services in conflict with adopted plans and policies for the area.

3.11.3.2 Alternative 1 (Preferred Alternative)

Transportation

The proposed projects under Alternative 1 would have long-term, minor, beneficial impacts to transportation on Sheppard AFB due to the proposed increased street lighting under Project 8 (**Table 2-2**). Additionally, the construction of a permanent Commercial Vehicle Inspection Facility with the capacity to meet demand under Project 2 would improve the flow of diverted commercial traffic and open capacity at other Access Control Points on Sheppard AFB for daily commuters, creating a long-term, minor, beneficial impact to the Installation.

Construction projects would have short-term, minor, adverse impacts to traffic near the Installation; however, local and regional roadways would be able to accommodate construction-related traffic. Minor delays would occur in the immediate vicinity of construction and demolition activities but impacts to roadway capacity or condition would not be discernible. Any increase in personnel, traffic, or equipment would be temporary during the construction period.

Electricity and Natural Gas

Under Alternative 1, Projects 7 and 8 would repair electrical infrastructure on the Installation (see **Figure 2-1, Table 2-2**). This would include moving overhead electric lines underground to protect system components against the weather. These projects would create a more reliable system and would have a long-term, moderate, beneficial impact on the Installation's electrical infrastructure.

Energy efficient construction of new buildings consistent with EO 13693, *Planning for Federal Sustainability in the Next Decade* could decrease energy consumption, and demolition of outdated and inefficient buildings would decrease energy demand. Energy-smart metering would be installed where required under Project 8. While net changes in long-term electrical or natural gas demand would be minimal, energy efficient construction, demolition of older, inefficient buildings, and introduction of energy-smart metering would have long-term, moderate, beneficial impacts on electricity and natural gas consumption.

The risk of potential short-term disruptions to electrical or natural gas service within the project areas during construction and demolition activities would be minimized through project planning. Disruptions could occur from temporary service interruptions during disconnections required for demolition, rerouting of overhead or underground service lines, or installation of connections to new buildings. Adverse impacts to electricity and natural gas due to disruptions would be short term and minor.

Solid Waste

Short-term, minor, adverse impacts on solid waste management would occur with construction and demolition projects under Alternative 1. The USEPA guidance on estimating solid waste from construction and demolition projects indicates that approximately 4.39 pounds (lbs)/ft² of debris would be generated from construction activity, and approximately 158 lbs/ft² would be generated from the demolition of existing facilities; this formula can be applied to the construction/demolition of both buildings and impervious surfaces (USEPA, 2009). Using this formula, solid waste generated from all construction and demolition projects under Alternative 1 would be anticipated at 1,284 tons and 42,159 tons, respectively. Contractors would be required to comply with federal, state, and local regulations for the collection and disposal of solid waste generated under Alternative 1, and all solid waste generated would be collected and transported off of the Installation for disposal or recycling in accordance with AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*. The proposed projects would take place over a period of one to nine years; therefore, the annual volume of solid waste would be reduced relative to the scenario of all demolitions occurring at the same time. The two landfills utilized by the Installation have sufficient capacity to accommodate additional waste generated at Sheppard AFB (USEPA, 2023b).

Potable Water Supply

There would be short-term, negligible, adverse impacts on the potable water supply system during construction and demolition when existing lines would be connected to new buildings or capped as appropriate. New buildings would increase the demand on the potable water supply system; however, the cessation of operations in demolished buildings would decrease said demand. Changes in overall demand would be minimal, and the potable water supply system has sufficient capacity to meet new demands.

Wastewater and Stormwater

There would be short-term, negligible, adverse impacts on the sanitary sewer and wastewater treatment system during construction and demolition when existing lines would be connected to new buildings or capped as appropriate. The operation of the new buildings would increase the demand on the sanitary sewer and wastewater treatment system; however, the cessation of operations in demolished buildings would decrease said demand. Overall changes in demands would be minimal, and the sanitary sewer and wastewater treatment system has sufficient capacity to meet new demands.

Alternative 1 includes seven projects that would impact stormwater: Project 9, which would bury drainage piping at the runways, Project 10, which would install a drainage system at the GITA paint shelter, Project 11, which would repair drainage systems on the southeast end of the airfield, Project 13, which would provide subsurface drainage at the runways, and Project 16, which would repair and replace storm drainage piping and drop inlets at the runways. Projects 14 and 15 would improve grading near the airfield and would have a beneficial impact to stormwater on the Installation (**Figure 2-1, Table 2-2**). Overall, these improvements would have a long-term, minor, beneficial impact on the Installation's stormwater drainage capabilities.

Communications

There could be short-term, negligible, adverse impacts to the communications system from disruptions during construction and demolition activities. These disruptions could result from temporary service interruptions during disconnections for demolition, rerouting of above- or belowground service lines, or installing connections to new buildings. The risk of these impacts would be minimized through project planning. There would be no long-term, adverse impacts to the communications system on Sheppard AFB.

There would be long-term, minor, beneficial impacts to the transportation system, electrical system, and stormwater system under Alternative 1. There would be no impact to the natural gas, sewer, solid waste management, potable water supply, or communications systems.

3.11.3.3 Alternative 2

Transportation

Impacts to transportation under Alternative 2 would be the same as those under Alternative 1 except for those described due to increased street lighting. Project 8 would not include street light improvements under Alternative 2; therefore, no beneficial impacts in relation to street lighting would occur. There would be long-term, minor, beneficial impacts to transportation due to construction of a permanent Commercial Vehicle Inspection Facility.

Electricity and Natural Gas

Under Alternative 2, Projects 7 and 8 would not include smart metering and would only replace overhead lines, not move them underground (**Figure 2-2, Table 2-3**). This would leave the lines unprotected from weather and would not result in the same beneficial impacts as Projects 7 and 8 under Alternative 1. Repair and replacement of aging electrical system components, energy efficient construction, and demolition of older, inefficient buildings would result in long-term, minor, beneficial impacts to the Installation's electrical and natural gas systems. Any short-term, minor disruptions to electrical or natural gas service within the project areas during construction and demolition activities would be managed as stated under Alternative 1.

Solid Waste

Under Alternative 2, construction and demolition activities would generate solid waste in the form of construction debris. Construction projects generate approximately 4.39 lbs/ft² of debris from construction activity and approximately 158 lbs/ft² of debris from demolition projects (buildings and impervious surfaces) (USEPA, 2009). Using this formula, solid waste generated from all construction and demolition projects under Alternative 2 would be anticipated at 976 tons and 19,710 tons, respectively. As the three landfills utilized by Sheppard AFB have sufficient capacity to accommodate additional waste produced by the Installation, the projects included under Alternative 2 would result in short-term, minor, adverse impacts to solid waste management.

Potable Water Supply

Impacts to potable water supply under Alternative 2 would be the same as those under Alternative 1.

Wastewater and Stormwater

Impacts to sewage and stormwater systems under Alternative 2 would be the same as those under Alternative 1.

Communications

Impacts to communications under Alternative 2 would be the same as those under Alternative 1.

3.11.3.4 Cumulative Impacts

The Proposed Action would result in moderate, long-term, beneficial impacts by protecting existing systems from weather events and conserving energy through smart metering under Alternative 1; these benefits would not occur under Alternative 2. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs, the Proposed Action Alternatives would result in cumulative beneficial impacts to stormwater and wastewater infrastructure due to future planned Sanitary and Storm Sewer Rehabilitation Projects (see **Table 3-1**). No significant cumulative adverse effects to infrastructure (including transportation or utilities) would occur with implementation of the Proposed Action Alternatives.

3.11.3.5 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The Air Force would not implement the proposed installation development projects, and no impacts to infrastructure (including transportation or utilities) would occur. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. Electrical lines would remain above ground and continue to age, and pooling and other hazards associated with stormwater would remain. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.11.3.6 Best Management Practices and Mitigation Measures

BMPs recommended to reduce potential effects on transportation infrastructure and traffic include:

- Limit construction traffic to non-peak periods.
- Ensure debris and soil are not deposited or stored on public roadways.

No project-specific mitigation measures are recommended.

3.12 HAZARDOUS MATERIALS AND WASTES

3.12.1 Definition of the Resource

The Resource Conservation and Recovery Act (RCRA) establishes the mandatory procedures and requirements for federal facilities that use, accumulate, transport, treat, store, or dispose of hazardous wastes or materials. Under RCRA, the USEPA can grant authority to the state to establish and enforce its own hazardous waste management program, provided the state's requirements are no less stringent than the USEPA's (USEPA, 2022). In Texas, the TCEQ implements the RCRA program.

Section 311 of the CWA, as amended by the Oil Pollution Act (Public Law 101-380), establishes requirements to prevent, prepare for, and respond to oil discharges at specific types of facilities, including military Installations. Should an accidental spill occur at the Installation, the Spill Prevention, Control, and Countermeasure (SPCC) Plan also formalizes and guides response and cleanup activities. The goal of the Oil Pollution Act is to prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil. The Act requires these facilities to develop and implement SPCC Plans and establishes procedures, methods, and equipment requirements. Additionally, the SPCC Plans detail specific procedures and responsibilities for responding to hazardous material (HAZMAT) and petroleum product spills.

The ROI for hazardous materials and wastes is Sheppard AFB.

3.12.2 Existing Conditions

Under RCRA, Sheppard AFB is classified as a large-quantity generator of hazardous waste (RCRA #TX3571524161). Aircraft operations, maintenance, and related industrial activities are the primary source of hazardous wastes generated on the Installation. Examples of hazardous substances in use at Sheppard AFB include flammable and combustible liquids, acids, corrosives, caustics, anti-icing chemicals, compressed gases, solvents, paints, paint thinners, and pesticides. Sheppard AFB maintains a Hazardous Waste Management Plan (HWMP) applicable to operations involving the handling, storage, transportation, and disposal of hazardous waste, while HAZMAT used on the Installation are ordered and tracked through the Enterprise, Environmental, Safety, Occupational Health-Management Information System. This system tracks waste disposition as well (J. Knightstep, personal communication, October 6, 2023).

Sheppard AFB maintains an SPCC Plan to minimize oil discharges to waters of the US. Regulated oil discharges at the Installation include gasoline and diesel fuel, jet fuel, engine oil, hydraulic fluid, mineral oil,

vegetable oil and grease, and waste oils and wastewater treatment plant waste. Should an accidental spill occur at the Installation, the SPCC Plan also formalizes and guides response and cleanup. The goal of this regulation is to contain discharges of oil and prevent it from reaching navigable waters and adjoining shorelines. The regulation requires SPCC facilities to develop and implement SPCC Plans and establish procedures, methods, and equipment requirements (Subparts A, B, and C) (Sheppard AFB, 2020b).

3.12.2.1 Installation Restoration Program

Sheppard AFB's Installation Restoration Program (IRP) implements cleanup actions for contaminated sites (IRP sites) on the Installation. Under RCRA, IRP sites are subject to a detailed site investigation and risk assessment, the results of which are used to identify cleanup options. The process continues with the selection of a remedy, or cleanup option, cleanup of the site, monitoring, and the eventual closure of the site under RCRA.

IRP sites on Sheppard AFB are listed and described in **Table 3-13**. Many of the IRP sites on the Installation were used for disposal of hazardous contaminants. Historical records indicate these contaminants were handled and stored in drums, dumped on the ground for disposal by storm drain, or burned during training exercises. Additionally, household waste, municipal waste, incinerator ash, sludge from wastewater treatment drying beds, and construction waste were placed in landfills on the Installation. Other IRP sites were contaminated as a result of activities such as pesticide application. Although discontinued, these former practices resulted in widespread soil and groundwater contamination at Sheppard AFB (Sheppard AFB, 2020c).

All IRP sites on Sheppard AFB are designated as inactive or closed. However, because the implemented remediations left concentrations of contaminants above levels that would permit unlimited use/unrestricted exposure, the Air Force conducts evaluations of these sites at least every five years.⁵ The last five-year review was completed in 2017 and concluded that the implemented remediations (i.e., land use controls) remain sufficient to protect human health and the environment (Sheppard AFB, 2017b). The data from the 2017 review is the most current, as the next five-year review will be completed in October of 2023.

3.12.2.2 Military Munitions Response Program

The Military Munitions Response Program (MMRP) addresses various sites associated with the DoD, including those at active installations that are known or suspected to contain unexploded ordnance, discarded military munitions, and munitions constituents (DoD, 2023). The MMRP also covers the investigation of closed, outdoor small arms ranges at recreational and combat training facilities, including sporting clay, trap, and skeet ranges (DoD, 2013).

In accordance with the *Comprehensive Environmental Response, Closure, Liability Act* (CERCLA) and the National Contingency Plan, MMRP sites undergo a Comprehensive Site Evaluation (CSE) Phase I to determine if a CSE Phase II and/or further action is needed. If a site is found to require further action after a CSE Phase II, the process continues with a remedial investigation, feasibility study, remedial design, remedial action/land use control (LUC) implementation, and long-term management of the site under CERCLA (Wagner, 2022).

MMRP sites TS880 and TS881 on Sheppard AFB are in close proximity to the Proposed Action: TS880 is 10 feet away and TS881 is adjacent to the proposed construction location for Project 2. Both are former skeet ranges. Historically, lead shot was used at skeet ranges. In addition to the potential health hazard of lead exposure from human contact with the lead shot itself, pellets left on ranges can contaminate soil and groundwater after prolonged exposure to the elements (USEPA, 2005). Both sites are closed; TS880 is in the remedial investigation stage and TS881 is in the remedial action operation stage.

⁵ Since the IRP sites received closure under RCRA and the Defense Environmental Restoration Program is conducted in accordance with CERCLA, five-year reviews are now carried out in accordance with CERCLA and the National Contingency Plan.

Table 3-13
IRP Site Distances from Proposed Projects

Site	Status	Description	Distance from Proposed Projects (feet) – Alternative 1	Distance from Proposed Projects (feet) – Alternative 2
AOC01	Inactive	Building 2115 Base Fueling Facility	700	1,500
DP011	Inactive	Former Pesticide Spraying Area	1,700	1,700
FT001	Inactive	Fire Protection Training Area No. 1	1,900	1,900
FT002	Inactive	Fire Protection Training Area No. 2	280	280
LF004	Inactive	Landfill No. 1	1,900	1,900
LF005	Inactive	Landfill No. 2	1,700	1,700
LF006	Inactive	Landfill No. 3	350	350
OT500	Inactive	Golf Course Main Cistern, collected runoff from golf course machinery	1,700	1,700
RW007	Inactive	Low-level Radioactive Waste Disposal Site No. 1	1,900	1,900
RW008	Inactive	Low-level Radioactive Waste Disposal Site No.2	1,650	1,650
ST012	Inactive	Removed USTs (B-2000 & B-2003)	0	0
ST013	Inactive	Ave D/Warehouse 6 (2 abandoned USTs)	1,100	1,100
ST014	Inactive	ST014 B-990 (abandoned UST), closed	700	700
ST015	Inactive	Building 2540 (9 abandoned USTs)	100	100
ST016	Inactive	B-920 (9 abandoned USTs), closed	100	100
ST017	Inactive	Former AAFES Service Station	120	120
TU001	Inactive	Building 1400 UST Site	1,100	1,100
TU002	Inactive	Building 2206 UST Site	550	550
WP009	Inactive	Formerly Solvent Waste Pits	350	350
WP010	Inactive	Former Industrial Oil/Waste Pit	1,200	1,200

AAFES = Army and Air Force Exchange Service; B = Building (as in B-990); UST = underground storage tank

3.12.2.3 Per- and Polyfluoroalkyl Substances

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals that have been included in industry and consumer products since the 1940s due to their useful properties. There are thousands of different chemicals in the PFAS group, some of which are more widely used and studied than others. Most PFAS share characteristics of concern in their ability to move, persist, and build up in the environment and living organisms over time. Although PFAS exposure in humans at relatively low concentrations is common, research suggests that exposure to concentrated sources of PFAS over long periods of time may be linked to adverse health outcomes (USEPA, 2023c).

The DoD identifies PFAS as emerging contaminants of concern, as they are components of legacy aqueous film forming foam (AFFF) used to extinguish petroleum fires. In 2016, the USEPA issued a lifetime drinking water health advisory for two PFAS precursors in AFFF, and health-based regional screening levels for a third PFAS used as a firefighting agent in AFFF. Per the DoD's relative risk site evaluation framework, the Air Force continues to evaluate potential AFFF releases on its current and former Installations. On Sheppard AFB, there are nine such sites under evaluation, concentrated in the northern portion of the

Installation. Several of these sites are present in the vicinity of proposed project locations under the Proposed Action or Alternatives (**Table 3-14**).

Table 3-14
AFFF Release Site Distances from Proposed Projects

Site	Status	Description	Distance from Proposed Projects (feet) – Alternative 1	Distance from Proposed Projects (feet) – Alternative 2
FT003 & FT003-SUB	Inactive	AFFF-1 and Fire Protection Training Area No. 3. Former Fire Training Area with drainage collection system to unlined evaporation pond, PFOS/PFOA site.	400	400
SS001P	Inactive	AFFF-8, Area 8 Strategic Air Command Alert Ramp AFFF Testing Areas, PFAS/PFOS site. The area or site of an aircraft crash. Proposed sampling location for AFFF Release Area.	1,700	1,700
SS002P	Inactive	AFFF-2, Area 2 Strategic Air Command Alert Ramp, PFAS/PFOS site. The area or site of an aircraft crash. Proposed sampling location for AFFF Release Area.	2,500	2,500
SS003P	Inactive	AFFF-3, Aircraft Crash Area No. 1, PFAS/PFOS site. The area or site of an aircraft crash. Approximately 5–10 gallons of AFFF used to extinguish the aircraft fire was applied directly to the ground surface.	75	75
SS004P	Inactive	AFFF-5, Aircraft Crash Area No. 3, PFAS/PFOS site. The area or site of an aircraft crash. Approximately 5–10 gallons of AFFF used to extinguish the aircraft fire was applied at the crash area onto the concrete runway.	700	700
SS005P	Inactive	AFFF-4, Aircraft Crash Area No. 2, PFAS/PFOS site. The area or site of an aircraft crash. Approximately 5–10 gallons of AFFF used to extinguish the fire was applied onto the concrete runway.	0	0
SS006P	Inactive	AFFF-6, Aircraft Crash Area No. 4, PFOS/PFOA site. Approximately 5–10 gallons of AFFF used to extinguish the aircraft fire was applied at the crash area onto the concrete runway.	100	100
SS007P	Inactive	AFFF-7, Aircraft Crash Area No. 5, PFAS/PFOS site. The area or site of an aircraft crash. Approximately 5–10 gallons of AFFF used to extinguish the fire was applied directly to the ground surface.	250	250
SS009P	Inactive	AFFF-10, former firefighting training and spraying AFFF area. Occurred in the late 1970s to mid-1980s. PFOS/PFOA site in the mid-1980s, training and for spraying AFFF.	1,025	1,300

AFFF = aqueous film forming foam; PFAS = per- and polyfluoroalkyl substances; PFOA = perfluorooctanoic acid; PFOS = perfluorooctane sulfonate

3.12.2.4 Lead-Based Paint, Asbestos, and Polychlorinated Biphenyls

The Occupational Safety and Health Administration (OSHA) and USEPA have determined that human exposure to lead is an adverse health risk. Sources of exposure to lead are dust, soil, and lead-based paint (LBP). In 1973, the Consumer Product Safety Commission established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the *Consumer Product Safety Act* (15 USC §§ 2051–2089), the Commission lowered the allowable lead level in paint to 0.06 percent (600 ppm). The Act also restricted the use of LBP in nonindustrial facilities. The DoD implemented a ban on LBP use in 1978; therefore, it is possible that facilities constructed prior to or during 1978 may contain LBP.

A number of Sheppard AFB facilities with proposed renovation or demolition projects under the Proposed Action and Alternatives were constructed between 1949-1979. During this period, asbestos-containing materials (ACMs) were commonly used in construction. Nonfriable asbestos is not considered HAZMAT until it is removed or disturbed.

Polychlorinated biphenyls (PCBs) were also commonly used in construction and electrical work through the 1970s. However, Sheppard AFB is considered PCB-free, as such PCBs will not be discussed further in this assessment.

Due to the risk of encountering LBP or ACM wastes and debris from the demolition or renovation of the facilities in question would need to be handled in a manner that would adhere to federal, DoD, and Texas State regulations as they pertain to handling, remediating, and disposing of these materials/wastes.

3.12.2.5 Radon

The USEPA Radon Zone Map (<https://www.epa.gov/sites/default/files/2018-12/documents/radon-zones-map.pdf>) shows areas with potential to have elevated indoor radon levels, divided up by county. North-central Texas falls into the “low potential” category, meaning that the potential for elevated radon levels is minimal. As a result, radon is not discussed further.

3.12.3 Environmental Consequences

Adverse impacts to HAZMAT and hazardous wastes would occur if activities associated with the Proposed Action or Alternatives resulted in:

- a substantial increase in the generation of a hazardous substance;
- an increase in exposure of persons to a hazardous substance; and an increased presence in the environment of a hazardous substance.

3.12.3.1 Alternative 1 (Preferred Alternative)

Hazardous Materials and Wastes

Alternative 1 involves construction activities that would require the use, handling, storage, transport, and disposal of regulated HAZMAT and/or hazardous wastes, such as vehicle and equipment operating fuels (e.g., oil, diesel, gasoline, antifreeze, and lubricants). This would result in the potential for accidental discharges or spills that could contaminate the environment or result in human exposure to hazardous materials or wastes.

Under Alternative 1, HAZMAT and hazardous wastes that would be used or generated during construction would be handled, stored, and disposed of in accordance with federal and state laws and regulations. All applicable permits for handling and disposal of HAZMAT and hazardous wastes would be obtained prior to beginning construction activities. Construction activities under this alternative would also be subject to the procedural requirements of Sheppard AFB’s HWMP, SPCC Plan, and other applicable management plans to prevent and minimize risks associated with contamination release, or transport of HAZMAT and hazardous wastes in the environment. During construction, if an unexpected discovery of HAZMAT and

hazardous wastes occurs, all work in that location would stop until the potential contaminant has been properly evaluated and addressed.

Although the Air Force has not identified evidence of HAZMAT and hazardous wastes in areas where the proposed projects would be located under Alternative 1, construction activities could also unearth contaminants in environmental media not yet known or identified for management action. Even without a major release or discovery event, multiple minor releases of HAZMAT and hazardous wastes could potentially affect people or the environment.

Additionally, several projects would take place within the environmental constraint area (**Figure 3-11**). This includes P1, P5, P9, P11, and P15–P17. Prior to beginning any ground-disturbing activities for these projects, the Environmental Flight would be contacted for further guidance.

Overall, because Sheppard AFB is a large-quantity generator of hazardous wastes, and a large-quantity handler of universal wastes, impacts would be anticipated to be short term, negligible, and adverse. There would be no significant adverse impacts on the generation of wastes from the completion of any project under this alternative.

Installation Restoration Program

Under Alternative 1, several demolition actions under Project 4 would occur near two IRP sites: ST012 and ST016 (**Figure 3-11**). This project would involve demolishing existing buildings but would not involve construction or groundwork in the vicinity of the IRP sites. The new buildings that would be constructed as a part of Project 4 under Alternative 1 would be built farther away from these two sites (the closest IRP site from the new construction would be over 600 ft away). Land use controls are in place for these IRP sites and are identified on deed records with Wichita County, stating that any construction on and around the sites must be for non-residential use. With such land use controls in place, the sites have been granted closure by the TCEQ, with regular site evaluations occurring every five years. Demolition of the existing HQ building under Project 1 would occur near a third IRP site, Site ST015, which also is closed. As with Project 4, the demolition actions under Project 1 would not involve any construction or groundwork in the vicinity of the IRP site, and the new building constructed under this project would be built approximately 400 feet from the IRP site (**Figure 3-11**). Alternative 1 would not result in impacts to IRP sites.

Military Munitions Response Program

Under Alternative 1, construction actions under Project 2 would take place in between both MMRP sites (TS880 and TS881) (**Figure 3-11**). TS880 is approximately 10 feet south of the Proposed Project Area, and TS881 is immediately adjacent to where construction under Project 2 would take place. While construction would not take place within either site, there would be the potential for encountering stray lead shot or lead-contaminated soil during construction activities; appropriate BMPs would be implemented. MMRP sites TS880 and TS881 would remain undisturbed; Alternative 1 would not result in impacts to MMRP sites.

Per- and Polyfluoroalkyl Substances

While all AFFF release sites on Sheppard AFB are designated as inactive, there is the potential for PFAS to be present in soil and/or groundwater at AFFF release site SS006P, which is within approximately 100 feet of proposed demolition that would occur under Project 4, as well as at AFFF release site SS005P, which directly intersects with Project 13 (**Figure 3-11**); Project 13 would also occur in close proximity to sites SS003P and SS007P. Project 13 consists of maintenance and improvements to pre-existing airfield pavement, the addition of paved shoulders along one runway and accompanying overruns, and the installation of subsurface drainage (see **Table 2-2**). The TCEQ requires consultation prior to planning and initiating any activity involving the disturbance of soils at these sites.

The TCEQ Remediation Division recommends that measures be taken to ensure that no additional releases of AFFF occur as a result of planned activities and that any derived waste such as contaminated soils from investigation of AFFF release sites be disposed of in an authorized facility. Considering the 'inactive' status

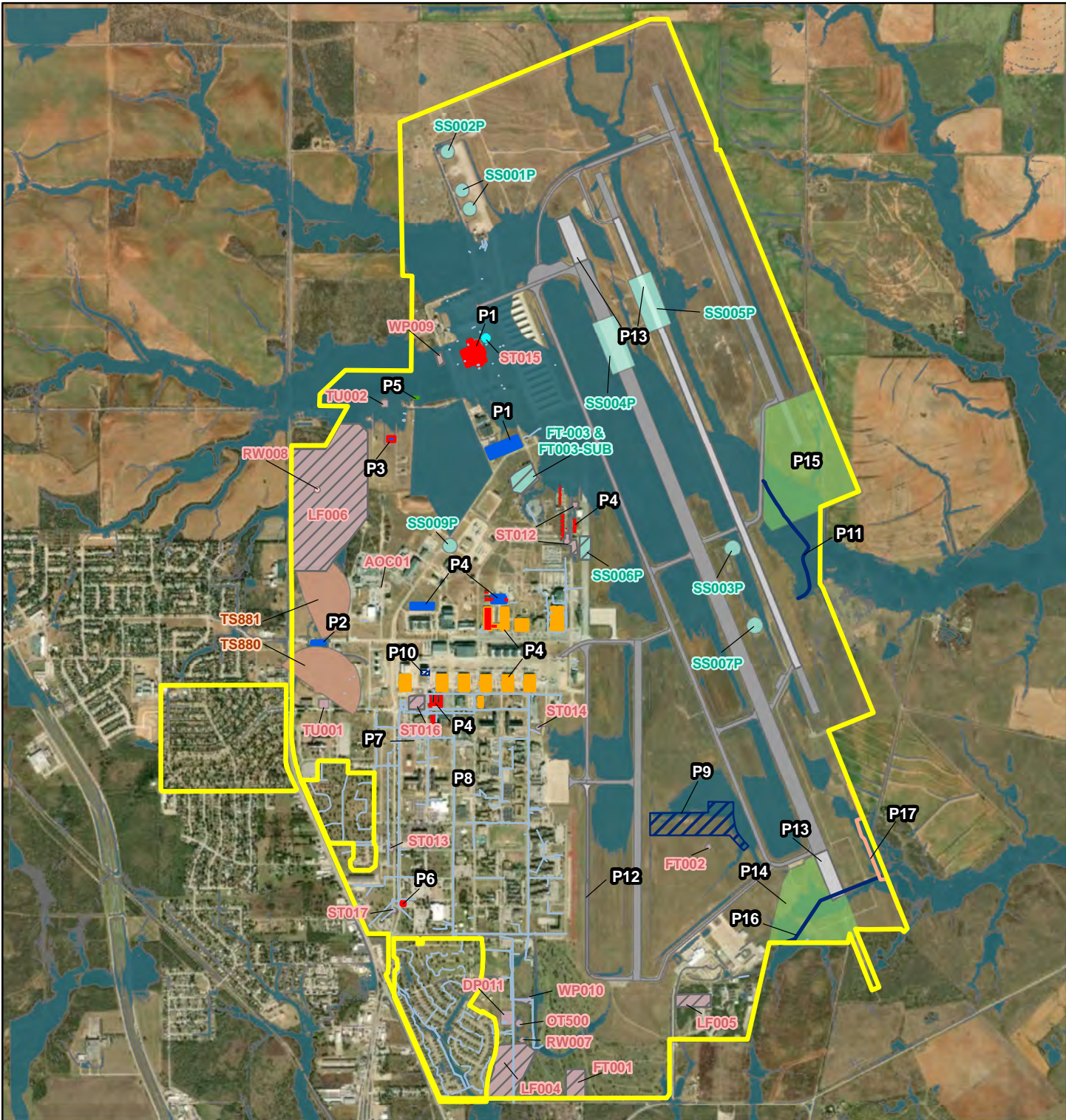


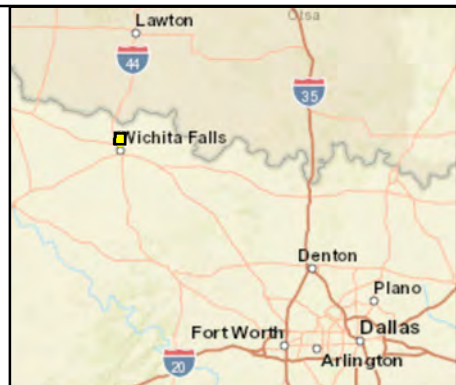
FIGURE 3-11
Hazardous Materials and Waste – Alternative 1

- | | | |
|------------------------|-----------------------|--------------------------|
| Drainage Line | Construction | LUC Site |
| Electrical Lines | Demolition | Environmental Constraint |
| Fence | Renovation | IRP Site (AFFF) |
| Installation Boundary | Airfield Pavement | IRP Site |
| Drainage Repair Area | Airfield Project Area | MMRP Site |
| Additions to Buildings | Grading Area | |



0 0.5 1
 Mile

Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



of SS003P, SS005P, SS006P, and SS007P (see **Table 3-14**) combined with the implementation of BMPs and adherence to all applicable regulations and policies, adverse impacts due to AFFF sites would be anticipated to be short term and minor.

Lead-Based Paint and Asbestos

Alternative 1 would include renovation or demolition actions involving several buildings that have the potential to contain ACMs or LBP (**Table 3-15**). These facilities would be demolished or renovated by trained personnel knowledgeable of safety and environmental concerns. Wastes, should they be found to contain asbestos or lead, would be handled as hazardous or toxic waste and disposed of accordingly.

**Table 3-15
Facilities of Concern for LBP and ACMs – Alternative 1**

Building	Year Built
B-200	1962
B-920	1954
B-1010	1952
B-1020	1941
B-1040	1941
B-1060	1941
B-1080	1941
B-1090	1941
B-1900	1956
B-1921	1972
B-1927	1974
B-1928	1975
B-1929	1975
B-2001	1956
B-2014	1956
B-2220	1959
B-2320 (80 FTW HQ)	1960

BMPs for demolition or renovation of these facilities would include initial supervision and training when working in hazardous environments, the use of respirators if ACM exposure is possible, and testing areas of concern prior to the project start. With all applicable requirements and management plans in place, potential impacts to HAZMAT and hazardous wastes would be short term, minor, and adverse. Alternative 1 would also have long-term, minor, beneficial impacts on HAZMAT and hazardous wastes due to a lowered future risk of exposure to LBP or ACMs resulting from the demolition of older structures that have the potential to contain those materials.

The repair of circuits 4 and 11, a future planned action at Sheppard AFB involving electrical infrastructure repair similar to Projects 7 and 8, would disturb approximately 57.11 cubic yards of soil on IRP site ST012 (see **Table 3-1**). As this site has been slotted by the TCEQ for approved industrial uses and would not result in significant cumulative impacts. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs, no significant cumulative effects to HAZMAT and hazardous wastes would occur under Alternative 1.

3.12.3.2 Alternative 2

Impacts to HAZMAT and hazardous wastes, IRP sites, MMRP sites, and PFAS/PFOS under Alternative 2 would be the same as those under Alternative 1 (**Figure 3-12**).

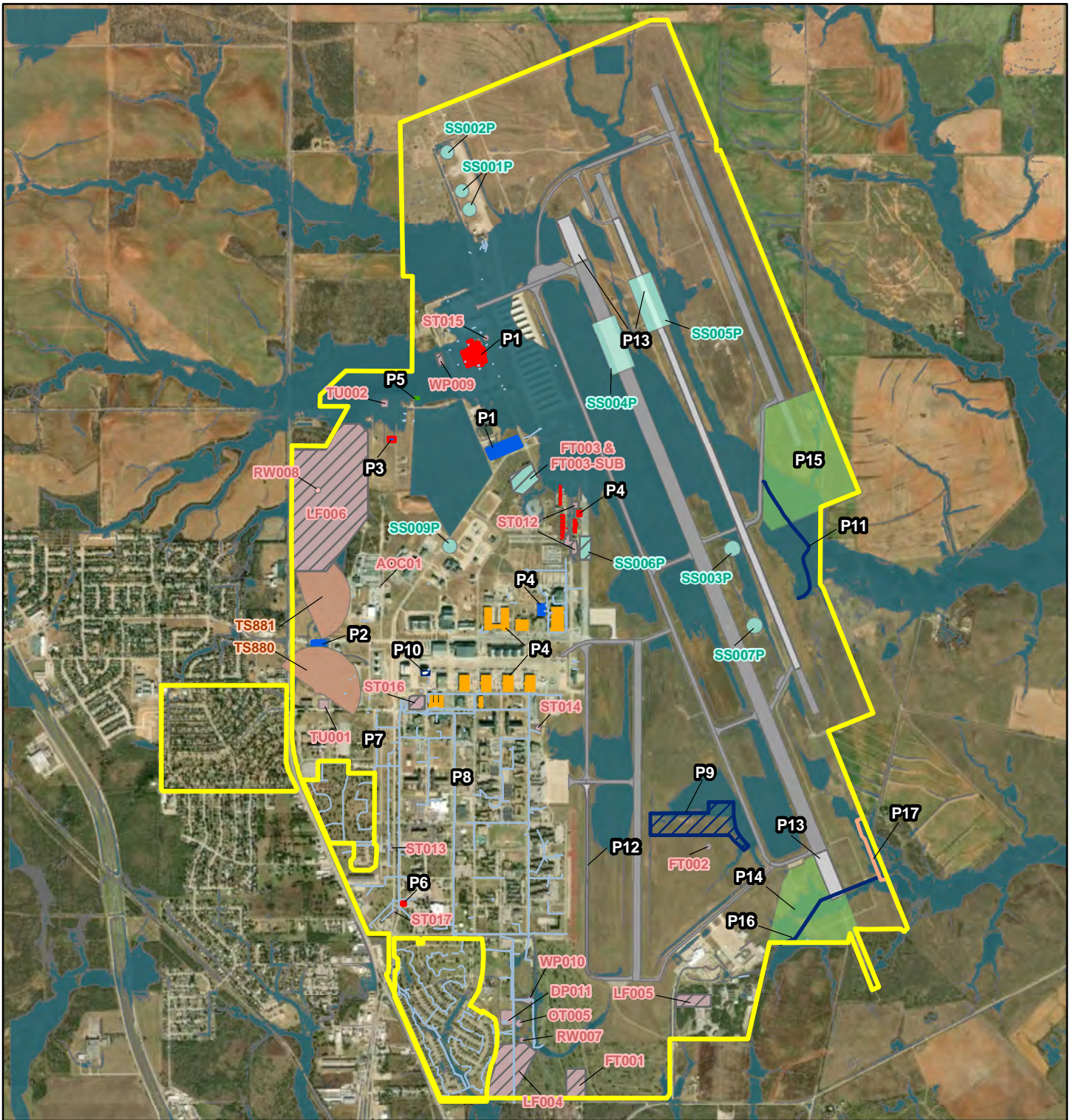
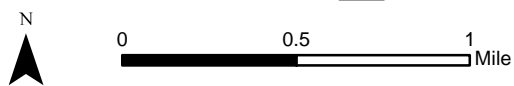


FIGURE 3-12
Hazardous Materials and Waste – Alternative 2

- | | | |
|------------------------|-----------------------|--------------------------|
| Drainage Line | Construction | LUC Site |
| Electrical Lines | Demolition | Environmental Constraint |
| Fence | Renovation | IRP Site (AFFP) |
| Installation Boundary | Airfield Pavement | IRP Site |
| Drainage Repair Area | Airfield Project Area | MMRP Site |
| Additions to Buildings | Grading Area | |



Imagery: ESRI, 2021
 Coordinate System: NAD 83 UTM Zone 14N



Lead-Based Paint and Asbestos

Impacts to LBP, ACMs, and other materials of concern under Alternative 2 would be the same as those under Alternative 1, except for the buildings that would be affected (**Table 3-16**). Under Alternative 2, Building 2010 would be demolished, whereas this building would not be included in Alternative 1. Buildings 1928 and 1929 are not included under Alternative 2 as they are not being demolished as part of Project 4. Additionally, Building 1010 is not included under Alternative 2 as it will not be renovated under Project 4.

**Table 3-16
Facilities of Concern for LBP and ACMs – Alternative 2**

Building	Year Built
B-200	1962
B-920	1954
B-1040	1941
B-1060	1941
B-1080	1941
B-1090	1941
B-1900	1956
B-1921	1972
B-1927	1974
B-2001	1956
B-2010	1963
B-2012	1956
B-2014	1956
B-2220	1959
B-2320 (80 FTW HQ)	1960

BMPs for demolition or renovation of these facilities under Alternative 2 would be the same as those under Alternative 1.

The repair of circuits 4 and 11, a future planned action at Sheppard AFB involving electrical infrastructure repair similar to Projects 7 and 8, would disturb approximately 57.11 cubic yards of soil on IRP site ST012 (see **Table 3-1**). As this site has been slotted by the TCEQ for approved industrial uses and would not result in significant cumulative impacts.

3.12.3.3 Cumulative Impacts

The Proposed Action would result in negligible impacts related to HAZMAT and hazardous wastes; Additional facility construction in the future would need to be evaluated for impacts to HAZMAT and hazardous wastes . When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to HAZMAT and hazardous wastes would occur with implementation of the Proposed Action Alternatives.

3.12.3.4 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects and no impacts to HAZMAT and hazardous wastes would occur. Management associated with the use, handling, storage, transport, treatment, or disposal of HAZMAT and hazardous wastes at Sheppard AFB would continue in accordance with relevant management plans. The Installation would continue to comply with applicable HAZMAT and hazardous wastes laws and regulations. Sheppard AFB would continue to operate under current conditions and the facility and infrastructure assets of the Installation

would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.12.3.5 Best Management Practices and Mitigation Measures

BMPs recommended to reduce potential HAZMAT and hazardous wastes effects include:

- Adhere to the Sheppard AFB HWMP to minimize impacts from the handling and disposal of hazardous substances and ensure compliance with state and federal hazardous materials regulations.
- Properly handle and remove all hazardous and toxic substances used during construction, demolition, and renovation activities.
- Properly handle, remove, and dispose of ACMs in accordance with Air Force, local, state, and federal regulations.
- Properly handle, remove, and dispose of LBPs in accordance with Air Force, local, state, and federal regulations.

No project-specific mitigation measures are recommended.

3.13 SAFETY

3.13.1 Definition of the Resource

This section discusses safety concerns associated with ground, flight, and explosives storage activities. Ground safety considers issues associated with ground operations and maintenance activities that support unit operations. Ground safety also considers the safety of personnel and facilities from flight operations in the vicinity of the airfield and in the airspace. Clear zones (CZs) and accident potential zones (APZs) around the airfield restrict the public's exposure to areas with a higher accident potential.

Flight safety considers aircraft flight risks such as midair collision, bird/wildlife-aircraft strike hazards, and in-flight emergencies. The Air Force has safety procedures and aircraft-specific emergency procedures produced by the original equipment manufacturer of the aircraft. Basic airmanship procedures also exist for handling any deviations to air traffic control procedures due to an in-flight emergency; these procedures are defined in Volume 3 of AFI 11-202, *General Flight Rules*, and established in aircraft flight manuals. The Flight Crew Information File is a safety resource for aircrew day-to-day operations and contains air and ground operation rules and procedures.

Explosives safety relates to the management and safe use of ordnance and munitions.

The ROI for safety is Sheppard AFB.

3.13.2 Existing Conditions

Under 40 CFR § 989.27, the EIAP for an action must assess direct and indirect impacts of the Proposed Action and Alternatives on the safety and health of Air Force employees and others at a work site. Air Force Policy Directive 91-2, *Safety Programs*, is implemented by AFI 91-202, *The US Air Force Mishap Prevention Program*, which manages risks to protect Air Force personnel from occupational deaths, injuries, or illnesses and minimize loss of Air Force resources. These standards apply to all Air Force activities and adherence to the Air Force's Mishap Prevention Program ensures Air Force workplaces meet federal safety and health requirements.

Day-to-day operation and maintenance activities at Sheppard AFB are performed in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by

Air Force occupational and environmental safety, fire protection, and health program requirements. These are intended to reduce occupational risks to government personnel and contractors and to protect other individuals that reside on, visit, or are near the Installation.

3.13.2.1 Ground Safety

Ground safety concerns include ground and industrial operations, general operational activities, and motor vehicle use. Accidents can occur from equipment operation, use of materials, and building and equipment maintenance. Air Force safety programs for industrial activities, motor vehicle and equipment operation, and everyday operations are continuously refined as new activities begin and new information becomes available. All Airmen receive regular safety training in order to keep the chances of mishaps as low as possible.

All construction contractors at Sheppard AFB must follow ground safety regulations and worker's compensation programs to avoid posing any risks to workers or personnel on or off the Installation. Construction contractors are responsible for reviewing potentially hazardous workplace operations, monitoring exposure to workplace chemicals (e.g., lead, ACMs, HAZMAT and hazardous wastes); physical hazards (e.g., noise propagation, slips, trips, falls); and biological agents (e.g., infectious waste, wildlife, poisonous plants). Construction contractors are required to recommend and evaluate controls (e.g., preventative, administrative, engineering) to ensure personnel are properly protected and to implement a medical surveillance program to perform occupational health physicals for those workers subject to any accidental chemical exposures.

3.13.2.2 Flight Safety

The potential for aircraft mishaps during flight is a public concern with regard to flight safety. Incidents may occur because of midair collisions, collisions with man-made structures or terrain, mechanical failure, weather-related accidents, pilot error, or bird/wildlife-aircraft strike hazard.

The safety of the public with respect to aircraft operations at Sheppard AFB is a primary concern for the Air Force. The areas surrounding the Installation have established AICUZ guidelines to define locations with the highest potential for aircraft accidents and aircraft noise impacts, and to establish flight rules and flight patterns that will have the fewest impacts on the civilian population with regard to safety and noise effects. For potential aircraft accidents, CZs and APZs have been established to identify areas with the greatest risk for aircraft accidents and to guide or minimize off-Base development in these higher-risk areas. The CZs and APZs also restrict incompatible land use and thereby reduce exposure to hazards within and adjacent to the runway (Sheppard AFB, 2011).

3.13.2.3 Explosives Safety

Defense Explosives Safety Regulation 6055.09, AFMAN 91-201, *Explosives Safety Standards*, defines the guidance and procedures for munition storage and handling. During typical training operations, aircraft are not loaded with high-explosive ordnance. Munitions for training operations may include captive ordnance, defensive countermeasure chaff and flares, and gun ammunition with inert projectiles. All munitions are stored and maintained within munitions storage areas (MSAs) in facilities designed for the allowable types and amounts of explosives. All storage and handling of munitions is carried out by trained and qualified munitions flight personnel and in accordance with Air Force-approved Technical Orders.

Operational constraints are primarily associated with explosive safety quantity distance (ESQD) arcs, munitions storage, and transportation routes. ESQD arcs are defined distances from explosives storage which prevent development within their extents. There are two areas on Sheppard AFB that contain ESQD arcs, both of which are within the Base Support and Industrial District. The northeast corner of the Installation contains a suspect vehicle site, in which the ESQD arc (1,250 ft) applies temporarily when a vehicle is suspected of containing explosives. Within this site is a smaller ESQD arc (300 ft) associated with an explosives training range. The western side of Sheppard AFB contains the 982 Training Group

MSA. This area contains six buildings (Buildings 2210, 2212, 2214, 2216, 2218 and 2220) which are currently utilized for the storage of explosives, requiring a 654 ft ESQD arc. This arc has the potential to expand to 1,250 feet in the instance of a “safe haven” event, in which additional munitions shipments may be stored under emergency conditions. Five of the facilities at this location have been rated as being in adequate condition, while Building 2220 is in an advanced state of disrepair and is undersized for the existing mission needs (Sheppard AFB, 2016).

3.13.3 Environmental Consequences

3.13.3.1 Evaluation Criteria

Safety-related impacts from a proposed activity are assessed according to the potential for the activity to increase or decrease safety risks to personnel, the public, property, or the environment. Adverse impacts related to safety would occur if the Proposed Action or Alternatives resulted in OSHA criteria being exceeded or the improper implementation of established or proposed safety measures, creating an unacceptable safety risk to personnel. Adverse impacts would occur if the activities:

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

3.13.3.2 Alternative 1 (Preferred Alternative)

Ground Safety

Construction and demolition activities can potentially expose personnel to health and safety hazards from heavy-equipment operation, HAZMAT and chemical use, and working in confined, poorly ventilated, and noisy environments. Therefore, short-term, negligible-to-minor, adverse impacts on contractor health and safety could occur during proposed construction and demolition projects under Alternative 1. To minimize health and safety risks, contractors would be required to use appropriate personal protective equipment, establish and maintain site-specific health and safety programs for their employees, and follow all applicable OSHA regulations. Additionally, construction contractors at Sheppard AFB would be required to follow ground safety regulations to avoid risks to workers or personnel on or off the Installation.

There would be long-term, minor, beneficial impacts to ground safety under Alternative 1. Projects 7 and 8 would replace aging electrical infrastructure with new distribution lines located entirely underground. In addition, the lightning protection and grounding system would be replaced for Circuits 5 and 9. These actions would provide long-term, minor, beneficial safety benefits for maintaining the Installation’s security functions during inclement weather events. The replacement and addition of street lighting in multiple locations, specifically around the Wherry housing area, would provide safety benefits for both commuters and the residents of Sheppard AFB. Repairs to pavement and drainage structures under Project 10 would resolve existing safety hazards due to the deteriorated concrete. Projects 1-6 would provide additional benefits to ground safety from the demolition and replacement of obsolete facilities or renovation of existing buildings. Project 16 would reduce slopes on the airfield to improve safety conditions for mowing. The remaining ADP projects would have no impact on ground safety.

Flight Safety

Under Alternative 1, long-term, minor, beneficial impacts to flight safety would occur. Projects 9, 11, and 16 would repair airfield drainage and would improve safety conditions by removing potential water hazards near the runways, taxiways, and overruns. Project 12 would eliminate the potential for aircrews to mistake the abandoned Taxiway A South as active, removing the potential for accidents. Project 13 would result in repaired runways and overruns, added shoulders, and installed subsurface drainage to Runway 15C/33C and Overrun 15R/33L. These actions would improve the overall safety and conditions for flight operations.

Grading associated with Project 14 would bring the airfield imaginary surface associated with Runway 15L/33R into compliance as defined by UFC 3-260-01, which would provide essential benefits to SHEPPARD AFB safety. Project 15 would also involve grading along the same runway to allow for grass to be mowed more safely and efficiently.

The remaining proposed projects would result in no change to flight safety, CZs, or APZs at Sheppard AFB.

Explosives Safety

Project 3 under Alternative 1 would demolish the deteriorating, undersized Building 2220, which is currently utilized for explosives storage within the western portion of Sheppard AFB. This action would replace the existing facility with a larger munitions storage facility and would result in long-term, minor, beneficial impacts for explosives safety by improving storage conditions and capacity within the MSA to meet current mission requirements. Project 3 would provide an updated, right-sized facility for explosives storage and would also allow for more strategic usage of existing storage facilities. The proposed project would not result in a change to the existing ESQD arcs within Sheppard AFB.

3.13.3.3 Alternative 2

Ground Safety

Impacts to ground safety under Alternative 2 would be the same as those under Alternative 1, except for those described under Projects 7 and 8. Electrical distribution infrastructure would be repaired by replacing overhead lines, conductors, and transformers; however, these distribution lines would not be relocated underground. Beneficial impacts to the safety and security functions of Sheppard AFB would occur as a result of these improvements, but not to the extent described under Alternative 1. Streetlighting improvements would also not be included under Alternative 2 and the associated safety improvements would not be realized.

Flight Safety

Impacts to flight safety under Alternative 2 would be the same as those under Alternative 1, except for those described under Project 12. Under Alternative 2, Taxiway A South would remain as is. Mandatory closed pavement markings would continue to be maintained, and FOD-producing hazards would continue to be corrected, and the flight safety benefits associated with demolition of the Taxiway would not be realized.

Explosives Safety

Impacts to explosives safety under Alternative 2 would be the same as those under Alternative 1.

3.13.3.4 Cumulative Impacts

The Proposed Action would result in long-term, minor, beneficial impacts to ground safety by moving electrical lines underground under Alternative 1 and replacing aging electrical distribution lines under all Alternatives. Flight safety would improve under Alternative 1 through the removal of unused Taxiway A pavement. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to safety would occur with implementation of the Proposed Action Alternatives.

3.13.3.5 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects. Conditions at Sheppard would remain unchanged, and operations would continue in substandard conditions. The facility and infrastructure assets of the Installation would continue to degrade. Electrical infrastructure installed as early as the 1940s would remain in place, compromising the security and

functionality of the Installation during inclement weather events. Safety hazards from deteriorated concrete, aging administrative and munitions facilities, and insufficient drainage structures would remain an issue for the successful and safe operations of both Sheppard AFB and the airfield. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.13.3.6 Best Management Practices and Mitigation Measures

No BMPs or project-specific mitigation measures are recommended.

3.14 SOCIOECONOMICS

3.14.1 Definition of the Resource

Socioeconomics is the relationship between economics and social elements, such as population levels and economic activity. Several factors can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of dependents living below the poverty level, employment, and housing data. Employment data identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region. Socioeconomic data are typically presented at county, state, and national levels to characterize baseline socioeconomic conditions in the context of regional, state, and national trends.

The ROI for socioeconomics includes Sheppard AFB and the surrounding environs (Wichita County and the Wichita Falls Census County Division⁶ [CCD]) (Figure 3-13).

3.14.2 Existing Conditions

3.14.2.1 Population

From 2011 to 2021, the population of the US experienced an average annual growth rate (AAGR) of 0.8 percent, and saw a total population increase of approximately 7.5 percent. The state of Texas experienced a 1.7-percent AAGR and saw a sizeable total population increase of approximately 16.5 percent. However, both Wichita County and the Wichita Falls CCD saw their populations decrease over the same period, with AAGRs of -0.1 percent and -0.2 percent, and total population decreases of -1.1 percent and 1.7 percent, respectively (Table 3-17).

3.14.2.2 Employment

The annual average labor force in 2022 in Wichita County was 55,485 people, and the average unemployment rate was 3.9 percent (2,168 unemployed). The unemployment rate for Texas was the same as that of Wichita County at 3.9 percent, and both rates were higher than the average national unemployment rate of 3.6 percent (United States Bureau of Labor Statistics 2023a, 2023b).

The industry with the highest employment in Wichita County was the Government and Government Enterprises Sector, followed by Healthcare and Social Assistance. The Government and Government Enterprises sector accounted for 21.3 percent of employment in the County, 11.4 percent of employment in the state of Texas, and 12 percent of employment in the US, while the Health Care and Social Assistance sector accounted for 14.4 percent, 9.5 percent, 11.4 percent of employment in Wichita County, Texas, and the US, respectively (United States Bureau of Economic Analysis 2023a, 2023b, 2023c).

⁶ CCDs are statistical geographic entities established cooperatively by the Census Bureau and officials of state and local governments in 21 states where minor civil divisions either do not exist or have been unsatisfactory for reporting statistical data. The primary goal of the CCD program has been to establish and maintain a set of subcounty units that have stable boundaries and recognizable names (USCB, 2018 [83 FR 56285]).

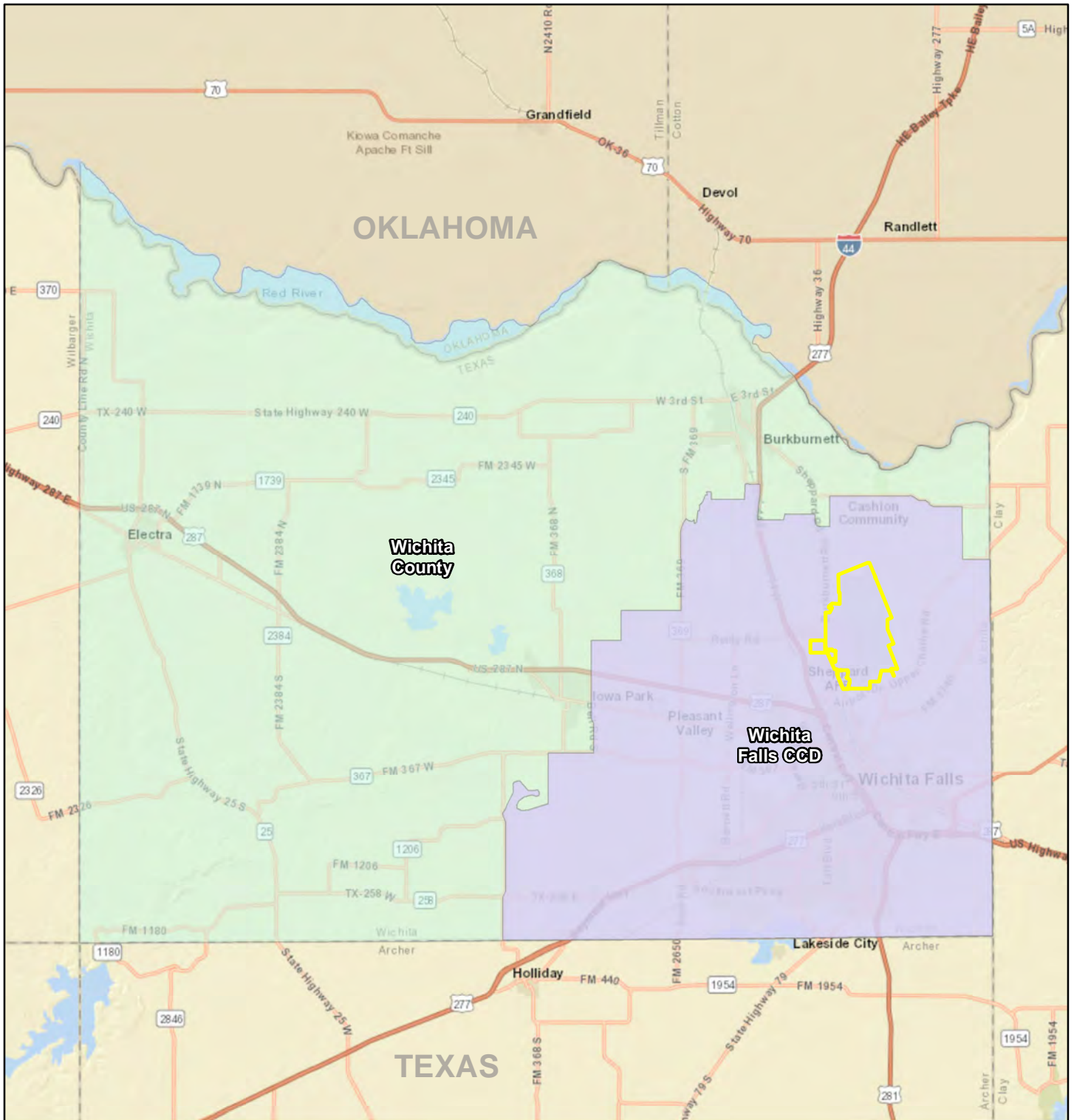



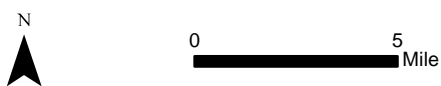


FIGURE 3-13
Wichita Falls County and CCD

-  Installation Boundary
-  Wichita County
-  Wichita Falls CCD



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



Table 3-17
Community and County Population Estimates and Growth near Sheppard AFB

Geographic Area	2011	2021	AAGR 2011–2021 (percent)	Total Growth (percent)
United States	306,603,772	329,725,481	0.8	7.5
Texas	24,774,187	28,862,581	1.7	16.5
Wichita County	130,835	129,419	-0.1	-1.1
Wichita Falls CCD	108,141	106,265	-0.2	-1.7

Source: United States Census Bureau (USCB) 2023a, 2023b

3.14.2.3 Housing

In 2021, the Wichita Falls CCD had a lower percentage of owner-occupied homes and a higher percentage of renter-occupied homes than Wichita County, Texas, and the US (**Table 3-18**). Both the CCD and Wichita County had higher homeowner and rental vacancy rates than Texas or the US, and the CCD had the highest percentage of vacant units across all four geographies. The median value for homes in the CCD was approximately \$110,800, compared to approximately \$106,600 in Wichita County, \$202,600 in the state of Texas, and \$244,900 in the US (USCB, 2023c).

Table 3-18
Housing

Geographic Area	US	Texas	Wichita County	Wichita Falls CCD
Total units	139,647,020	11,433,880	55,544	44,808
Owner-occupied (percent)	64.6	62.4	61.3	58.3
Renter-occupied (percent)	35.4	37.6	38.7	41.7
Vacant units	15,636,028	1,194,539	7,371	6,088
Homeowner vacancy rate ^a (percent)	1.2	1.3	2.0	2.4
Rental vacancy rate ^b (percent)	5.7	7.6	11.7	12.3
Median value ^c (\$)	244,900	202,600	109,600	110,800

Source: USCB 2023a

Notes:

- a. Homeowner vacancy rate is the proportion of the homeowner inventory that is vacant “for sale.”
- b. Rental vacancy rate is the proportion of the rental inventory that is vacant “for rent.”

3.14.2.4 Schools

Within Wichita County, there are five school districts: the Wichita Falls Independent School District (ISD), the Burkburnett ISD, the Iowa Park ISD, the Electra ISD, and the City View ISD. Sheppard AFB is served by the Wichita Falls ISD and the Burkburnett ISD (Military Installations, 2022). The Wichita Falls ISD offers an early childhood learning center, 14 elementary school campuses, three middle school campuses, and three high school campuses, as well as a Head Start and a Career Education Center (Wichita Falls ISD, 2023). The Burkburnett ISD offers three elementary schools, one middle school, one high school, a Head Start, and an Alternative Education Center (Burkburnett ISD, 2023). Additionally, there are 13 private elementary schools, two private middle schools, and two private high schools in the area surrounding Sheppard AFB. The option to homeschool is also available (Military Installations, 2022).

3.14.3 Environmental Consequences

3.14.3.1 Evaluation Criteria

Consequences to socioeconomic resources were assessed in terms of the potential impacts on the local economy from implementation of the Proposed Action and Alternatives. The level of impacts from expenditures associated with the Proposed Action and Alternatives was assessed in terms of direct impacts on the local economy and indirect impacts on other socioeconomic resources (e.g., housing, employment). The magnitude of potential impacts can vary greatly depending on the location of an action. For example, implementation of an action that creates 10 employment positions might be unnoticed in an urban area but might have significant impacts in a rural region. In addition, if potential socioeconomic changes from a Proposed Action result in substantial shifts in population trends or in adverse effects on regional spending and earning patterns, such changes may be considered adverse.

3.14.3.2 Alternative 1 (Preferred Alternative)

Population

Implementation of the Proposed Action under Alternative 1 would not result in a permanent increase of military, contract, or civilian personnel or their dependents to Sheppard AFB or the surrounding environs. Construction activities under Alternative 1 would result in a temporary increase in construction personnel. However, no new in-migration regionally would occur because there are enough existing construction personnel in Wichita County to support the new construction, and the temporary increase would not have an impact on the socioeconomic environment of the region. Based on this information, no adverse impacts to population would occur under this alternative.

Employment

As discussed previously, there would be a need for local construction personnel under Alternative 1 to complete the associated construction actions, which would have a short-term, beneficial impact on regional employment. Implementation of the Proposed Action under Alternative 1 would not result in a permanent increase of personnel of any sort or their dependents to Sheppard AFB or the surrounding environs, and there would be no impact on the availability of employment on the Installation or in the region. Therefore, short-term, minor, beneficial impacts to employment would occur under this alternative.

Housing

Implementation of the Proposed Action under Alternative 1 would not involve the demolition or construction of any housing facilities and would not result in a permanent increase of personnel of any sort or their dependents to Sheppard AFB or the surrounding environs. Therefore, no impacts to housing resources would occur under this alternative.

Schools

Implementation of the Proposed Action under Alternative 1 would not result in a permanent increase of personnel of any sort or their dependents to Sheppard AFB or the surrounding environs. Therefore, no adverse impacts on educational resources would occur under this alternative.

When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects on socioeconomic resources would occur under Alternative 1.

3.14.3.3 Alternative 2

Impacts under Alternative 2 would be the same as under Alternative 1.

3.14.3.4 Cumulative Impacts

The Proposed Action, in addition to past, present, and reasonably foreseeable future actions on and off Sheppard AFB, would not result in an adverse cumulative impact to the region's population, employment, housing, or educational opportunities. Construction projects could result in a cumulative beneficial impact, as local sales and payroll taxes would increase. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs (see **Table 3-1**), no significant cumulative effects to socioeconomics would occur with implementation of the Proposed Action Alternatives.

3.14.3.5 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects, and no impacts to socioeconomic resources would occur. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.14.3.6 Best Management Practices and Mitigation Measures

No BMPs or project-specific mitigation measures are recommended

3.15 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

3.15.1 Definition of the Resource

Federal agencies are directed by EOs to address disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impact of environmental effects and other burdens, and the legacy of racism or other structural or systemic barriers, in communities with environmental justice concerns (CEJCs) and assess environmental health and safety risks to children.

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, pertains to environmental justice issues and relates to various socioeconomic groups and disproportionate impacts that could be imposed on them. This EO requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. EO 12898 was enacted to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

EO 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, signed in April of 2023, builds on and supplements the foundational efforts of EO 12898. It broadens the definition of environmental justice to include income, race, color, national origin, tribal affiliation, or disability. EO 14096 was enacted to strengthen the Federal Government's commitment to deliver environmental justice to all communities in the US via an ambitious approach that utilizes scientific research, high-quality data, and meaningful Federal

engagement with CEJCs, and that makes use of the tools available to the Federal Government, including enforcement of civil rights and environmental laws.

For the purposes of this analysis, populations that could constitute a CEJC, referred to in this analysis as ‘populations of concern,’ are defined as Alaska Natives and American Indians, Asians, Blacks or African-Americans, Native Hawaiians, and Pacific Islanders or persons of Hispanic origin (of any race); low-income populations include persons living below the poverty threshold as determined by the USCB; and youth populations are children under the age of 18 years.

CEJCs and youth populations that could be disproportionately impacted by the project are addressed for the ROI and are compared with those populations in Texas and the US. For further discussion of the specific Indian tribes associated with the ROI, see **Section 3.9** of this PEA.

The ROI for environmental justice and protection of children is Sheppard AFB and the Wichita Falls Census CCD.

3.15.2 Existing Conditions

3.15.2.1 Environmental Justice

An analysis of the populations in the Wichita Falls CCD forms a baseline for the evaluation of the potential for disproportionate impacts on these populations from activities occurring under the Proposed Action. In 2022, the Wichita Falls CCD and Wichita County had lower percentages of the population that identified their race as one of a population of concern compared to the state of Texas and the US (USCB, 2023a) (**Table 3-19**). The percentage of Hispanic or Latino persons was 21.7 in the CCD, 20 in Wichita County, and 18.4 in the US, all three of which were lower than Texas, which was 39.8 percent. Approximately 18.1 percent of the population in Wichita Falls CCD lived below the poverty line, a higher percentage than the other three geographies. In Wichita County, 16.6 percent of the population lived below the poverty line, compared to 14 percent in Texas, and 12.6 percent nationwide (USCB, 2023e).

The percentage of youth in both the Wichita Falls CCD and Wichita County was 22.8 percent, which is higher than the percentage of youth in the nation (22.5 percent), but lower than that of Texas (25.8 percent). (**Table 3-19**).

3.15.3 Environmental Consequences

3.15.3.1 Evaluation Criteria

Environmental justice analysis applies to potential disproportionate and adverse effects on CEJCs and youth populations. Environmental justice issues could occur if an adverse environmental or socioeconomic consequence to the human population fell disproportionately upon minority, low-income, elderly or youth populations. Ethnicity and poverty status were compared to state and national data to determine if these populations could be disproportionately affected by the Proposed Action.

Table 3-19
Total Population and Populations of Concern

Geographic Area	Total Population	Percent Minority	Percent Hispanic or Latino ^a	Percent below Poverty	Percent Youth ^b
United States	329,725,481	31.8	18.4	12.6	22.5
Texas	28,862,581	35.7	39.8	14	25.8
Wichita County	129,419	24.5	20	16.6	22.8
Wichita Falls CCD	1062,65	27.8	21.7	18.1	22.8

Sources: USCB 2023a, 2023e

Notes:

- a. Hispanic and Latino denote a place of origin.
- b. Percent youth are all persons under the age of 18.

3.15.3.2 Alternative 1 (Preferred Alternative)

Under Alternative 1, all proposed actions and associated construction activities would take place within the boundaries of the Installation. No disproportionate adverse effects to CEJCs or youth populations would occur under this alternative.

3.15.3.3 Alternative 2

As with Alternative 1, there would be no disproportionate adverse effects to CEJCs or youth populations under Alternative 2.

3.15.3.4 Cumulative Impacts

When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at Sheppard AFB and in the surrounding environs, no significant cumulative adverse effects to youth populations would occur under the Proposed Action Alternatives. However, the construction of the new, larger CDC as part of a separate planned action (see **Table 3-1**) would result in cumulative beneficial effects to youth populations. No significant cumulative effects to CEJCs would occur with the Proposed Action Alternatives.

3.15.3.5 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the proposed installation development projects and the status of CEJCs and youth populations surrounding Sheppard AFB would remain unchanged from current conditions, and no impacts to these demographics would occur. Sheppard AFB would continue to operate under current conditions, and the facility and infrastructure assets of the Installation would continue to degrade. In the short term, military training and operations would continue at Sheppard AFB in accordance with the status quo. Over time, the mission support capabilities of the Installation would diminish along with its ability to support the future missions and requirements of its tenant activities.

3.15.3.6 Best Management Practices and Mitigation Measures

No BMPs or project-specific mitigation measures are recommended.

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CHAPTER 5 REFERENCES

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**APPENDIX A.
INTERGOVERNMENTAL COORDINATION, PUBLIC AND AGENCY PARTICIPATION**

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 82ND TRAINING WING AND 80TH FLYING TRAINING WING
SHEPPARD AIR FORCE BASE, TEXAS

22 March 2023

Mr. Mark Mc Burnett
Deputy Base Civil Engineer
82 CES/CL
231 9th Avenue, Building 1402
Sheppard Air Force Base, TX 76311-3333

Debra Bills
Field Supervisor
USFWS Ecological Services
2005 NE Green Oaks Blvd
Suite 140
Arlington TX 76006

Dear Ms. Bills

The United States Air Force (Air Force) at Sheppard Air Force Base (AFB), Texas, is preparing an Environmental Assessment (EA) to implement multiple projects to provide improvements necessary to support the mission of Sheppard AFB and its tenant units. The Air Force proposes to implement the projects from approximately 2025 to 2031. To consider possible environmental concerns, the Air Force is engaging early with all potentially affected resource agencies as it formulates the undertaking. Accordingly, the Air Force seeks consultation with your office.

Sheppard AFB is in north-central Texas, approximately 6 miles south of its border with Oklahoma. Situated on nearly 5,300 acres of land in Wichita County, Texas, Sheppard AFB supports diverse aircraft training missions for pilots and operational support specialists. The proposed projects are needed to provide facilities and infrastructure adequate to meet the mission requirements of the 82d Training Wing, the 80th Flying Training Wing, and their tenant units. Left unchecked, deficiencies in facilities and infrastructure would degrade the Base's ability to meet Air Force current and future pilot and operational support training mission requirements.

The Air Force proposes several projects that would include 1 demolition-only project, 4 building construction projects, 1 addition to buildings project, and 11 infrastructure construction projects. All construction projects would also include some renovation or some demolition actions. There are two alternatives being evaluated. However, the number of projects would remain the same for each type of activity. The primary difference between the two alternatives is the footprint for the individual projects. The maps for both alternatives displaying the locations and types of projects are included as **Attachments 1 and 2**.

The EA will assess the potential environmental consequences of the Proposed Action and the No Action Alternative. Potential impacts identified during the initial planning stages include effects on noise; air quality; infrastructure, transportation, and utilities; and biological, cultural, and socioeconomic resources. The EA also will examine the cumulative effects when combined with past, present, and reasonably foreseeable environmental trends and future actions at Sheppard AFB. In support of this process, we request your input in identifying general or specific issues or areas of concern you believe should be addressed in the EA.

We intend to notify your agency when the Draft EA is completed and welcome comments and input at that time as well. Please inform us if someone else within your agency other than you should receive such notification.

So that we remain on schedule to complete the environmental impact analysis process in a timely manner, please provide your response no later than 30 days from receipt of this correspondence. Please send your response via postal mail or email (preferred) to:

ATTN: Ms. Sarah Henneke
82 CES/CEIE-Environmental Compliance
231 9th Avenue, Building 1402
Sheppard Air Force Base, TX, 76311
Email: sarah.henneke.ctr@us.af.mil
Phone: (940) 676-3275

The Air Force appreciates your interest in and support of its military mission at Sheppard AFB. We thank you in advance for your assistance and look forward to your response.

Sincerely,



MARK Mc BURNETT, GS-14, DAF
Deputy Base Civil Engineer

2 Attachments:

1. Map Outlining Proposed Action Alternative 1
2. Map Outlining Proposed Action Alternative 2



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 82ND TRAINING WING AND 80TH FLYING TRAINING WING
SHEPPARD AIR FORCE BASE, TEXAS

22 March 2023

Mr. Mark Mc Burnett
Deputy Base Civil Engineer
82 CES/CL
231 9th Avenue, Building 1402
Sheppard Air Force Base, TX 76311-3333

Vaughn Aldredge
Government Relations Specialist
Texas Historical Commission
P.O. Box 12276
Austin TX 78711

Dear Mr. Aldredge

The United States Air Force (Air Force) at Sheppard Air Force Base (AFB), Texas, is preparing an Environmental Assessment (EA) to implement multiple projects to provide improvements necessary to support the mission of Sheppard AFB and its tenant units. The Air Force proposes to implement the projects from approximately 2025 to 2031. To consider possible environmental concerns, the Air Force is engaging early with all potentially affected resource agencies as it formulates the undertaking. Accordingly, the Air Force seeks consultation with the State Historic Preservation Office.

Sheppard AFB is in north-central Texas, approximately 6 miles south of its border with Oklahoma. Situated on nearly 5,300 acres of land in Wichita County, Texas, Sheppard AFB supports diverse aircraft training missions for pilots and operational support specialists. The proposed projects are needed to provide facilities and infrastructure adequate to meet the mission requirements of the 82d Training Wing, the 80th Flying Training Wing, and their tenant units. Left unchecked, deficiencies in facilities and infrastructure would degrade the Base's ability to meet Air Force current and future pilot and operational support training mission requirements.

Pursuant to Title 36 *Code of Federal Regulations* (CFR) Part 800, implementing Section 106 of the *National Historic Preservation Act* (NHPA), we request your assistance in defining the Area of Potential Effects (APE) and identifying any concerns you may have regarding the potential presence of significant cultural resources in the affected area. The Air Force proposes several projects that would include 1 demolition-only project, 4 building construction projects, 1 addition to buildings project, and 11 infrastructure construction projects. All construction projects would also include some renovation or some demolition actions. There are two alternatives being evaluated. However, the number of projects would remain the same for each type of activity. The primary difference between the two alternatives is the footprint for the individual projects. The maps for both alternatives displaying the locations and types of projects are included as **Attachments 1 and 2**. Based on prior cultural resources investigations and the individual project locations, the Air Force has determined that the Proposed Action would result

in “no adverse effects” on historic properties or sites listed or determined eligible for listing in the National Register of Historic Places (NRHP). There are no NRHP-listed or NRHP-eligible archaeological sites documented to occur on Sheppard AFB, and previous investigations concluded there is a low probability for discovery of such resources. However, should there be an inadvertent discovery for projects involving excavation, the Air Force would comply with all agreed upon procedures in accordance with 36 CFR § 800.6(a)(1).

There are three NRHP-eligible buildings or structures on Sheppard AFB: the Kell Field Air Terminal Building (also a Texas Historical Landmark), Building 2560, and the Alert Apron. None of these resources would be physically affected by the Proposed Action. Temporary viewshed effects would be possible during construction; however, no permanent adverse effects on views to or from NRHP-eligible structures would result from the Proposed Action.

As a consultation, we would appreciate any input regarding concerns of potential effects of the projects on historic properties as well as assistance in defining the APE for the projects. We intend to notify your agency when the Draft EA is completed and welcome comments and input at that time as well. Please inform us if someone else within your organization other than you should receive such notification.

So that we remain on schedule to complete the environmental impact analysis process in a timely manner, please provide your response no later than 30 days from receipt of this correspondence. Please send your response via postal mail or email (preferred) to:

ATTN: Ms. Sarah Henneke
82 CES/CEIE – Environmental Compliance
231 9th Avenue, Building 1402
Sheppard Air Force Base, TX 76311
Email: sarah.henneke.ctr@us.af.mil

The Air Force appreciates your interest in and support of its military mission at Sheppard AFB. We thank you in advance for your assistance and look forward to your response.

Sincerely,



MARK Mc BURNETT, GS-14, DAF
Deputy Base Civil Engineer

2 Attachments:

1. Map Outlining Proposed Action Alternative 1
2. Map Outlining Proposed Action Alternative 2



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 82ND TRAINING WING AND 80TH FLYING TRAINING WING
SHEPPARD AIR FORCE BASE, TEXAS

22 March 2023

Mr. Mark Mc Burnett
Deputy Base Civil Engineer
82 CES/CL
231 9th Avenue, Building 1402
Sheppard Air Force Base, TX 76311-3333

Martina Minthorn
Tribal Historic Preservation Officer
Comanche Nation
P.O. Box 908
Lawton OK 73502

Dear Ms. Minthorn

The United States Air Force (Air Force) at Sheppard Air Force Base (AFB), Texas, is preparing an Environmental Assessment (EA) to implement multiple projects to provide improvements necessary to support the mission of Sheppard AFB and its tenant units. The Air Force proposes to implement the projects from approximately 2025 to 2031. To consider possible environmental concerns, the Air Force is engaging early with all potentially affected Native American tribes as it formulates the undertaking. Accordingly, the Air Force seeks consultation with the Comanche Nation.

Sheppard AFB is in north-central Texas, approximately 6 miles south of its border with Oklahoma. Situated on nearly 5,300 acres of land in Wichita County, Texas, Sheppard AFB supports diverse aircraft training missions for pilots and operational support specialists. The proposed projects are needed to provide facilities and infrastructure adequate to meet the mission requirements of the 82d Training Wing, the 80th Flying Training Wing, and their tenant units. Left unchecked, deficiencies in facilities and infrastructure would degrade the Base's ability to meet Air Force current and future pilot and operational support training mission requirements.

The Air Force proposes several projects that would include 1 demolition-only project, 4 building construction projects, 1 addition to buildings project, and 11 infrastructure construction projects. All construction projects would also include some renovation or some demolition actions. There are two alternatives being evaluated. However, the number of projects would remain the same for each type of activity. The primary difference between the two alternatives is the footprint for the individual projects. The maps for both alternatives displaying the locations and types of the projects are included as **Attachments 1 and 2**.

Pursuant to Section 106 of the *National Historic Preservation Act*, the Air Force seeks to initiate government-to-government consultation on the Proposed Action. The Air Force desires to discuss the proposal in detail with the Comanche Nation so that we may understand and consider any comments, concerns, and suggestions you may have. In particular, we invite you to provide information on any properties of historic, religious, or cultural significance that may be affected by our proposed undertaking. Regardless of whether the Comanche Nation chooses to consult on this project, the Air Force will comply with the *Native American Graves Protection and Repatriation Act* by informing you of any inadvertent discovery of archaeological or human remains and consulting on their disposition. Being defined as a federal undertaking, we will be seeking input and inviting other potential consulting parties, such as the Texas State Historic Preservation Office.

We also intend to notify you when the Draft EA is completed and welcome comments and input at that time as well. Please inform us if someone else within the Comanche Nation other than you should receive such notification.

Should you have any questions about the project or want to arrange a meeting for consultation, please contact me via postal mail or email listed below. So that we remain on schedule to complete the environmental impact analysis process in a timely manner, a response within 30 days would be appreciated.

ATTN: Mr. Mark McBurnett
Deputy Base Civil Engineer/Installation Tribal Liaison Officer
82 CES/CC
231 9th Avenue Building 1402
Sheppard Air Force Base, TX 76311
Email: mark.mcburnett@us.af.mil

The Air Force appreciates your interest in and support of its military mission at Sheppard AFB. We thank you in advance for your assistance and look forward to your response.

Sincerely,

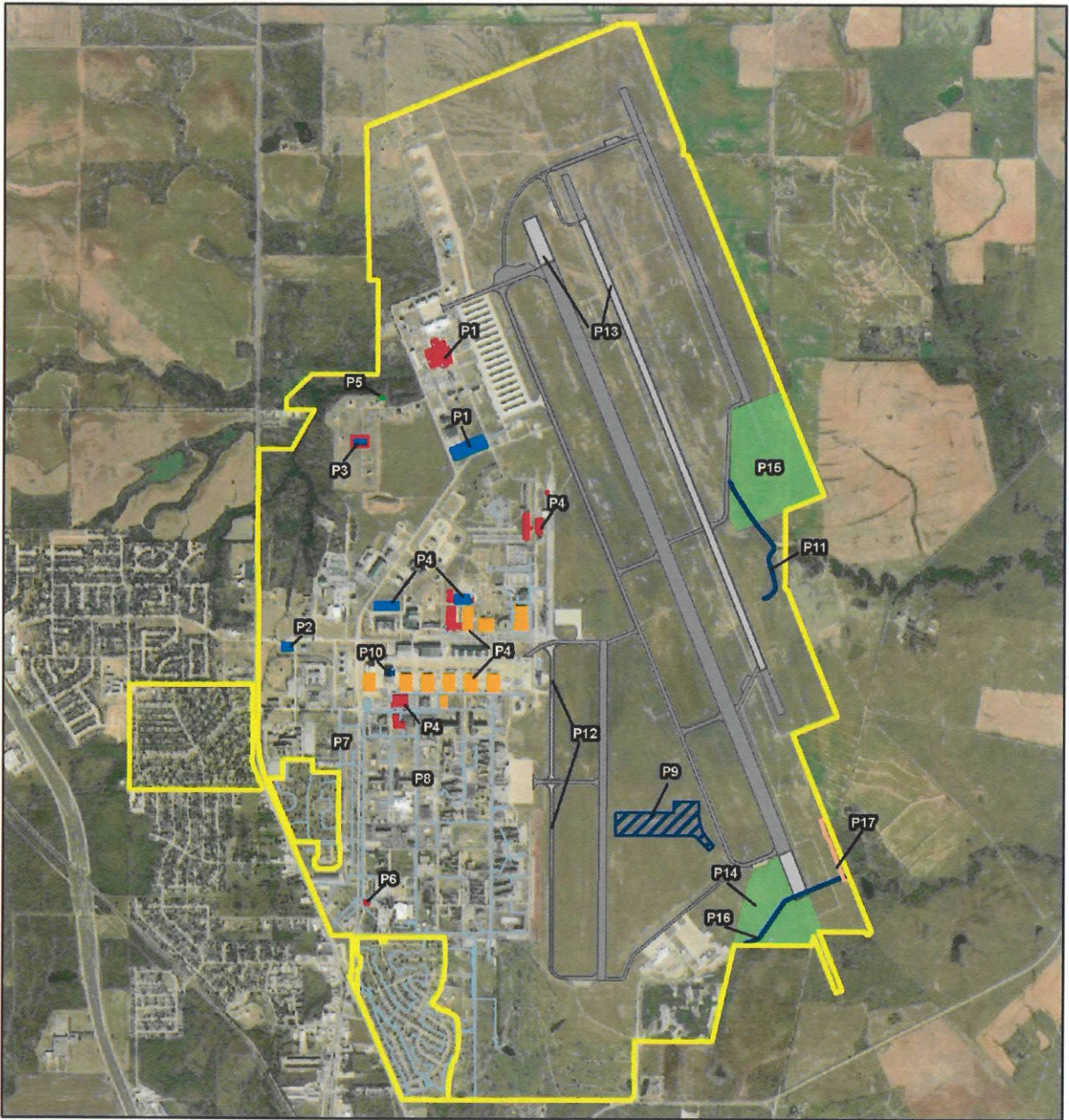


MARK Mc BURNETT, GS-14, DAF
Deputy Base Civil Engineer

2 Attachments:

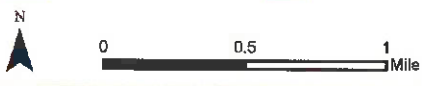
1. Map Outlining Proposed Action Alternative 1
2. Map Outlining Proposed Action Alternative 2

Attachment 1 – Map Outlining Proposed Action Alternative 1

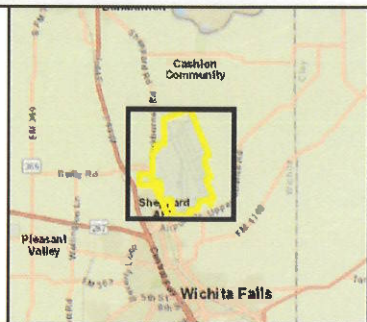


ATTACHMENT 1
Project Locations: Alternative 1

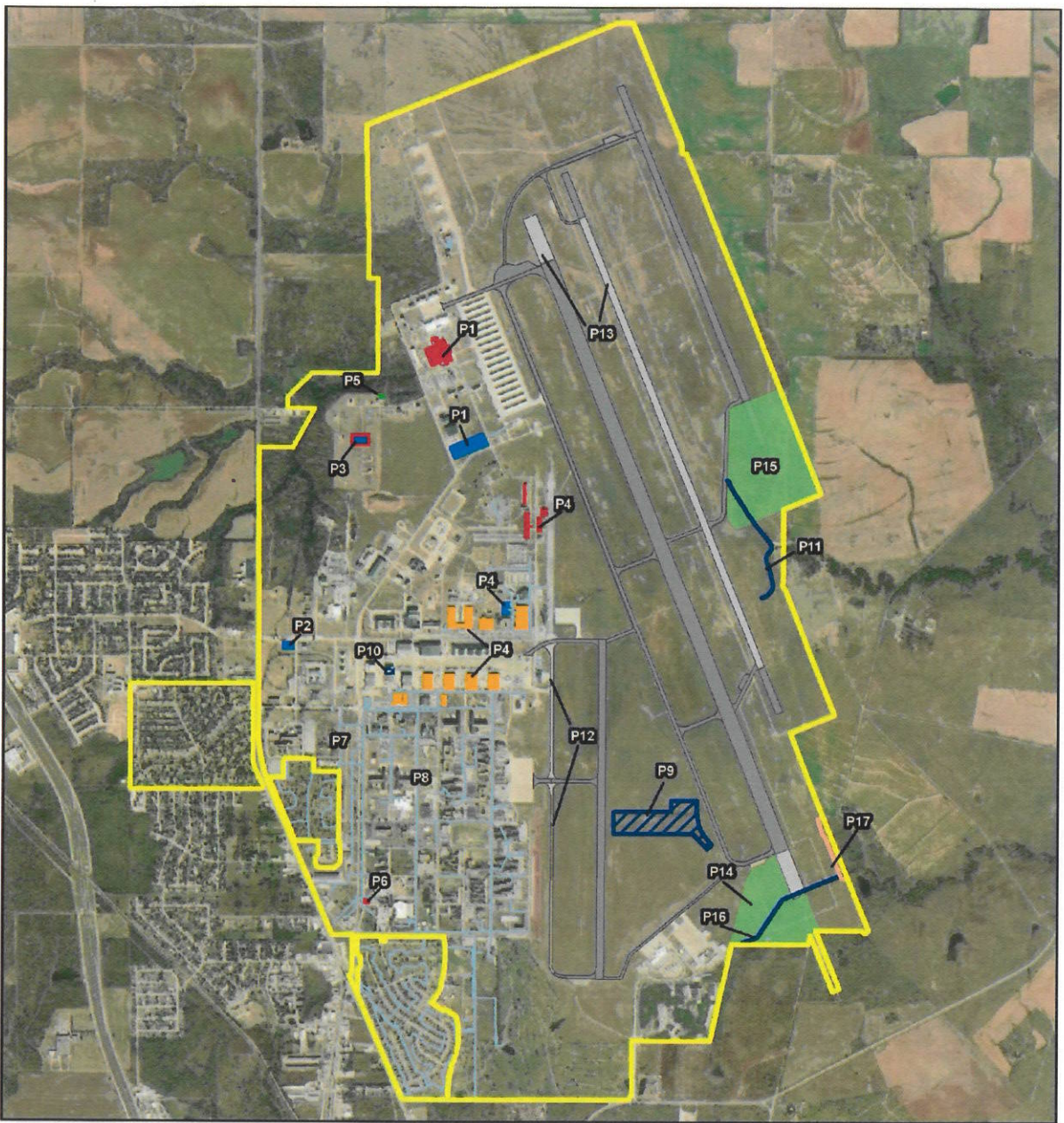
- | | | |
|-----------------------|------------------------|-----------------------|
| Electrical Lines | Drainage Repair Area | Building Construction |
| Drainage Line | Airfield Pavement | Demolition |
| Fence | Airfield Project Area | Grading Area |
| Installation Boundary | Additions to Buildings | Renovation |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



Attachment 2 – Map Outlining Proposed Action Alternative 2

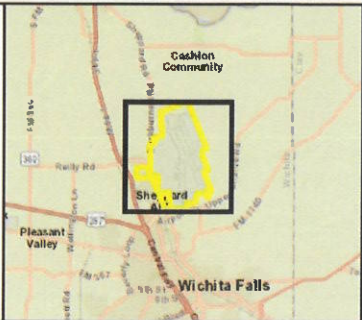


ATTACHMENT 2
Project Locations: Alternative 2

- | | | |
|-----------------------|------------------------|-----------------------|
| Electrical Lines | Drainage Repair Area | Building Construction |
| Drainage Line | Airfield Pavement | Demolition |
| Fence | Airfield Project Area | Grading Area |
| Installation Boundary | Additions to Buildings | Renovation |



Imagery: ESRI, 2021
Coordinate System: NAD 83 UTM Zone 14N



HENNEKE, SARAH J CTR USAF AETC 82 CES/CEIE

From: Peter Schaefer <peter.schaefer@tceq.texas.gov>
Sent: Monday, May 1, 2023 12:47 PM
To: HENNEKE, SARAH J CTR USAF AETC 82 CES/CEIE
Subject: [Non-DoD Source] Sheppard Air Force Base Environmental Assessment

Ms. Henneke,

I received your letter dated March 22, 2023 requesting TCEQ's input in identifying general or specific issues or areas of concern we believe should be addressed in the EA. Here are some general items that we will be looking for should a state 401 Water Quality Certification of a federal 404 permit be required.

1. Identification of all waters of the U.S. that will be impacted from the proposed activities. This includes wetlands, streams, and open water shoreline.
2. Explanation of how impacts to waters of the U.S. have been avoided and/or minimized to the greatest extent practicable.
3. Explanation of how unavoidable impacts to waters of the U.S. will be mitigated. This should include:
 - a. Appropriate functional assessment of aquatic resources to be impacted.
 - b. Appropriate mitigation plan consistent with the USACE 2008 Mitigation rule.
4. Explanation of how on-site water quality will be addressed to ensure maintenance of water quality.

If you have any questions, don't hesitate to reach out to me. In the meantime, I'll be on the lookout for the Draft EA once it is available.

Thanks,

Peter

Peter Schaefer, Team Leader
Standards Implementation Team (MC 150)
Water Quality Assessment Section
Water Quality Division, TCEQ
email: peter.schaefer@tceq.texas.gov <mailto:firoj.vahora@tceq.texas.gov>
phone: 512-239-4372
fax: 512-239-4420



April 12, 2023

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David Yoskowitz, Ph.D.
Executive Director

Ms. Sarah Henneke
82 CES/CEIE-Environmental Compliance
231 9th Avenue, Building 1402
Sheppard Air Force Base, TX 76311

RE: Sheppard Air Force Base Environmental Assessment to implement multiple projects, Wichita County, Texas

Dear Ms. Henneke:

Texas Parks and Wildlife Department (TPWD) has received the request for review regarding the proposed project referenced above. TPWD staff has reviewed the information provided and offers the following comments concerning this project.

Project Description

The United States Air Force (Air Force) at Sheppard Air Force Base (AFB), Texas, is preparing an Environmental Assessment (EA) to implement multiple projects to provide improvements necessary to support the mission of Sheppard AFB and its tenant units. The Air Force proposes to implement the projects from approximately 2025 to 2031.

Federal Laws

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits taking, attempting to take, capturing, killing, selling, purchasing, possessing, transporting, and importing of migratory birds, their eggs, parts, or nests, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The U.S. Fish and Wildlife Service (USFWS) Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.

Potential impacts to migratory birds may occur during site preparation and grading activities through the disturbance of existing vegetation (grass, trees, and shrubs) and bare ground that may be occupied by active bird nests.

Recommendation: TPWD recommends the EA evaluate potential impacts to nesting birds from the proposed project activities. Potential

Ms. Sarah Henneke
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April 12, 2023

adverse impacts to nesting birds can be avoided or minimized by scheduling vegetation clearing outside of the general bird nesting season, March 15 through September 15. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance to ensure that no nests with eggs or young will be disturbed by construction. Nest surveys should be conducted not more than five days prior to clearing activities to maximize detection of active nests. TPWD generally recommends a 100-foot radius buffer of vegetation remain around active nests until the eggs have hatched and the young have fledged; however, the size of the buffer zone depends on various factors and can be coordinated with the local or regional USFWS office.

State Laws

Parks and Wildlife Code – Chapter 64, Birds

Texas Parks and Wildlife Code (PWC) Section 64.002, regarding protection of nongame birds, provides that no person may catch, kill, injure, pursue, or possess a bird that is not a game bird. PWC Section 64.003, regarding destroying nests or eggs, provides that no person may destroy or take the nests, eggs, or young and any wild game bird, wild bird, or wild fowl.

Recommendation: Please review the *Federal Law: Migratory Bird Treaty Act* section above for recommendations as they are also applicable for PWC Chapter 64 compliance.

Parks and Wildlife Code, Section 68.015

PWC Section 68.015 regulates state listed threatened and endangered animal species. The capture, trap, take, or killing of state listed threatened and endangered animal species is unlawful unless expressly authorized under a permit issued by USFWS or TPWD. A copy of *TPWD Guidelines for Protection of State Listed Species*, which includes a list of penalties for take of species, can be found on the TPWD website.

Recommendation: TPWD recommends reviewing the most current TPWD county list of rare, threatened, and endangered species for Wichita County. The county lists are available on the TPWD website. TPWD

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recommends the EA evaluate potential impacts from the proposed project activities to rare, threatened, and endangered species.

General Construction Recommendations

TPWD would like to provide the following general construction recommendations to assist in project planning.

Recommendation: TPWD recommends that the removal of native vegetation during construction be minimized to the extent feasible. Unavoidable removal of vegetation should be mitigated by revegetating disturbed areas with site specific plant species where feasible. The replacement of native plants will help control erosion, provide habitat for wildlife, and provide native species an opportunity to compete with undesirable, non-native, invasive plant species.

Where trenching or other excavation is involved in construction, TPWD recommends that contractors keep trenching and excavation, and backfilling crews close together to minimize the number of trenches or excavation areas left open at any given time during construction. TPWD recommends that any open trenches or excavation areas be covered overnight and inspected every morning to ensure no wildlife species have been trapped.

For soil stabilization and revegetation of disturbed areas within the proposed project area, TPWD recommends erosion and seed and mulch stabilization materials that avoid entanglement hazards to snakes and other wildlife species. Because the mesh found in many erosion control blankets or mats pose an entanglement hazard to wildlife, TPWD recommends the use of no-till drilling, hydromulching, or hydroseeding rather than erosion control blankets or mats due to a reduced risk to wildlife. If erosion control blankets or mats are used, the product should contain no netting or contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic mesh matting and hydromulch containing microplastics should be avoided.

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April 12, 2023

Future correspondence regarding this project can be submitted to
WHAB@tpwd.texas.gov.

Please contact me at Richard.Hanson@tpwd.texas.gov or (806) 761-4930 ext.
4936 if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Rick Hanson". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Rick Hanson
Ecological and Environmental Planning Program
Wildlife Division

RH: 50456

COMANCHE NATION



Headquarters 82nd Training Wing and 80th Flying Training Wing
Attn: Mr. Mark McBurnett
231 9th Avenue Building 1402
Texas 76311

April 18, 2023

Re: Sheppard Air Force Base (AFB), Texas is preparing an Environmental Assessment (EA) to Implement multiple projects to provide improvements necessary to support the mission of Sheppard AFB and its tenant units.

Dear Mr. McBurnett:

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of "**No Properties**" have been identified. (IAW 36 CFR 800.4(d)(1)).

Please contact this office at (580) 492-1153) if you require additional information on this project.

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.

Regards

Comanche Nation Historic Preservation Office
Theodore E. Villicana , Technician
#6 SW "D" Avenue, Suite C
Lawton, OK. 73502

Consult Response delayed due to Covid-19 work conditions.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
501 West Felix Street
Suite 1105
Fort Worth, TX 76115-3410
Phone: (817) 277-1100 Fax: (817) 277-1129
Email Address: arles@fws.gov

In Reply Refer To:

June 01, 2023

Project Code: 2023-0088416

Project Name: NEPA Compliance for 82nd TRW Area Development Plan at Sheppard Air Force Base, Wichita Falls, Texas

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

To Whom It May Concern:

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under section 7(a)(1) of the Act, Federal agencies are directed to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Under and 7(a)(2) and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether their actions may affect threatened and endangered species and/or designated critical habitat. A Federal action is an activity or program authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02).

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For Federal actions other than major construction activities, the Service suggests that a biological evaluation (similar to a Biological Assessment) be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

After evaluating the potential effects of a proposed action on federally listed species, one of the following determinations should be made by the Federal agency:

1. *No effect* - the appropriate determination when a project, as proposed, is anticipated to have no effects to listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, the action agency should maintain a complete record of their evaluation, including the steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information.
2. *May affect, but is not likely to adversely affect* - the appropriate determination when a proposed action's anticipated effects to listed species or critical habitat are insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and should never reach the scale where "take" of a listed species occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the Service. A biological evaluation or other supporting information justifying this determination should be submitted with a request for written concurrence.
3. *May affect, is likely to adversely affect* - the appropriate determination if any adverse effect to listed species or critical habitat may occur as a consequence of the proposed action, and the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

The Service has performed up-front analysis for certain project types and species in your project area. These analyses have been compiled into *determination keys*, which allows an action agency, or its designated non-federal representative, to initiate a streamlined process for determining a proposed project's potential effects on federally listed species. The determination keys can be accessed through IPaC.

The Service recommends that candidate species, proposed species, and proposed critical habitat be addressed should consultation be necessary. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at: <https://www.fws.gov/service/section-7-consultations>

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (<https://www.fws.gov/library/collections/bald-and-golden-eagle-management>). Additionally, wind energy projects should follow the wind energy guidelines (<https://www.fws.gov/media/land-based-wind-energy-guidelines>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation>. The Federal Aviation Administration (FAA) released specifications for and made mandatory flashing L-810 lights on new towers 150-350 feet AGL, and the elimination of L-810 steady-burning side lights on towers above 350 feet AGL. While the FAA made these changes to reduce the number of migratory bird collisions (by as much as 70%), extinguishing steady-burning side lights also reduces maintenance costs to tower owners. For additional information concerning migratory birds and eagle conservation plans, please contact the Service's Migratory Bird Office at 505-248-7882.

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

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

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

This species list is provided by:

Arlington Ecological Services Field Office

501 West Felix Street

Suite 1105

Fort Worth, TX 76115-3410

(817) 277-1100

PROJECT SUMMARY

Project Code: 2023-0088416

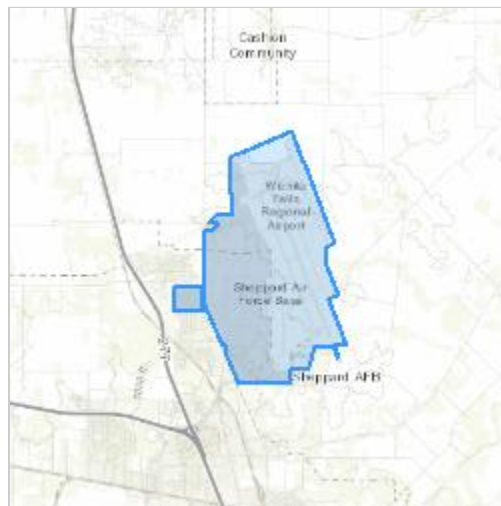
Project Name: NEPA Compliance for 82nd TRW Area Development Plan at Sheppard Air Force Base, Wichita Falls, Texas

Project Type: Military Operations

Project Description: Environmental Assessment for Area Development Plan at Sheppard Air Force Base. Building renovation and demo as well as utilities renovation and drainage repair.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@33.98661625,-98.50130317137658,14z>



Counties: Wichita County, Texas

ENDANGERED SPECIES ACT SPECIES

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

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

MAMMALS

NAME	STATUS
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane <i>Grus americana</i> Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

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

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Jul 31
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

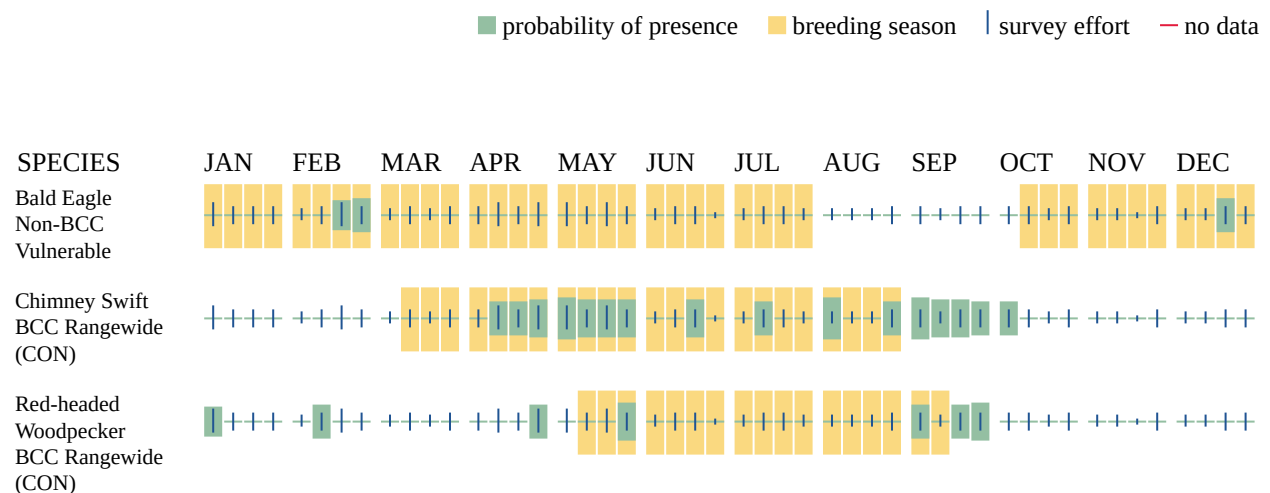
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
 2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
 3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).
-

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- [PUBFx](#)
- [PUSCh](#)
- [PUBHh](#)
- [PUBFh](#)
- [PUBF](#)
- [PUSCx](#)

FRESHWATER EMERGENT WETLAND

- [PEM1Fx](#)
- [PEM1A](#)
- [PEM1C](#)
- [PEM1F](#)

RIVERINE

- [R4SBCx](#)
- [R5UBFx](#)
- [R5UBH](#)
- [R4SBC](#)

FRESHWATER FORESTED/SHRUB WETLAND

- [PSS1Ch](#)
-

IPAC USER CONTACT INFORMATION

Agency: Air Force
Name: William Drawdy
Address: 107 Lynnwood Rd
City: Walterboro
State: SC
Zip: 29488
Email: bdrawdy@easbio.com
Phone: 8438936498

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**APPENDIX B.
PUBLIC NOTICES**

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Times Record News

PART OF THE USA TODAY NETWORK

PROOF OF PUBLICATION

ENVIRONMENTAL ASSESSMENT SVCS
350 HILLS ST #112
RICHLAND, WA 99354
ATTN BILLY DRAWDY

STATE OF WISCONSIN, COUNTY OF BROWN:

On this May 15th, 2023 AD, personally appeared before me the undersigned authority for the Times Publishing Company of Wichita Falls, publishers of the Wichita Falls in Wichita County, Texas, and of general circulation in said county, and upon being duly sworn by me, on oath states that the attached advertisement is a true and correct copy of advertising published in day (2) issues hereof on the following date:

MAY 14TH, 2023,
MAY 15TH, 2023

Subscribed and sworn to before me on May 15th, 2023

Legal Clerk



Notary Public, State of Wisconsin, County of Brown

1-7-26

My commission expires

KATHLEEN ALLEN
Notary Public
State of Wisconsin

Publication Cost: \$1,847.12
Ad No: GCI1059903
Customer No: 771209
PO #: PUBLIC NOTICE

**NOTICE FOR EARLY PUBLIC REVIEW OF
PROPOSED ACTIVITIES WITHIN FLOODPLAINS –
UNITED STATES AIR FORCE**

The U.S. Air Force (USAF) is inviting early public input on proposed activities at Sheppard Air Force Base (AFB) with potential to affect floodplains resources. The USAF is proposing to implement multiple area development plan (ADP) projects addressing deficiencies in the condition and capabilities of various Sheppard AFB facilities and infrastructure systems. These proposed projects would address inadequate and obsolete facilities and infrastructure components through demolition, renovation, repair, and construction actions, allowing Sheppard AFB to continue meeting current and future mission and training requirements. Several project sites would be located within, or adjacent to, the identified 100-year floodplain.

The Proposed Action would implement 17 short-, medium-, and long-term projects involving construction, demolition, renovation, and infrastructure improvement actions. To comply with the National Environmental Policy Act (NEPA), the USAF is preparing an Environmental Assessment (EA) to analyze the potential environmental impacts of the Proposed Action and Alternatives. The Draft EA will be available for public review and comment in late summer of 2023.

Because select projects under consideration at Sheppard AFB would affect or potentially affect floodplains under USAF management, this early notice seeks public input on any practical alternatives to avoid or minimize adverse effects on these natural resources. As the projects are currently in the pre-planning stage, additional details will be made available in the forthcoming Draft EA for public review. The USAF plans to use the NEPA process to comply with Executive Orders (EOs) 11988, Floodplain Management; 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input; and 11990, Protection of Wetlands.

Accordingly, the USAF seeks your input with respect to potential effects on floodplains that could result from the Proposed Action and Alternatives at Sheppard AFB. Public comments received in response to this notice, as well as those received through public participation in the NEPA process currently underway, will assist the USAF to comply with its obligations under the EOs noted above.

Please address written comments to the USAF 82 CES/CEI, ATTN: Ms. Rhonda Lofgren, 231 9th Avenue, Bldg 1402, Sheppard AFB, TX 76311, or via email (preferred) to rhonda.lofgren.ctr@us.af.mil.



From left is Robert French with the DAV, Marie French, Brad Rogers of Foundation Auto, Joel Jimenez and Gordon Lofgren. CONTRIBUTED PHOTO FROM JOEL JIMENEZ

DAV thanks Foundation Automotive for sponsorship

Wichita Falls Times Record News
USA TODAY NETWORK - TEXAS

The 12th annual Disabled American Veterans Chapter 41 golf tournament was a success because of wonderful sponsors, said DAV chapter president Joel Jimenez.

They would like to thank sponsor Foundation Automotive of Wichita Falls.

From left is Robert French with the DAV, Marie French, Brad Rogers of Foundation Auto and Gordon Lofgren.

People

Continued from Page 6A

Amphitheater in Quincy, Washington.

Mitchell was honored as MusicCares' Person of the Year during this year's Grammy festivities and she accepted a Grammy for best historical album. She was also the 2023 recipient of the Library of Congress Gershwin Prize for Popular Song, and performed a sultry version of "Summertime."

New book on Dylan will feature hundreds of rare images

Hundreds of rare photos and other images from the archives of singer-songwriter Bob Dylan will be featured in "Bob Dylan: Mixing Up the Medicine," coming out this fall. The new release also will include dozens of essays, with novelist Michael Ondaatje, critic Greil Marcus and former U.S. poet laureate Joy Harjo among the contributors.

Callaway Arts & Entertainment announced Thursday that the 600-page book will come out Oct. 24. The founder of Callaway, Nicholas Callaway, said in a statement that "Mixing Up the Medicine" will "introduce the full scope of this artist's monumental creativity and achievements to a new generation."

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NOTICE FOR EARLY PUBLIC REVIEW OF PROPOSED ACTIVITIES WITHIN FLOODPLAINS - UNITED STATES AIR FORCE

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Ask about our FREE 2 WEEK TRIAL!

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Migrants push north despite rule change

Incentives to seek refuge still remain, experts say

Megan Janetsky
ASSOCIATED PRESS

MEXICO CITY — For weeks, Solangel Contreras raced.

The Venezuelan migrant and her family of 22 trudged through the dense jungles of the Darien Gap and hopped borders across Central America.

They joined thousands of other migrants from across the Hemisphere in a scramble to reach the United States-Mexico border and request asylum.

They raced, unsure what changing migratory rules and the end of a pandemic-era border restriction, Title 42, would mean for their chances at a new life in the U.S.

But after missing that cutoff, robbed in Guatemala and crossing into Mexico shortly after the program ended Thursday night, Contreras, 33, had only one certainty in her mind: "We're going to keep going."

Confusion has rippled from the U.S.-Mexico border to migrant routes across the Americas, as migrants scramble to understand complex and ever-changing policies. And while Title 42 has come to an end, the flow of migrants headed north has not.

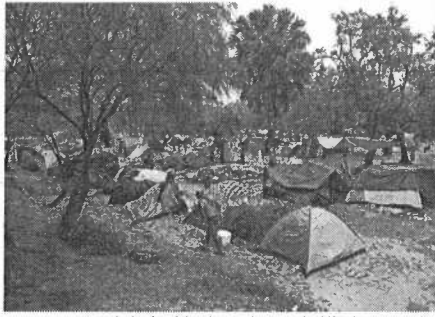
From the tolling mountains and jungles in Central America to the tops of trains roaring through Mexico, migrants from Venezuela, Cuba, Haiti, Colombia, Nicaragua, Ecuador and beyond push forward on their journeys.

"We've already done everything humanly possible to get where we are," Contreras said, resting in a park near a river dividing Mexico and Guatemala.

The problem, experts say, is that while migration laws are changing, root causes pushing people to flee their countries in record numbers only stretch on.

"It doesn't appear to be the case that this is going to curb the push or pull factors for migration from Central America, South America and other parts of the world," said Falko Ernst, senior analyst for International Crisis Group in Mexico.

"The incentives for people to flee and seek refuge in safe havens in the United



Tents are set up on the banks of the Rio Grande at a makeshift migrant camp in Matamoros, Mexico. As the U.S. ended its pandemic-era immigration restrictions, migrants are adapting to new asylum rules and legal pathways meant to discourage illegal crossings. FERNANDO LLANO/AP

States are still in place."

For Contreras, that push came after her brother was killed in Ecuador for not paying extortions to a criminal group. The family had been living in a small coastal town in the south after fleeing economic crisis in Venezuela two years earlier.

Others, like 25-year-old migrant Gerardo Escobar, left in search of a better future after struggling to make ends meet in Venezuela like Contreras' family.

Escobar trekked along train tracks Friday morning just outside Mexico City, with 60 other migrants, including families and small children. They hoped to climb aboard a train migrants have used for decades to carry them on their dangerous journey.

Escobar was among many to say he had no clue what the end of Title 42 would mean, and he didn't particularly care.

"My dream is to get a job, eat well, help my family in Venezuela," he said. "My dream is to move forward."

Despite misinformation prompting a rush to the border last week, analysts

"My dream is to get a job, eat well, help my family in Venezuela. My dream is to move forward."

Gerardo Escobar
25-year-old migrant from Venezuela

and these providing refuge to migrants said that they don't expect new policies to radically stem the flow of migrants.

Title 42 allowed authorities to use a public health law to rapidly expel migrants crossing over the border, denying them the right to seek asylum. U.S. officials turned away migrants more than 2.8 million times under the order.

New rules strip away that ability to simply expel asylum seekers, but add stricter consequences to those not going through official migratory channels. Migrants caught crossing illegally will not be allowed to return for five years and can face criminal prosecution if they do.

The Biden administration has also set caps on the amount of migrants al-

lowed to seek asylum.

At the same time, Biden is likely to continue American pressure on Mexico and other countries to make it harder for migrants to move north.

Mexico's Secretary of Foreign Affairs Marcelo Ebrard said they don't agree with the Biden administration's decision to continue to put up migratory barriers.

"Our position is the opposite, but we respect (U.S.) jurisdiction," Ebrard said.

Yet in a news briefing on Friday, he announced Mexico would carry out speedier deportations, and that it would no longer give migrants papers to cross through Mexico.

While the new rules likely won't act as a strong deterrent, Ebrard and the head of a migrant shelter in Guatemala said they saw a drop in the number of migrants they encountered immediately following the rush on the U.S. border. Though the shelter leader said numbers have been slowly picking up.

Still, migrants continued to make it across the U.S. border, even as the new rules were announced. At a cemetery near Roma, Texas, about 60 migrants who had crossed the Rio Bravo were waiting to be processed around midnight. They included a large group of Chinese migrants who huddled for cover under a driving rain.

Ernst, of International Crisis Group, warned that such measures could make the already deadly journey even more dangerous.

"You'll see an increase in populations that remain vulnerable for criminal groups to prey on, to recruit from and make a profit from," he said. "It could just feed into the hands of these criminal groups."

Meanwhile, Contreras continues trucking forward alongside many other migrants, even with no clear pathway forward and little information about what awaits them at the border.

"It's worth it, she said, to give a better life to small children traveling with them.

"We've fought a lot for them (the kids)," she said. "All we want is to be safe, a humble home where they can study, where they can eat well. We're not asking for much. We're just asking for peace and safety."

NATION AND WORLD BRIEFS

Minneapolis city council nomination brawl leaves 2 injured; no candidate chosen

MINNEAPOLIS — A brawl broke out over nominations for Minneapolis City Council candidates, leaving at least two people injured, a newspaper reported.

The scuffle arose during the Democratic-Farmer-Labor Party's endorsing convention for Minneapolis Ward 10, held Saturday at a magnet school in the city, the Star Tribune reported.

Video posted on social media showed the disturbance began after supporters of Minneapolis Council Member Aisha Chughtai took the stage, which caused an uproar among supporters of her challenger, Nasri Warsame. Some Warsame supporters jumped on stage, shouting, banging on tables and waving signs, the paper reported.

Convention chair Sam Doten called the behavior embarrassing and adjourned the event without a nominee being chosen, saying it was no longer safe.

Wagner head: Russia may have downed own aircraft

The head of Russia's feared Wagner private army suggested Sunday that four Russian military aircraft that reportedly crashed in a region that borders Ukraine may have been shot down by Russia's own forces.

Russian officials have not commented on reports in Russian conventional and social media that two fighter planes — an Su-34 and an Su-35 — and two military Mi-8 helicopters crashed in the Bryansk region on Saturday.

State news agency Tass cited unspecified emergency services sources as saying the Su-34 and one helicopter crashed. Other sources, including Vladimir Rogov, the head of a Russian collaborationist organization in Ukraine's Zaporizhzhia province, claimed four aircraft went down.

All of them reportedly belonged to the same military air group.

Detroit suburb shuts down festival amid reports of people with guns

DETROIT — Officials in a northern Detroit suburb have decided to shut down an annual festival a day early after fights broke out and reports of guns in the crowd sent patrons fleeing.

The annual Berkley Days festival began on Thursday and was slated to run through Sunday. The Detroit News reported that several fights broke out at the festival around 7 p.m. Saturday.

The Berkley Department of Public Safety said in a statement that shortly after officers responded to the fights reports of people with guns in the crowd sent patrons running in different directions. Officials decided to cancel the festival for the remainder of the festival around 7 p.m. Saturday.

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Report: Rescue completed after partial collapse of NM bridge

LOS LUNAS, N.M. — First responders completed a search for victims after a bridge over a New Mexico river partially collapsed Saturday night.

Los Lunas Fire Chief John Gabaldon said two people were rescued after the Los Lunas River Bridge collapsed, KOAT-TV reported.

Emergency crews initially searched for additional victims, but Gabaldon confirmed later in the night there were no other people trapped or believed to be missing.

Traffic was closed in both directions for the bridge in the community about 24 miles south of Albuquerque.

Emergency crews were attempting to determine whether a sinkhole under a sidewalk caused the collapse, KOAT reported.

Suspected Islamic extremists kill 33 in Burkina Faso

OUAGADOUGOU, Burkina Faso — An attack by suspected Islamic extremists on a village in the west of Burkina Faso killed 33 civilians, the provincial governor's office said.

The provisional death toll from the Thursday evening attack on the village of Youlout in Mouhoun province was announced in a press release.

Provincial governor Babo Pierre Bassinga called the attack "cowardly and barbaric." He said in the statement that the attack happened around 5 p.m. as residents were at work in their fields beside the Mouhoun river. The governor said security actions were underway to counter the extremists.

Bassinga urged the population to increase their vigilance and to collaborate with security forces.

Gatwick airport shuts runway after reports of drone activity

LONDON — London's Gatwick Airport closed its runway for almost an hour Sunday after a drone was reported nearby.

Officials at Britain's second-busiest airport said 12 incoming flights had to be diverted to other airports. The airport said that "following established procedures, operations at London Gatwick were suspended temporarily" at 1:44 p.m. "while investigations into the sighting of a suspected drone close to the airfield took place."

The airport reopened about 50 minutes later. A Gatwick spokesperson was unable to say whether a drone had been discovered.

Shooting in downtown Louisville, Kentucky, leaves 1 dead, 4 wounded

LOUISVILLE, Ky. — A shooting sparked by a dispute inside a business left one person dead and four wounded in downtown Louisville, Kentucky, authorities said Sunday.

Officers were called to the shooting about 11 p.m. Saturday, Louisville Metro Police Department spokeswoman Alecia Smiley said in a news release.

Two men and two women were found wounded in one location and taken to a hospital, Smiley said. One of the men was in critical condition and the other three

were stable, she said.

Another man was found shot a short distance away and was also taken to a hospital, where he died, Smiley said. He was identified by the Jefferson County Coroner's Office as Demontae Jakwan Tyreek Marshall, 22.

No arrests were immediately reported. Homicide detectives were investigating.

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The Proposed Action would implement 17 short-, medium-, and long-term projects involving construction, demolition, renovation, and infrastructure improvement actions. To comply with the National Environmental Policy Act (NEPA), the USAF is preparing an Environmental Assessment (EA) to analyze the potential environmental impacts of the Proposed Action and Alternatives. The Draft EA will be available for public review and comment in late summer of 2023.

Because select projects under consideration at Sheppard AFB would affect or potentially affect floodplains under USAF management, this early notice seeks public input on any practical alternatives to avoid or minimize adverse effects on these natural resources. As the projects are currently in the pre-planning stage, additional details will be made available in the forthcoming Draft EA for public review. The USAF plans to use the NEPA process to comply with Executive Orders (EOs) 11988, Floodplain Management, 13650, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, and 11990, Protection of Wetlands.

Accordingly, the USAF seeks your input with respect to potential effects on floodplains that could result from the Proposed Action and Alternatives at Sheppard AFB. Public comments received in response to this notice, as well as those received through public participation in the NEPA process currently underway, will assist the USAF to comply with its obligations under the EOs noted above.

Please address written comments to the USAF 82 CES/CEI, ATTN: Ms. Rhonda Lofgren, 231 9th Avenue, Bldg 1402, Sheppard AFB, TX 76311, or via email (preferred) to rhonda.lofgren@us.af.mil

**APPENDIX C.
AIR CONFORMITY APPLICABILITY MODEL ANALYSIS**

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AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA) - ALTERNATIVE 1

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

a. Action Location:

Base: SHEPPARD AFB
State: Texas
County(s): Wichita
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: 82d Training Wing and 80th Flying Training Wing Area Development Plans for Sheppard Air Force Base

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2024

e. Action Description:

Under Alternative 1, the Proposed Action would involve building construction, building additions, demolition-only, and infrastructure/utilities construction projects (Figures 2-3–2-8). Under Alternative 1, four new construction projects, a single building addition project, and a single demolition-only project would add approximately 344,933 ft² of new building space and demolish approximately 392,395 ft² of building space. These projects would result in a net change in facility footprint of -47,462 ft². The four construction projects would also include the renovation of approximately 654,266 ft² of preexisting building space.

Under Alternative 1, two infrastructure/utilities construction projects would replace approximately 58,284 lf of existing underground and overhead lines with new underground lines. Three infrastructure/utilities construction projects would replace, repair, or install approximately 14,400 lf of drainage system. One infrastructure/utilities project would install approximately 700 lf of drainage system and repair approximately 16,516 ft² of concrete foundation. One infrastructure/utilities construction project would install approximately 23,992.4 lf of drainage, repair/maintain approximately 2,399,418 ft² of airfield pavement, and add approximately 239,924 ft² of airfield pavement. One infrastructure/utilities construction project would demolish approximately 141,260 ft² of airfield pavements. Under Alternative 1, three other infrastructure/utilities construction projects would grade approximately 105 acres of hilly area and relocate approximately 1,300 lf of fencing.

Overall, projects included under Alternative 1 would result in a net increase of approximately 50,202 ft² of new impervious surface area. All proposed projects would meet the selection standards and would remedy facility deficiencies, be consistent with land use requirements, increase operational efficiencies and sustainable development, and improve the quality of life.

The project list under Alternative 2 would remain the same as Alternative 1 with the following exceptions:

- Project 4 – Buildings 1900, 1921, 1927, 920, 960, 1040, 1060, 1080, and 1090 would be renovated (658,192 ft² total). Buildings 2001, 2010, 2012, and 2014 would be demolished (83,741 ft² total). A new 35,000-ft² Power Pro training facility would be constructed.
- Project 7 – No underground lines would be installed or replaced, and approximately 13,330 lf of existing overhead lines would be replaced with overhead conductors and pad-mounted transformers.
- Project 8 – No underground lines would be installed or replaced, and approximately 5,455 lf of existing overhead lines would be replaced with overhead conductors and pad-mounted transformers.
- Project 12 – The existing abandoned taxiway would be left as is, the mandatory closed pavement markings would continue to be maintained, and any FOD-producing hazards would be corrected.

AIR CONFORMITY APPLICABILITY MODEL REPORT

RECORD OF AIR ANALYSIS (ROAA)

Under Alternative 2, the Proposed Action would include building construction, building addition, demolition-only, and infrastructure/utilities construction projects. Under Alternative 2, four new construction projects, a single building addition project, and a single demolition-only project would add approximately 204,933 ft² of new building space and would demolish approximately 246,929 ft² of building space. These projects would result in a net change in facility footprint of -41,996 ft². The four construction projects would also include the renovation of approximately 658,192 ft² of preexisting building space.

Under Alternative 2, two infrastructure/utilities construction projects would replace approximately 18,785 lf of existing overhead lines with overhead conductors and pad-mounted transformers. Three infrastructure/utilities construction projects would replace, repair, or install approximately 14,000 lf of drainage system. One infrastructure/utilities project would install approximately 700 lf of drainage system and repair approximately 16,516 ft² of concrete foundation. Two infrastructure/utilities construction projects would install approximately 23,992.4 lf of drainage, repair/maintain approximately 2,611,598 ft² of airfield pavement, and add approximately 239,924 ft² of airfield pavement. Under Alternative 2, three other infrastructure/utilities construction projects would grade approximately 105 acres of hilly area and relocate approximately 1,300 lf of fencing.

f. Point of Contact:

Name: J. Michael Nied, PE (WI)
Title: Environmental Engineer
Organization: Environmental Assessment Services, LLC
Email: mnied@easbio.com
Phone Number: 608.797.1326

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

applicable
 not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving “steady state” (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

“Insignificance Indicators” were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are “Clearly Attainment” (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are “Near Nonattainment” (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

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

Analysis Summary:

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

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.388	250	
NOx	2.111	250	
CO	2.640	250	
SOx	0.006	250	
PM 10	10.458	250	
PM 2.5	0.089	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	623.1		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.277	250	
NOx	1.441	250	
CO	2.088	250	
SOx	0.005	250	
PM 10	10.429	250	
PM 2.5	0.060	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	448.3		

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.277	250	
NOx	1.438	250	
CO	2.084	250	
SOx	0.005	250	
PM 10	10.428	250	
PM 2.5	0.060	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	443.6		

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.855	250	
NOx	1.452	250	
CO	2.134	250	
SOx	0.005	250	
PM 10	4.284	250	
PM 2.5	0.051	250	

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

Pb	0.000	25	No
NH3	0.002	250	
CO2e	496.5		

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.854	250	
NOx	1.441	250	
CO	2.125	250	
SOx	0.005	250	
PM 10	4.283	250	
PM 2.5	0.050	250	
Pb	0.000	25	No
NH3	0.002	250	
CO2e	483.8		

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.854	250	
NOx	1.431	250	
CO	2.117	250	
SOx	0.005	250	
PM 10	4.282	250	
PM 2.5	0.049	250	
Pb	0.000	25	No
NH3	0.002	250	
CO2e	471.1		

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.175	250	
NOx	1.201	250	
CO	1.787	250	
SOx	0.003	250	
PM 10	2.644	250	
PM 2.5	0.030	250	
Pb	0.000	25	No
NH3	0.004	250	
CO2e	243.8		

2031

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.165	250	
NOx	1.031	250	
CO	1.644	250	

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SOx	0.002	250	
PM 10	2.631	250	
PM 2.5	0.017	250	
Pb	0.000	25	No
NH3	0.004	250	
CO2e	39.0		

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.156	250	
NOx	0.861	250	
CO	1.501	250	
SOx	0.001	250	
PM 10	2.618	250	
PM 2.5	0.004	250	
Pb	0.000	25	No
NH3	0.004	250	
CO2e	-165.8		

2033 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.030	250	
NOx	-0.554	250	
CO	-0.465	250	
SOx	-0.003	250	
PM 10	-0.042	250	
PM 2.5	-0.042	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	-666.5		

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

J. Michael Nied, PE (WI), Environmental Engineer

DATE

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AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA) - ALTERNATIVE 2

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

a. Action Location:

Base: SHEPPARD AFB
State: Texas
County(s): Wichita
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: 82d Training Wing and 80th Flying Training Wing Area Development Plans for Sheppard Air Force Base

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2024

e. Action Description:

Under Alternative 1, the Proposed Action would involve building construction, building additions, demolition-only, and infrastructure/utilities construction projects (Figures 2-3–2-8). Under Alternative 1, four new construction projects, a single building addition project, and a single demolition-only project would add approximately 344,933 ft² of new building space and demolish approximately 392,395 ft² of building space. These projects would result in a net change in facility footprint of -47,462 ft². The four construction projects would also include the renovation of approximately 654,266 ft² of preexisting building space.

Under Alternative 1, two infrastructure/utilities construction projects would replace approximately 58,284 lf of existing underground and overhead lines with new underground lines. Three infrastructure/utilities construction projects would replace, repair, or install approximately 14,400 lf of drainage system. One infrastructure/utilities project would install approximately 700 lf of drainage system and repair approximately 16,516 ft² of concrete foundation. One infrastructure/utilities construction project would install approximately 23,992.4 lf of drainage, repair/maintain approximately 2,399,418 ft² of airfield pavement, and add approximately 239,924 ft² of airfield pavement. One infrastructure/utilities construction project would demolish approximately 141,260 ft² of airfield pavements. Under Alternative 1, three other infrastructure/utilities construction projects would grade approximately 105 acres of hilly area and relocate approximately 1,300 lf of fencing.

Overall, projects included under Alternative 1 would result in a net increase of approximately 50,202 ft² of new impervious surface area. All proposed projects would meet the selection standards and would remedy facility deficiencies, be consistent with land use requirements, increase operational efficiencies and sustainable development, and improve the quality of life.

The project list under Alternative 2 would remain the same as Alternative 1 with the following exceptions:

- Project 4 – Buildings 1900, 1921, 1927, 920, 960, 1040, 1060, 1080, and 1090 would be renovated (658,192 ft² total). Buildings 2001, 2010, 2012, and 2014 would be demolished (83,741 ft² total). A new 35,000-ft² Power Pro training facility would be constructed.
- Project 7 – No underground lines would be installed or replaced, and approximately 13,330 lf of existing overhead lines would be replaced with overhead conductors and pad-mounted transformers.
- Project 8 – No underground lines would be installed or replaced, and approximately 5,455 lf of existing overhead lines would be replaced with overhead conductors and pad-mounted transformers.
- Project 12 – The existing abandoned taxiway would be left as is, the mandatory closed pavement markings would continue to be maintained, and any FOD-producing hazards would be corrected.

AIR CONFORMITY APPLICABILITY MODEL REPORT

RECORD OF AIR ANALYSIS (ROAA)

Under Alternative 2, the Proposed Action would include building construction, building addition, demolition-only, and infrastructure/utilities construction projects. Under Alternative 2, four new construction projects, a single building addition project, and a single demolition-only project would add approximately 204,933 ft² of new building space and would demolish approximately 246,929 ft² of building space. These projects would result in a net change in facility footprint of -41,996 ft². The four construction projects would also include the renovation of approximately 658,192 ft² of preexisting building space.

Under Alternative 2, two infrastructure/utilities construction projects would replace approximately 18,785 lf of existing overhead lines with overhead conductors and pad-mounted transformers. Three infrastructure/utilities construction projects would replace, repair, or install approximately 14,000 lf of drainage system. One infrastructure/utilities project would install approximately 700 lf of drainage system and repair approximately 16,516 ft² of concrete foundation. Two infrastructure/utilities construction projects would install approximately 23,992.4 lf of drainage, repair/maintain approximately 2,611,598 ft² of airfield pavement, and add approximately 239,924 ft² of airfield pavement. Under Alternative 2, three other infrastructure/utilities construction projects would grade approximately 105 acres of hilly area and relocate approximately 1,300 lf of fencing.

f. Point of Contact:

Name: J. Michael Nied, PE (WI)
Title: Environmental Engineer
Organization: Environmental Assessment Services, LLC
Email: mnied@easbio.com
Phone Number: 608.797.1326

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

applicable
 not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving “steady state” (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

“Insignificance Indicators” were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are “Clearly Attainment” (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are “Near Nonattainment” (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

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

Analysis Summary:

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

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.388	250	
NOx	2.111	250	
CO	2.640	250	
SOx	0.006	250	
PM 10	8.757	250	
PM 2.5	0.089	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	623.1		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.277	250	
NOx	1.441	250	
CO	2.088	250	
SOx	0.005	250	
PM 10	8.727	250	
PM 2.5	0.060	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	448.3		

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.277	250	
NOx	1.438	250	
CO	2.084	250	
SOx	0.005	250	
PM 10	8.727	250	
PM 2.5	0.060	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	443.6		

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.855	250	
NOx	1.452	250	
CO	2.134	250	
SOx	0.005	250	
PM 10	3.658	250	
PM 2.5	0.051	250	

**AIR CONFORMITY APPLICABILITY MODEL REPORT
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Pb	0.000	25	No
NH3	0.002	250	
CO2e	496.5		

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.854	250	
NOx	1.441	250	
CO	2.125	250	
SOx	0.005	250	
PM 10	3.657	250	
PM 2.5	0.050	250	
Pb	0.000	25	No
NH3	0.002	250	
CO2e	483.8		

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.854	250	
NOx	1.431	250	
CO	2.117	250	
SOx	0.005	250	
PM 10	3.656	250	
PM 2.5	0.049	250	
Pb	0.000	25	No
NH3	0.002	250	
CO2e	471.1		

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.901	250	
NOx	1.171	250	
CO	1.765	250	
SOx	0.003	250	
PM 10	1.441	250	
PM 2.5	0.029	250	
Pb	0.000	25	No
NH3	0.004	250	
CO2e	219.5		

2031

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.891	250	
NOx	0.989	250	
CO	1.612	250	

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

SOx	0.002	250	
PM 10	1.427	250	
PM 2.5	0.015	250	
Pb	0.000	25	No
NH3	0.004	250	
CO2e	0.2		

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.881	250	
NOx	0.807	250	
CO	1.459	250	
SOx	0.001	250	
PM 10	1.414	250	
PM 2.5	0.001	250	
Pb	0.000	25	No
NH3	0.004	250	
CO2e	-219.1		

2033 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.032	250	
NOx	-0.590	250	
CO	-0.495	250	
SOx	-0.004	250	
PM 10	-0.045	250	
PM 2.5	-0.045	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	-709.9		

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

J. Michael Nied, PE (WI), Environmental Engineer

DATE