2024

Draft Environmental Assessment

of Base Improvements to Support the Strategic Basing of Aeromedical Evacuation Squadron #10

United States Army Corps of Engineers, Chicago District
6/7/2024

EXECUTIVE SUMMARY

The National Guard Bureau proposes to beddown Aeromedical Evacuation Squadron (AES) #10. Naval Air Station (NAS) Joint Reserve Base (JRB) Fort Worth (136th Airlift Wing [136 AW]) is the preferred alternative. The beddown would include upgrades and renovations to B1678 and B4175. An increase in flight hours is not expected for a potential new mission beddown because the AES training missions will utilize existing crew training flights. The beddown could add up to 120 jobs at the 136 AW.

Based on application of the screening criteria, the Secretary of the Air Force (SecAF) carried forward six bases for further consideration.

- Alternative 1: Stewart ANGB, NY (105 AW);
- Alternative 2: Great Falls ANGB, MT (120 AW);
- Alternative 3: NAS JRB Ft Worth, TX (136 AW) (Preferred Alternative);
- Alternative 4: Rosecrans ANGB, MO (139 AW);
- Alternative 5: Reno/Tahoe ANGB, NV (152 AW);
- Alternative 6: Peoria ANGB, IL (182 AW).

Under the No Action Alternative, the bases would remain in the current condition. No action means:

- AES #10 would not be created and staffing levels would remain the same rather than increase as AES #10 would not be beddown.
- Existing facilities would not be renovated or modified to accommodate AES #10.
- Environmental impacts from facility renovation/modification and personnel movement would not occur.

A listing of the resources with impacts and best management practices (BMPs), if applicable, are as follows:

- **Safety** – No impact. Based on an assumption of safety compliance for base activities, including construction projects, the Proposed Action will have no impacts on safety. All construction projects would follow applicable safety requirements.
- **Air Quality** – Short-term minor construction related impacts. Project construction would employ BMPs to minimize fugitive dust and tailpipe emissions. In addition, any asbestos abatement or similar environmental abatement needed prior to building renovations (removal of mercury ballast fluorescent lights, lead paint, mercury ballasts or switches) would be done in accordance with federal laws, worker safety requirements, and safe disposal requirements.
- **Noise** – Short-term minor construction related impacts. Project construction would avoid early morning, evening/night, and weekend work which would disturb nearby homeowners.
- **Land Use** – No impacts to land use; the Proposed Action is compliant with existing land uses.
- **Geological Resources** – The Proposed Action is not expected to result in significant impacts to geological resources, including surface or subsurface soils

or geologic formations or farmland. BMPs will be implemented in accordance with the General Permits (GPs) for Stormwater Discharges Associated with Construction Activity and its associated Stormwater Pollution Prevention Plan (SWPPPs) for all sites evaluated in this Environmental Assessment.

- **Water Resources** – Impacts to water resources are not anticipated from the Proposed Action. The Proposed Action would comply with the relevant installation Pollutant Discharge Elimination System (PDES) GP and its associated SWPPP with specified BMPs, and stormwater controls sufficient to ensure no net increase in peak flow rates and total volume of runoff from the site.
- **Biological Resources** – Impacts to biological resources, including state and federal listed threatened and endangered species, are not anticipated with the proposed projects. No trees will be removed in conjunction with the projects and construction contractors will take action to prevent the spread of invasive species onto and off the site. Buildings that will be renovated or demolished will be inspected prior to the commencement of demolition for the presence of bats in the buildings. If bats are present, the installation will contract with a wildlife biologist to safely remove the bats outside of the maternity season.
- **Transportation and Traffic Circulation** – Short-term minor construction related disruptions to traffic movements on local roadways are anticipated.
- **Visual Resources** – No unique or sensitive visual resources exist in the area, therefore no impacts are anticipated.
- **Cultural Resources** – No cultural resource impacts are expected. However, In case of inadvertent archaeological discovery during ground-moving operations, immediately stop work in the vicinity of the discovery and contact the Navy Installation Environmental Program Director. The Navy will consult the State Historic Preservation Officer (SHPO) and interested parties to determine an appropriate course of action.
- **Socioeconomics** – Beneficial impact. Addition of the new mission and implementation of construction projects will bring an opportunity for local jobs, including both skilled and unskilled (general labor) construction and related work.
- **Hazardous Materials and Wastes** – No impact. All hazardous materials and waste would be stored and handled in compliance with applicable federal and state laws and regulations, and the procedures outlined in the 136 AW's HWMP
- **Solid Waste** – Recyclable materials and construction and demolition debris will be diverted from the solid waste stream as outlined in the 136 AW's Integrated Solid Waste Management Plan (ISWMP).

The impacts of the Proposed Action when combined with impacts from other present or planned development in the surrounding area are not anticipated to result in significant cumulative impacts. Based on the current analysis and impacts, the Proposed Action would not result in significant impacts on any of the resources analyzed within this document, and no further analysis or documentation, such as the preparation of an Environmental Impact Statement (EIS), is required.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	Micrograms per cubic meter
%	Percent
105 AW	105th Airlift Wing
120 AW	120th Airlift Wing
136 AW	136th Airlift Wing
139 AW	139th Airlift Wing
152 AW	152nd Airlift Wing
179 AW	179th Airlift Wing
182 AW	182nd Airlift Wing
ACAM	Air Conformity Applicability Model
ADAL	Add/Alter
AES	Aeromedical Evacuation Squadron
AF/A4	Logistics, Engineering and Force Protection
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AICUZ	Air Installations Compatible Use Zones
AJD	Approved Jurisdictional Determination
ANG	Air National Guard
ANGB	Air National Guard Base
APE	Area of potential effects
ARC	Air Reserve Component
AW	Airlift Wing
BASH	Bird/Wildlife Aircraft Strike Hazard
BMP	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERF-P	Chemical, biological, radiological, nuclear, and explosive (CBRNE) Enhanced Response Force Package (CERF-P)
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide equivalent

COA	Course of Action
CONUS	Contiguous United States
CSAF	Chief of Staff of the Air Force
CWA	Clean Water Act
dB	Decibels
dBA	Decibels A-weighted
DoD	Department of Defense
DoN	Department of the Navy
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence Security Act
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FOC	Full Operations Capacity
FONSI	Finding of No Significant Impact
GFIA	Great Falls International Airport
GHG	Greenhouse Gasses
GP	General Permit
GW	Groundwater
HAP	Hazardous Air Pollutant
HVAC	Heating, Ventilation, and Air Conditioning
HWMP	Hazardous Waste Management Plan
IG	Inspector General
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
ICRMP	Integrated Cultural Resource Management Plan
INRMP	Integrated Natural Resource Management Plan
IOC	Initial Operating Capacity
IPaC	Information, Planning and Conservation (system)
ISWMP	Integrated Solid Waste Management Plan
JRB	Joint Reserve Base
MDNR	Missouri Department of Natural Resources
mg/m^3	Milligrams per cubic meter
MTANG	Montana Air National Guard
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAS	Naval Air Station
NCSAF	National Commission on the Structure of the Air Force
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NHPA	National Historic Preservation Act

NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NVANG	Nevada Air National Guard
NWI	National Wetland Inventory
O_3	Ozone
OPNAV	Office of the Chief of Naval Operations
OPNAV-M	Office of the Chief of Naval Operations Manual
P&RA	Preferred and Reasonable Alternative
Pb	Lead
PCB	polychlorinated biphenyl
PCP	Pentachlorophenol
PDES	Pollution Discharge Elimination System
PFAS	Perfluoroalkyl Substances
PIA	Peoria International Airport
PM	Particulate matter
PM-10	PM with diameters 10 micrometers and smaller
PM-2.5	PM with diameters 2.5 micrometers and smaller
POL	Petroleum, oil, and lubricants
ppm	Parts per million
PSD	Prevention of Significant Deterioration
RN	Registered Nurse
RNO	Reno-Tahoe International Airport
RPW	Relatively Permanent Waters
RTAA	Reno-Tahoe Airport Authority
SANGB	Stewart Air National Guard Base
SecAF	Secretary of the Air Force
SF	Square Feet
SFHAs	Special Flood Hazard Areas
SHPO	State Historic Preservation Office
SIA	Stewart International Airport
SIP	State Implementation Plan
SOF	Squadron Operation Facility
SO_2	Sulfur Dioxide
SOx	Sulfur Oxides
SWPPP	Stormwater Pollution Prevention Plan
TPWD	Texas Park & Wildlife Department
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers
USAF	United States Department of the Air Force
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency

USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WCHD	Washoe County Health Department
WOTUS	Waters of the United States

Draft Environmental Assessment of Base Improvements for the Strategic Basing Process for the Air National Guard Aeromedical Evacuation Squadron

June 2024

1. INTRODUCTION

The United States Department of the Air Force (USAF) and National Guard Bureau (NGB) are co-lead agencies responsible for the scope and content of this Environmental Assessment (EA). NGB is the environmental planning function executing this action. Pursuant to 42 United States Code (USC) 4332, 40 Code of Federal Regulations (CFR) Section 1500.5(d), and 40 CFR Section 1501.7(h), the DAF and NGB invited potential cooperating agencies to participate in the environmental review process for the AES beddown.

The ANG is a Directorate within the National Guard Bureau (NGB). The ANG Director assists the Chief of the NGB to carry out the functions of the NGB as they relate to the national defense directives of the United States. Per amendments to 10 USC 10501, described in the Department of Defense (DoD) Directive 5105.77, the NGB is a joint activity of the DoD. The NGB serves as a channel of communication and funding between the Air Force and State ANG organizations in the 54 U.S. states, territories, and the District of Columbia.

Subsequently the Department of the Navy (DoN) was requested to join this EA as a cooperating agency with jurisdiction over the Fort Worth location. The Federal Aviation Administration (FAA) is a participating agency on this EA. Together, the DAF, NGB and DoN (FAA as necessary) will use this EA to consider the potential impacts to the human and natural environment associated with required infrastructure improvement projects including renovations, construction, and demolitions at the Preferred and Reasonable Alternatives (P&RAs) identified in Section 2.3.2. One of the alternatives is preferred, and the rest are considered reasonable. The P&RAs include: Stewart Air National Guard Base (ANGB), NY (105th Airlift Wing [105 AW]); Great Falls ANGB, Great Falls, MT (120 AW); Naval Air Station (NAS) Joint Reserve Base (JRB) Fort Worth, TX (136 AW); Rosecrans ANGB, MO (139 AW); Reno/Tahoe ANGB, NV (152 AW); and Peoria ANGB, IL (182 AW). This EA identifies applicable management actions and best management practices (BMPs) that would avoid or minimize impacts relevant to the implementation of the P&RAs (to include the No-Action Alternative).
This EA has been prepared consistent with the National Environmental Policy Act (NEPA) (42 USC 4321-4347) as amended by the Fiscal Responsibility Act of 2023, Council on Environmental Quality (CEQ) NEPA Implementing Regulations (40 CFR 1500), the USAF's Environmental Impact Analysis Process (EIAP) (32 CFR 989), and Policies and Responsibilities for Implementing the National Environmental Policy Act within the Department of the Navy (32 CFR 775).

1.1 BACKGROUND

In 2014, Congress commissioned the National Commission on the Structure of the Air Force (NCSAF) to evaluate United States Air Force (USAF) efficiencies. The NCSAF identified capacity shortfalls for the active duty and reserve components of the Aeromedical Evacuation Squadron (AES) mission based on Secretary of Defense-mandated dwell rates. The dwell rate is a ratio of the amount of time service members are deployed relative to the time in their home station. Aeromedical evacuation is the movement of patients under medical supervision to and between medical treatment facilities by air transportation.

In March of 2014, the Chief of Staff of the Air Force (CSAF) directed an investigation to determine if combining the capabilities of the active-duty USAF, Air National Guard (ANG), and USAF Reserve personnel could address the AES mission needs. Based on this analysis, the NGB determined that the existing nine ANG AE units were insufficient to effectively meet requirements and maintain the active component's 1:2 dwell rate and the reserve component's 1:5 dwell rate.

In March of 2020, the Secretary of the Air Force (SecAF) announced seven ANG candidate bases for one ANG AES basing action, Aeromedical Evacuation Squadron #10 (AES #10); six of these ANG candidate bases are listed below and the seventh, 179 AW at Mansfield Lahm, was removed from further consideration due to a mission change (see Section 2.3.2).

1.2 PURPOSE AND NEED

The purpose of this federal action is to base a new AES at one of six candidate locations, an action which would include infrastructure improvements and personnel expansion. The action is needed for the Air Force to meet mandatory 'dwell rates' – the ratio of the amount of time service members are deployed relative to the time in their home station. The current nine AESs are insufficient to achieve this compliance; an additional squadron is needed.

1.3 LOCATIONS

During the strategic basing process, the USAF identified six candidate locations to support AES #10. Chapter 2 describes the basing process, which includes: 1) assessment of the operational requirements necessary to fulfill the mission needs and 2) utilization of additional objective screening criteria to identify potential locations capable of supporting the AES.

1.3.1 105 AW at Stewart ANGB, NY

The 105 AW is a unit of the New York ANG located at Stewart International Airport (SIA) in Newburgh, New York approximately 1 mile west of the Hudson River. Stewart ANGB is in Orange County in the southeast region of the state of New York approximately 60 miles north of New York City. The installation covers 272 acres leased by the New York State Department of Transportation (*Figure 1-1*).

1.3.2 120 AW at Great Falls ANGB, MT

The 120 AW is a unit of the Montana ANG stationed at the Great Falls ANGB in Great Falls, Cascade County, Montana, and is part of Great Falls International Airport (GFIA). The Great Falls ANGB is approximately 3 miles west of the Missouri River in the west-central portion of the state. The 120 AW encompasses 133 acres of land under a license agreement with the GFIA (*Figure 1-2*).

1.3.3 136 AW at NAS JRB Fort Worth, TX

The 136 AW is a unit of the Texas ANG located in Fort Worth, Texas along the southern edge of Lake Worth in Tarrant County. NAS JRB Fort Worth hosts dozens of units from five different branches of military service, including Navy, Marines, USAF, Army, and the Texas ANG. The installation is located in the northeastern portion of the state and encompasses approximately 1,805 acres (*Figure 1-3*). The 136 AW previously held a license agreement with NAS JRB Fort Worth for the buildings that are the subject of this EA. While a new license is being established, the ANG continues to operate according to the Host Tenant Real Estate Agreement number N62467-95-RP-00116 dated 2 August 2000.

1.3.4 139 AW at Rosecrans ANGB, MO

The 139 AW is a unit of the Missouri ANG located at Rosecrans Memorial Airport, St. Joseph, Missouri. The facility is in Buchanan County in northwestern Missouri, west of the Missouri River and the City of St. Joseph. The ANG facility and the adjoining airport property occupy an area of approximately 1,920 acres (*Figure 1-4*). The USAF owns and leases a total of 548.7 acres with 53.9 acres owned by the USAF and 204.8 acres leased from the City of St. Joseph. Additional off-site areas outside of the EA review area are also leased by the USAF; 99 acres from a local landowner and 190 acres from the City of St. Joseph.

1.3.5 152 AW at Reno/Tahoe ANGB, NV

The 152 AW is a unit of the Nevada ANG located in Reno, Nevada. The base itself is in Washoe County approximately three miles southeast of downtown Reno. The 152 AW leases property owned by the Reno-Tahoe International Airport (RNO), which is run by the Reno-Tahoe Airport Authority (RTAA). The facility and the adjoining airport property occupy an area of 60.19 acres (*Figure 1-5*).

1.3.6 182 AW at Peoria ANGB, IL

The 182 AW is a unit of the Illinois ANG located at the General Wayne A. Downing Peoria International Airport (PIA), approximately 5 miles west of Peoria, Illinois. The base is in Peoria County in the north-central portion of the state, approximately 115 miles southwest of Chicago. The Illinois ANG encompasses approximately 334 acres of land leased to the USAF from the Greater Peoria Regional Airport Authority and licensed to the State of Illinois for use by the 182 AW (*Figure 1-6*).

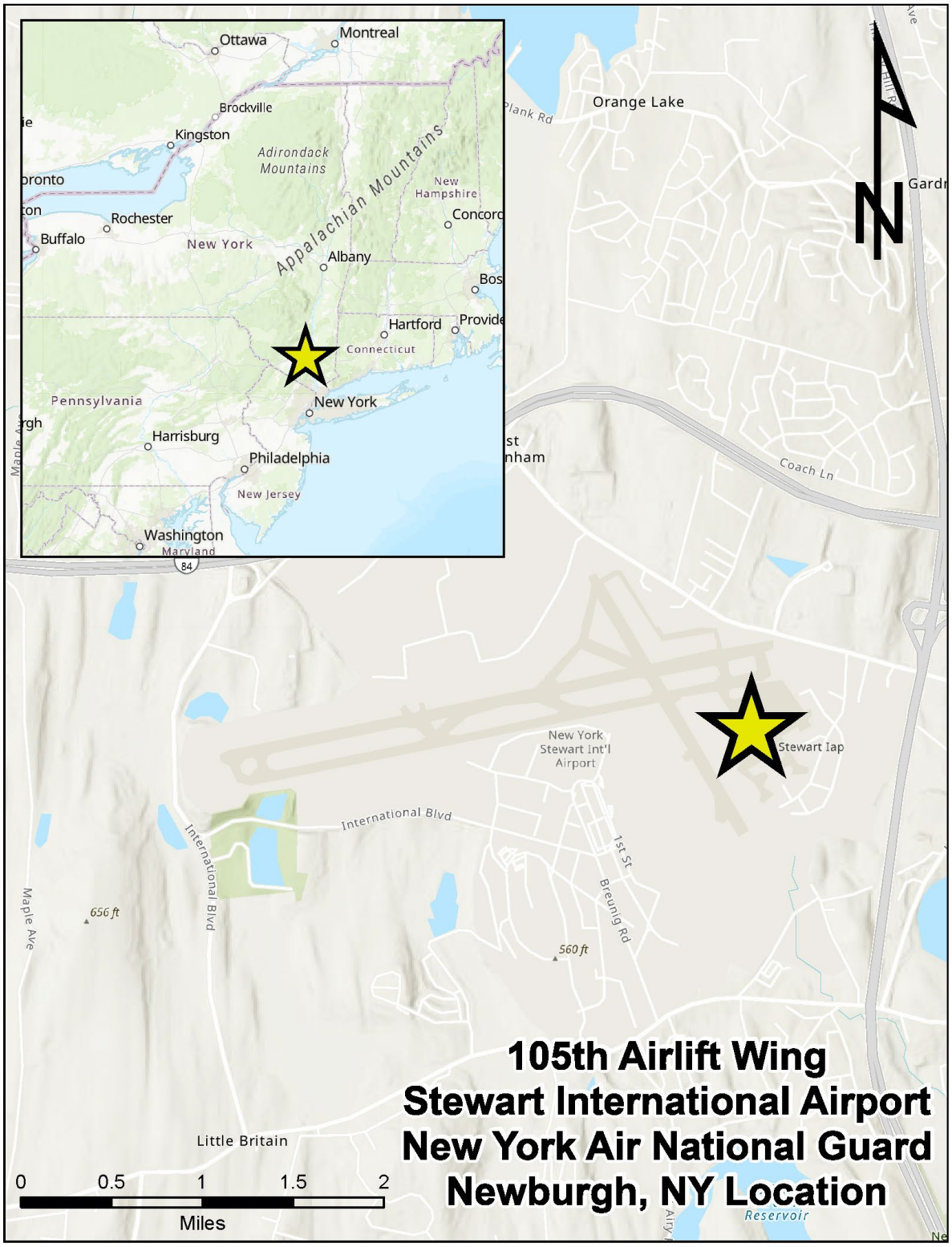

Figure 1-1: Location of the SIA that houses the 105 AW of the NY ANG.

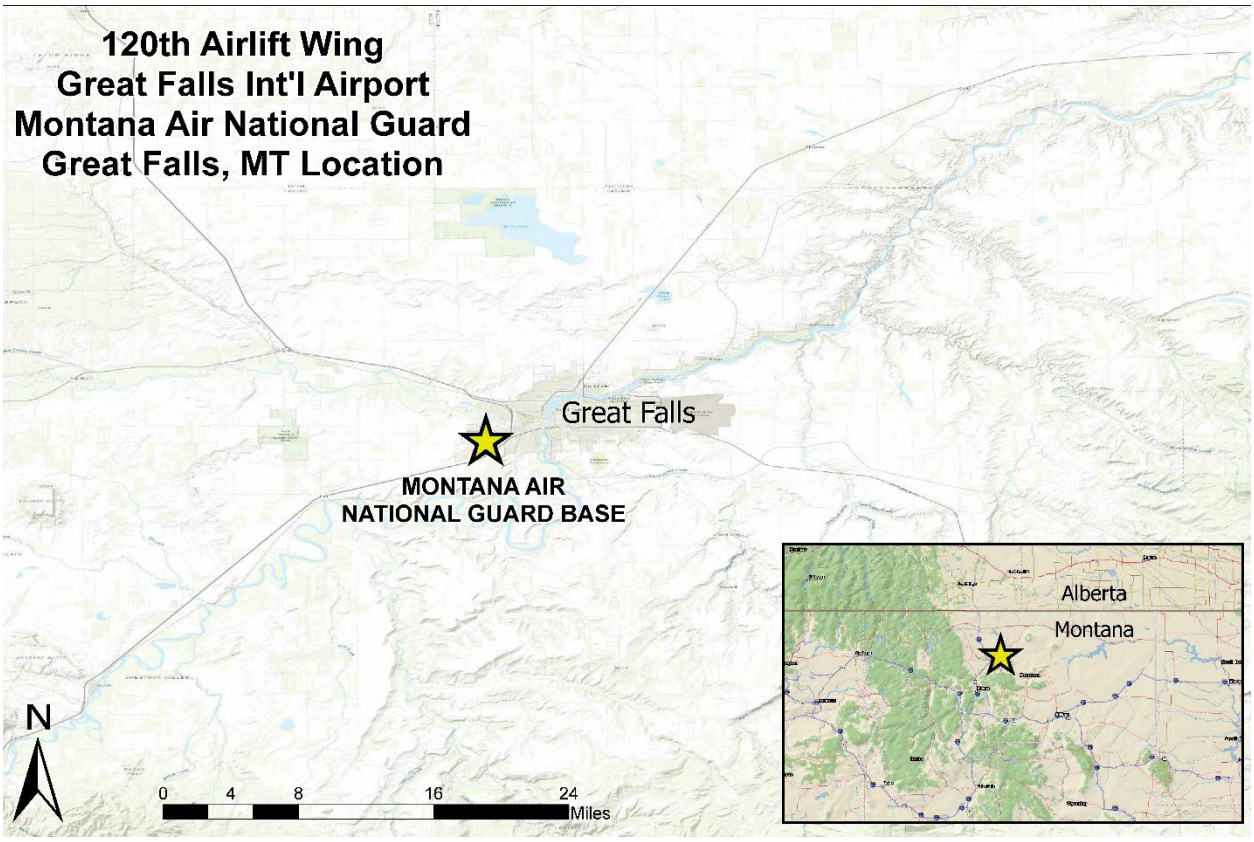

Figure 1-2: Location of GFIA that houses the 120 AW of the MT ANG.

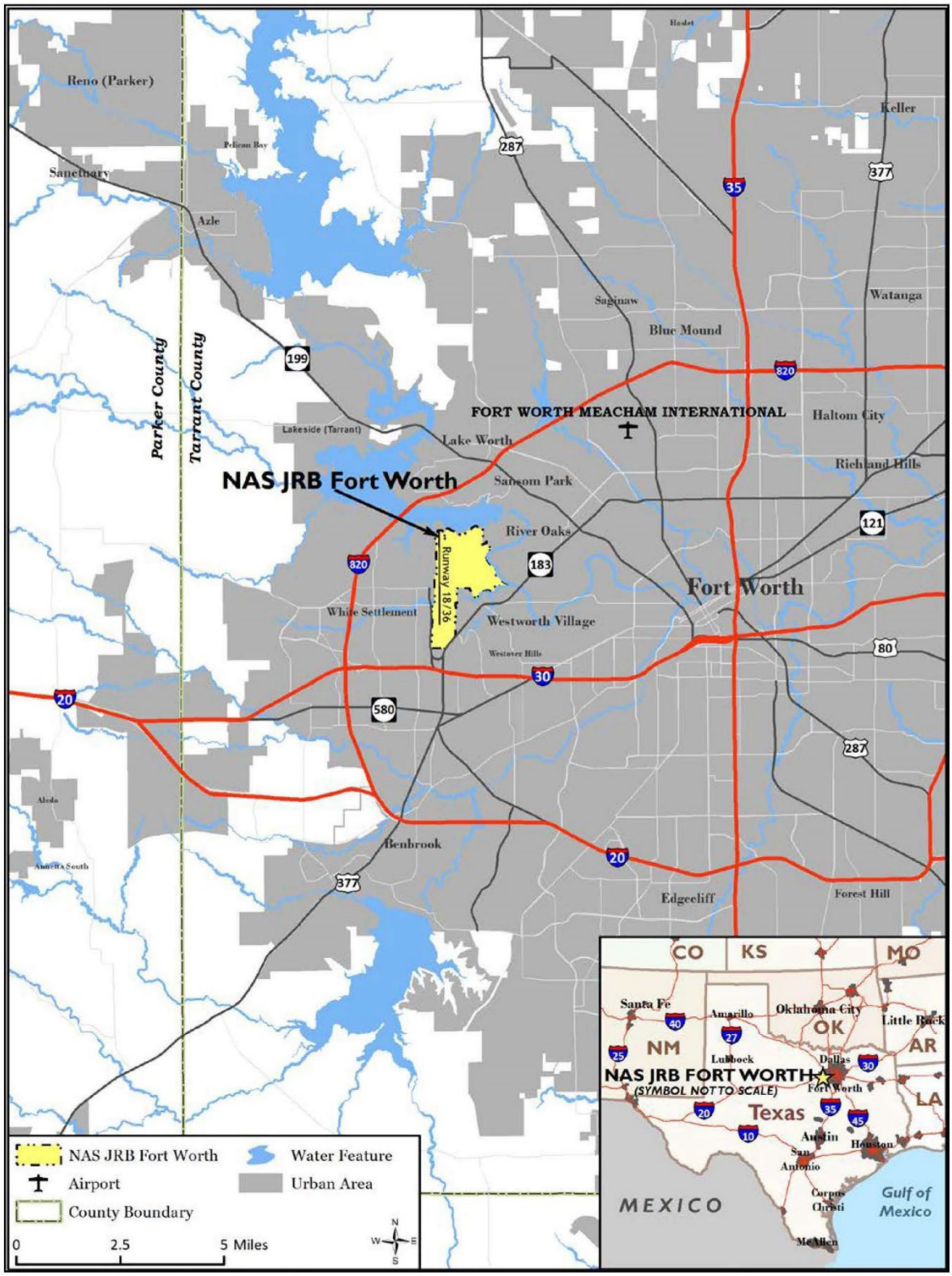

Figure 1-3: Location of NAS JRB Fort Worth that houses the 136 AW of the TX ANG.

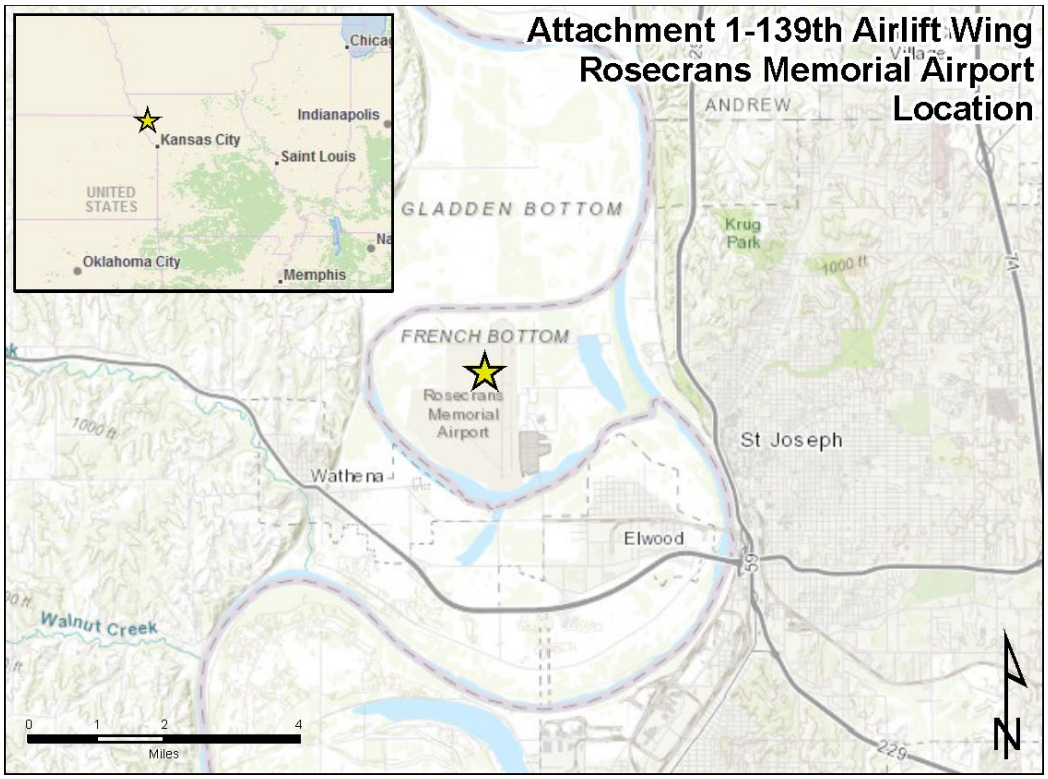

Figure 1-4: Location of Rosecrans Memorial Airport that houses the 139 AW of the MO ANG.

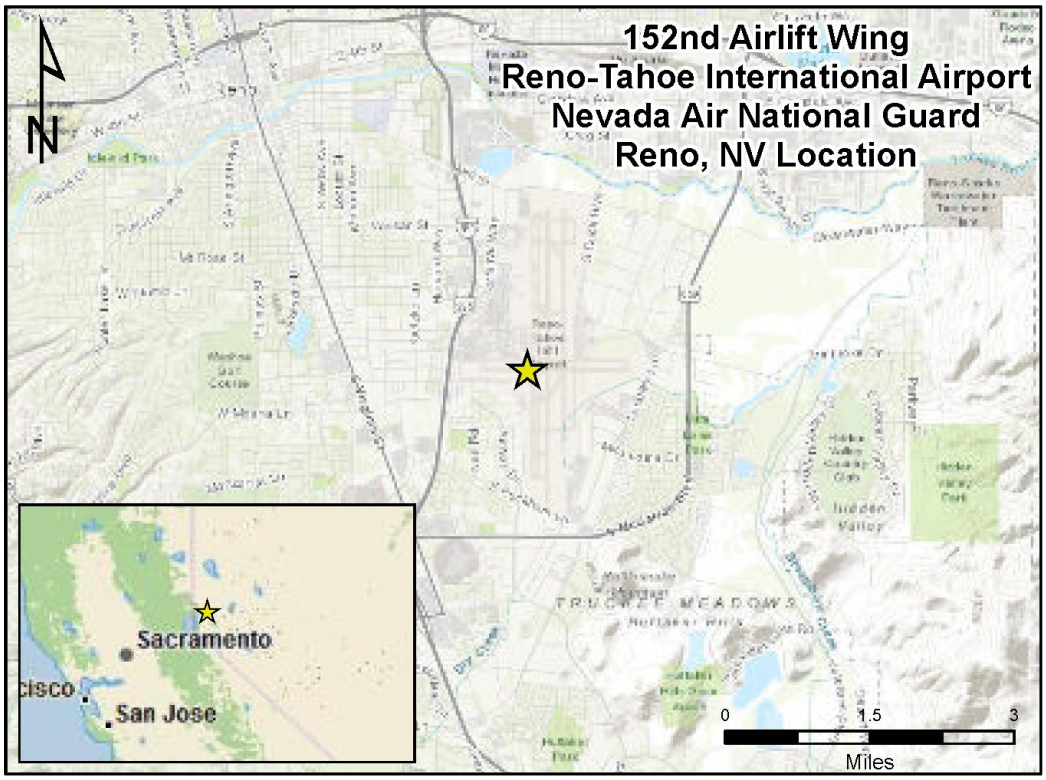

Figure 1-5: Location of RNO that houses the 152 AW of the NV ANG.

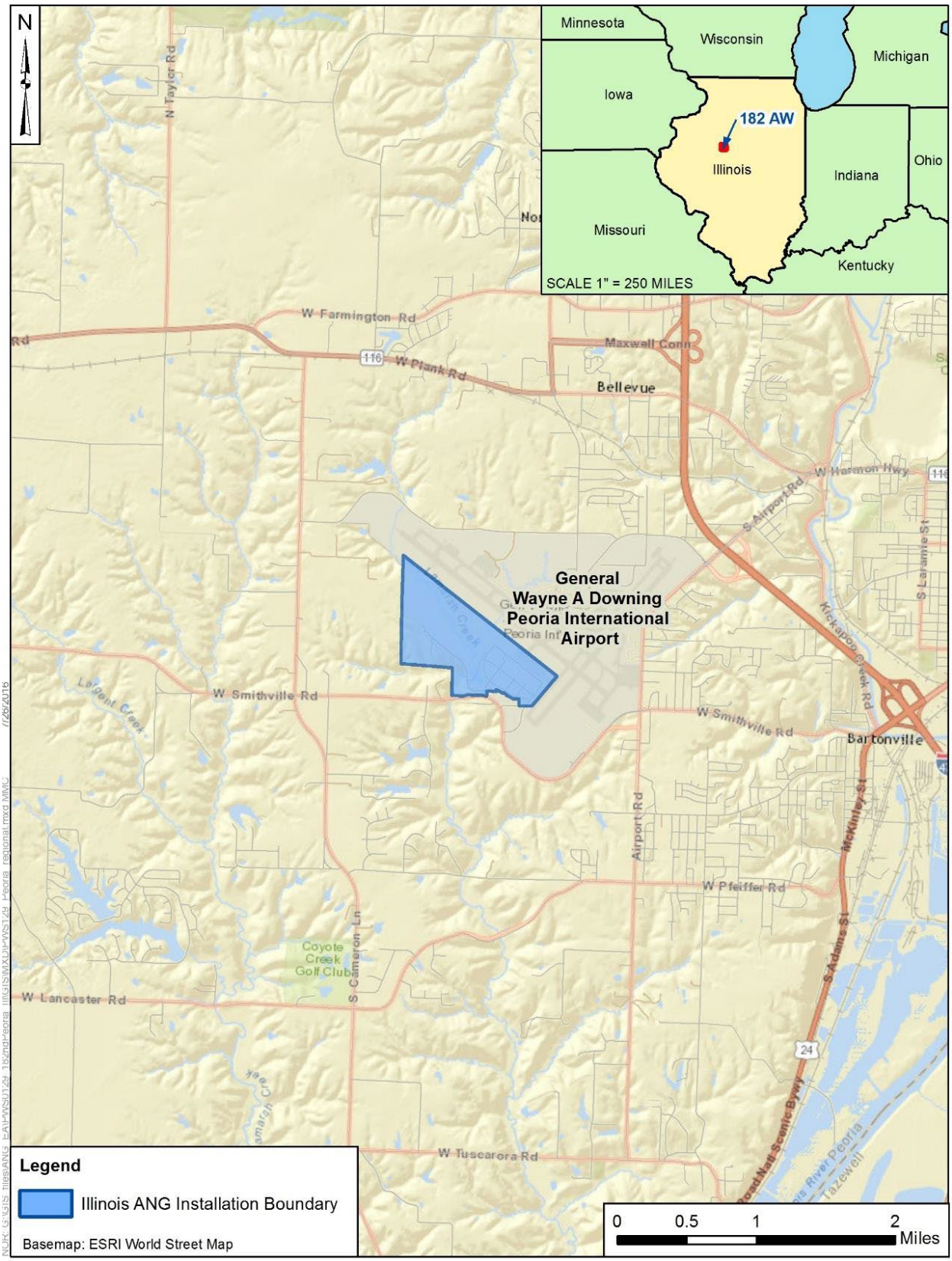

Figure 1-6: Location of PIA that houses the 182 AW of the IL ANG.

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 ALTERNATIVE IDENTIFICATION PROCESS

NEPA and CEQ regulations mandate the consideration of reasonable alternatives for the Proposed Action. The Navy's NEPA implementing regulations also require "develop[ing] and carefully consider[ing] a reasonable range of alternatives (32 CFR 775.3[2]). Reasonable alternatives are those that are technically and economically feasible and meet the purpose and need for the proposed action (40 CFR 1508.1[z]). Per the requirements of Office of Chief of Naval Operations Manual (OPNAV-M) 5090.1 and 32 CFR 989, selection standards are used to establish what qualifies as a reasonable alternative for meeting the purpose and need for the action.

Identification and analysis of alternatives is one of the core elements of the EIAP under NEPA and the USAF's implementing regulations. Alternatives may be eliminated from detailed analysis based on reasonable selection standards (32 CFR 989.8(c); OPNAV-M 5090.1, paragraph 10-3.15(d), Table 10-9). Based on extensive analysis by the NGB and USAF operations, a study was conducted to determine the specific requirements for beddown of a tenth AES from which potential ANG locations would be identified. Following this study, the SecAF and the CSAF approved selection criteria for the AES #10 beddown.

In general, the USAF uses the strategic basing process outlined in Air Force Instruction (AFI) 10-503: SAF/IEIB Strategic Basing (AFI, 2020) to identify potential locations to beddown missions. The process begins by identifying all the installations that could reasonably support a given mission. This selection of installations is then evaluated using objective criteria to screen the top alternative installations. Site surveys are then conducted at each alternative location to determine if the installation could reasonably support the mission in question. The Strategic Basing Executive Steering Group oversees the process and reports findings directly to the SecAF and CSAF. This process was mandated by the SecAF to ensure basing decisions were made using a standardized, repeatable, and transparent process.

2.1.1 Basing Process

This AES basing decision followed the strategic basing process outlined above. The following planning conventions were followed:

- Step 1: Identify the number of AES personnel necessary to meet the required dwell rates, as discussed in Section 1.1 of this document.
- Step 2: Perform initial screening to determine the number of potential locations capable of supporting one squadron of up to 120 additional personnel (see Section 2.1.2).
- Step 3: Perform secondary screening to identify the P&RAs using objective screening criteria (see Section 2.2).
- Step 4: SecAF announces the P&RA (see Section 2.3.2).

2.1.2 Initial Screening

An inventory of bases that met the operational requirements was established following Step 1 of the strategic basing process above. This generated a list of all ANG installations located in the Contiguous United States (CONUS) with an operational ANG unit equipped with C-130 or C-17 aircraft, which are required for the AES mission, and without an established AES.

NGB presented objective screening criteria to the Strategic Basing Executive Steering Group, who used these to identify candidate installations for the beddown of the AES. This initial screening yielded 14 alternative installations to be evaluated for the AES #10 (*Figure 2-1*).

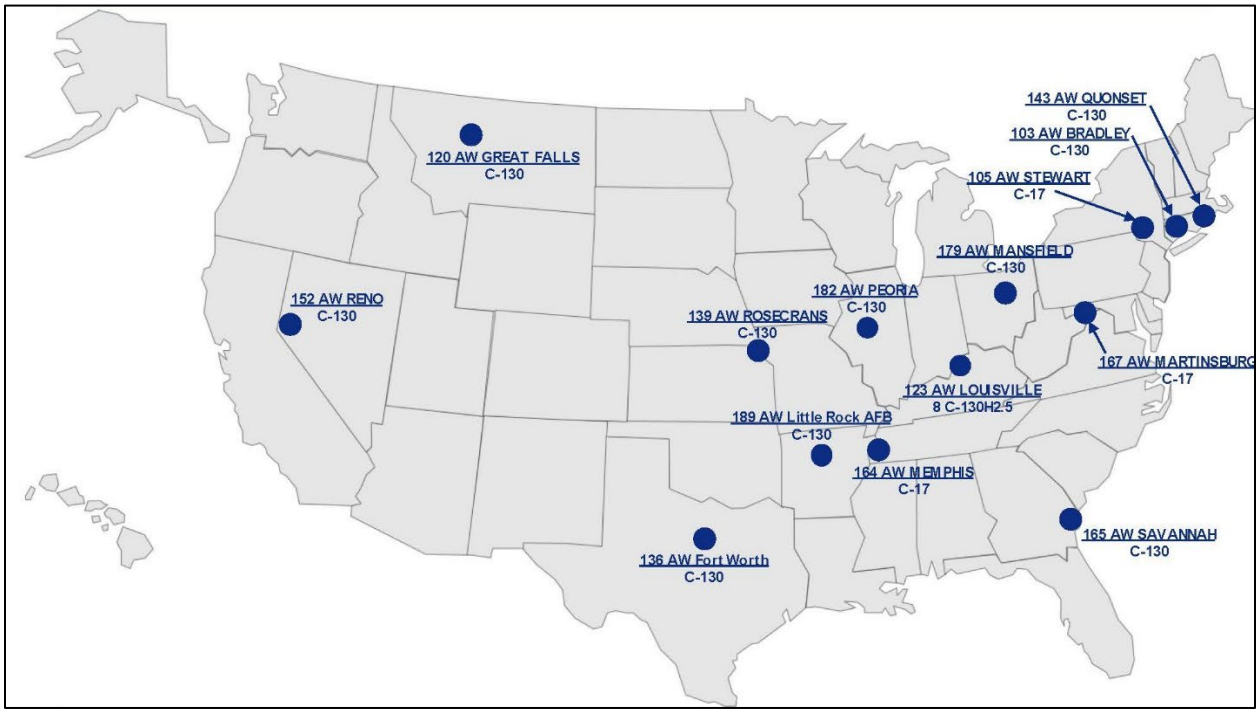

Figure 2-1: Initial Candidate Locations.

2.1.2.1 ANG Unit Equipped with C-130:

- Bradley ANGB (103 AW)
- Great Falls ANGB (120 AW)
- Louisville Air Guard Station (123 AW)
- NAS JRB Fort Worth (136 AW)
- Rosecrans ANGB (139 AW)
- Quonset State Airport (143 AW)
- Reno/Tahoe ANGB (152 AW)
- Savannah Hilton Head Air Guard Station (165 AW)
- Mansfield Lahm ANGB (179 AW)
- Peoria ANGB (182 AW)
- Little Rock Air Force Base (189 AW)

2.1.2.2 ANG Unit Equipped with C-17:

- Stewart ANGB (105 AW)
- Memphis Air Guard Station (164 AW)
- Eastern West Virginia Air Guard Station (167 AW)

2.2 SECONDARY SCREENING TO DETERMINE P&RAS

Step 3 of the basing process, was to determine which of the initial 14 locations listed in Section 2.1.2 would list as P&RAs. Step 3 screened and scored these locations using SecAF-approved criteria. This process produced a stratification of installations that allowed the USAF to determine which bases continued in the selection process as P&RAs. These criteria included mission, capacity, environmental factors, and locality cost factors. Each location was evaluated based upon the established criteria as well as qualitative operational factors in determining the alternative installations suitable for supporting AES #10.

2.2.1 Mission

This standard screened operational and manpower considerations, including proximity to established AE units, recruiting potential, and retention rates, to assess the ability of the candidate bases to fulfill the requirements of the AES mission. The recruiting potential was based on (1) the number of Registered Nurses (RNs) within the metro area near the base, (2) ability of the base to meet recruiting goals, and (3) research regarding the propensity of a given population to join the military. USAF considered mission screening results when determining P&RAs.

2.2.2 Capacity

The capacity requirements identified for the AES mission are 10,000 square feet (SF) for the Squadron Operation Facility (SOF) and 2,500 SF for equipment storage. Other capacity considerations included availability of areas for equipment and on-base narcotic storage. This standard screened the available SOF at each base by reviewing (1) if the mission could utilize excess capacity, (2) facility condition, and (3) whether the mission could be accommodated with renovations or if new construction would be necessary. USAF considered capacity screening results when determining the P&RAs.

2.2.3 Environmental

This standard screened a selection of environmental factors, including air quality attainment zones, cultural resources, and biological resources. Air quality screening looked at whether the area was in attainment, in maintenance, or in non-attainment with air quality standards. The cultural resources screening looked at known cultural resources, the Integrated Cultural Resources Management Plan (ICRMP), and the potential for the beddown to impact historic properties. The biological resources screening looked at if the base has an Integrated Natural Resource Management Plan (INRMP) and/or natural resources studies. USAF considered environmental screening results when determining the P&RAs.

2.2.4 Cost

This standard assessed the Area Construction Cost Factor (Unified Facilities Criteria [UFC] 3-701-01) and Area Locality Costs (https://www.defensetravel.dod.mil/site/bahCalc.cfm). USAF considered cost screening results when determining the P&RAs.

2.3 PROPOSED ACTION

2.3.1 No-Action Alternative

Under the No Action Alternative, the bases would remain in the current condition. No action means:

- AES #10 would not be created and staffing levels would remain the same rather than increase as AES #10 would not be beddown.
- Existing facilities would not be renovated or modified to accommodate AES #10.
- Environmental impacts from facility renovation/modification and personnel movement would not occur.

Although the No Action Alternative would not meet the purpose and need, CEQ Regulations require consideration and analysis of a No Action Alternative for the purposes of presenting a comparative analysis to the action alternatives.

2.3.2 Preferred and Reasonable Alternatives

Based on application of the secondary screening criteria described in Sections 2.2.1 through 2.2.4, the SecAF selected the top seven of the 14 initially screened bases for further consideration; the seven lowest scoring bases based on the secondary screening criteria were removed from further analysis. The 179 AW at Mansfield Lahm ANGB was initially part of the top seven bases after secondary screening; however, the 179 AW mission was converted to a Cyber Warfare Wing and divested its C-130 aircraft, so the base can no longer support the AES mission. Accordingly, the 179 AW was removed from further consideration as a P&RA for the AES.

Therefore, six bases were carried forward for further consideration in this EA.

- Alternative 1: Stewart ANGB, NY (105 AW);
- Alternative 2: Great Falls ANGB, MT (120 AW);
- Alternative 3: NAS JRB Ft Worth, TX (136 AW) (Preferred Alternative);
- Alternative 4: Rosecrans ANGB, MO (139 AW);
- Alternative 5: Reno/Tahoe ANGB, NV (152 AW);
- Alternative 6: Peoria ANGB, IL (182 AW).

2.3.3 Preferred Alternative

Each of the six alternative locations would meet the established criteria and support mission execution to beddown AES #10. The basing process found that each P&RA is capable of supporting the AE mission, meeting capacity requirements, minimally affecting the environment, and maintaining acceptable costs. Each alternative would meet the capacity requirements through renovation and/or construction projects. The

P&RA announcement (Step 4 of the basing process discussed in Section 2.1.1) identified NAS JRB Ft Worth as the preferred alternative.

JRB Fort Worth was one of six candidate locations evaluated for the AES mission. The enterprise definition was "CONUS installation with an operational ANG unit equipped C-130 or C-17 aircraft without an established Aeromedical Evacuation Squadron. Key elements analyzed outside of facilities were Proximity to Air Reserve Component (ARC) AES units, Recruiting: Registered Nurses, Recruiting Production, Population Propensity, Retention: Effective Manning Percent (%), Manning Strength % and Retention Rate. These factors drove the decision for the preferred location as NAS JRB Fort Worth because it best met the mission requirements through a combination of nursing population, retention rate and end strength, as well as a lower cost compared to the five other locations.

The AES mission could add up to 120 jobs to the selected base. An increase in flight hours is not expected for a potential new mission beddown because the AES training missions will utilize existing crew training flights.

Table 2-1 summarizes the facility improvements for P&RAs. This EA considers two implementation plans for each candidate base. Together, these plans make up the alternative for each location. Maps of the P&RAs are depicted in *Figure 2-2* to *Figure 2-8.* Photographs of each project location are shown in *Figure 2-8* to *Figure 2-15*.

2.3.4 Course of Action (COA) Structure for P&RAs:

2.3.4.1 The COA 1: Low Cost/Full Operations Capacity (FOC) Beddown Option

This initial implementation plan identifies the minimum base facility modifications or improvements required to achieve FOC to accept the AES personnel and mission set. Initial implementation would include such activities as re-assigning existing office space, realigning furniture, adding new space, and/or refreshing existing space with a new interior paint job.

2.3.4.2 COA 2: Ten-Year Capital Improvement Plan

The ten-year plan identifies further base facility modifications or improvements that may occur for the unit to recruit and successfully execute the AES mission set for the next 10 years. Many of the COA 2 alternatives involve construction of new facilities to ensure that the facilities are viable in the long term. This COA incorporates and includes all modifications and improvements from COA 1. COA 2 includes costs to renovate existing underutilized space to meet the building size square footage requirement. COA 2 at 152 AW was removed from further analysis because its location is the only viable site of the petroleum, oil, and lubricants (POL) yard as described in the 2021 IDP EA (ANG, 2021a).

Table 2-1: Summary of Facility Modifications for Proposed Bases to Accept the AES.

Installation	*COA 1: Low Cost/FOC Beddown Option*	*COA 2: Ten Year Capital Improvement Plan*
105 AW – Stewart ANGB, NY	Renovate B107 from an industrial facility to an administration and storage/support facility for AES mission.	Partially demolish B107 and rebuild on site. This would involve constructing a single facility to house the AES, the chemical, biological, radiological, nuclear, and explosive (CBRNE) Enhanced Response Force Package (CERF-P) unit, the base Fitness Center, and the Wing Inspector General (IG). The IG and initial operating capacity (IOC) AES administration function would be housed in temporary construction trailers during the project. This COA eliminates nearly 24,760 SF of impervious surface.
120 AW –Great Falls ANGB, MT	Renovate B41, which currently has approximately 15,800 SF of underutilized space.	Demolish B41 and construct new building on site of developed property. No new impervious surface.
136 AW – NAS JRB Fort Worth, TX	Upgrade Heating, Ventilation, and Air Conditioning (HVAC) in B1678. Minor renovation work inside B4175.	Fully renovate B4175. No new impervious surface.
139 AW – Rosecrans ANGB, MO	Supply function in B4 would move to B58. Renovate interior of B4 for AES. Create concrete drive access for overhead doors and replace existing asphalt pavement with concrete equipment pads for relocated equipment.	Continue using B4. No new impervious surface.
152 AW – Reno/Tahoe ANGB, NV	Renovate B76, including replacement of roof and fire suppression system.	Removed from further analysis due to only viable location for the POL yard as indicated in 2021 EA.
182 AW – Peoria ANGB, IL	Renovate B830 for AES mission. B536 and B734 would also be renovated to accommodate personal relocated due to B830 renovation.	ADAL B536 with expansion onto previously disturbed land and turf grass. Expansion will result in approximately 780 SF of new impervious surface.

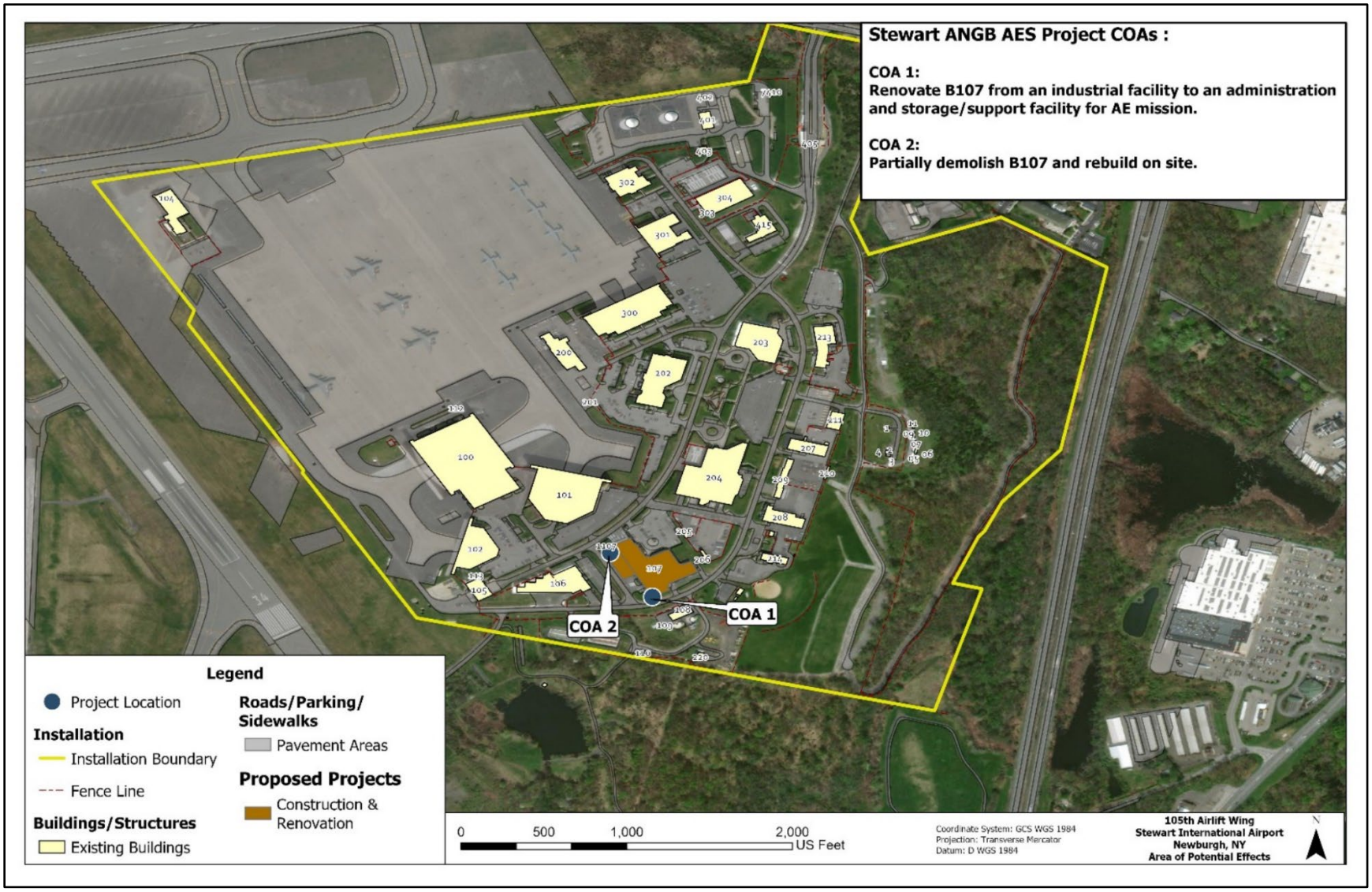

Figure 2-2: 105 AW at Stewart ANGB, NY.

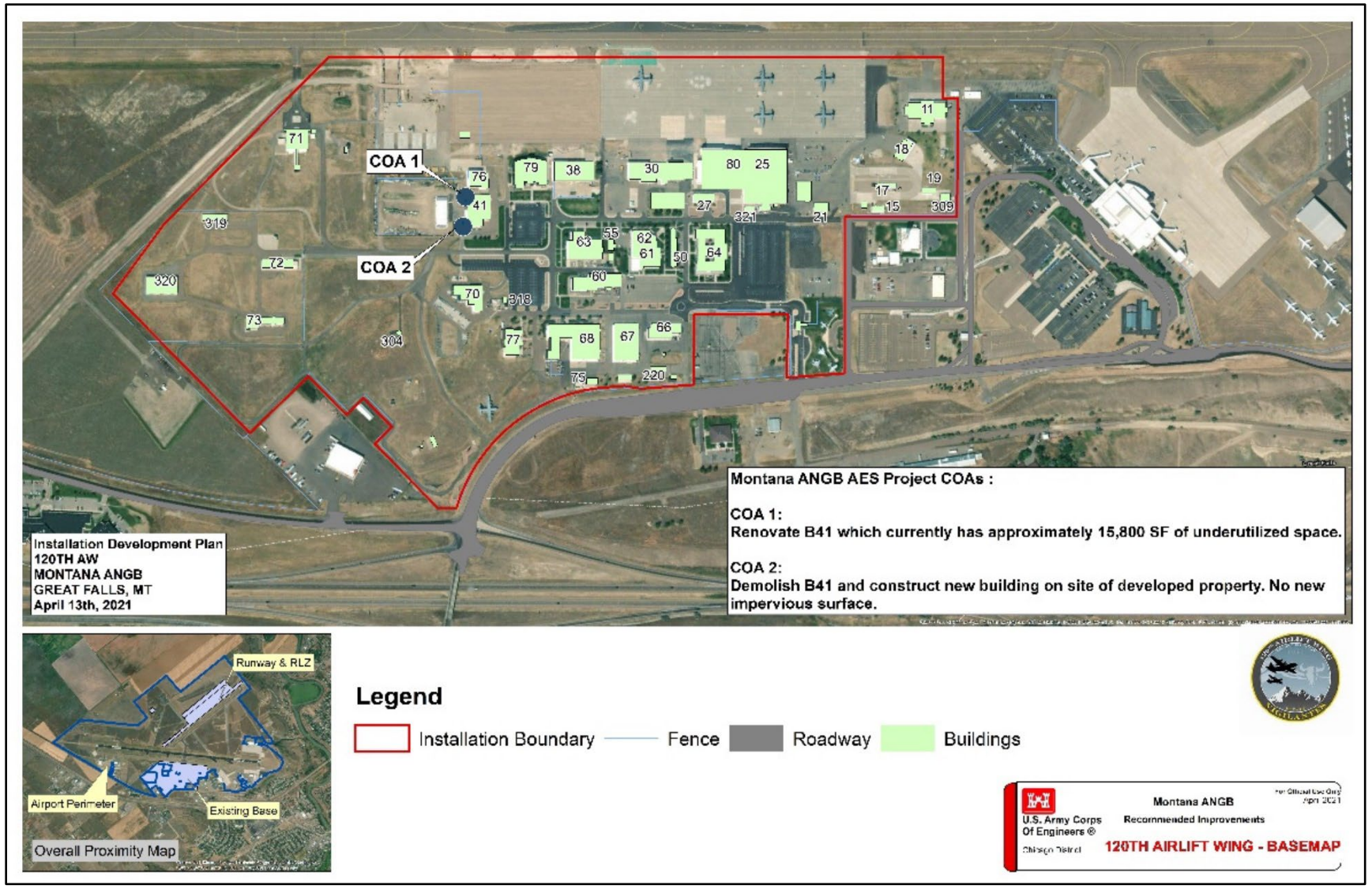

Figure 2-3: 120 AW at Great Falls ANGB, MT.

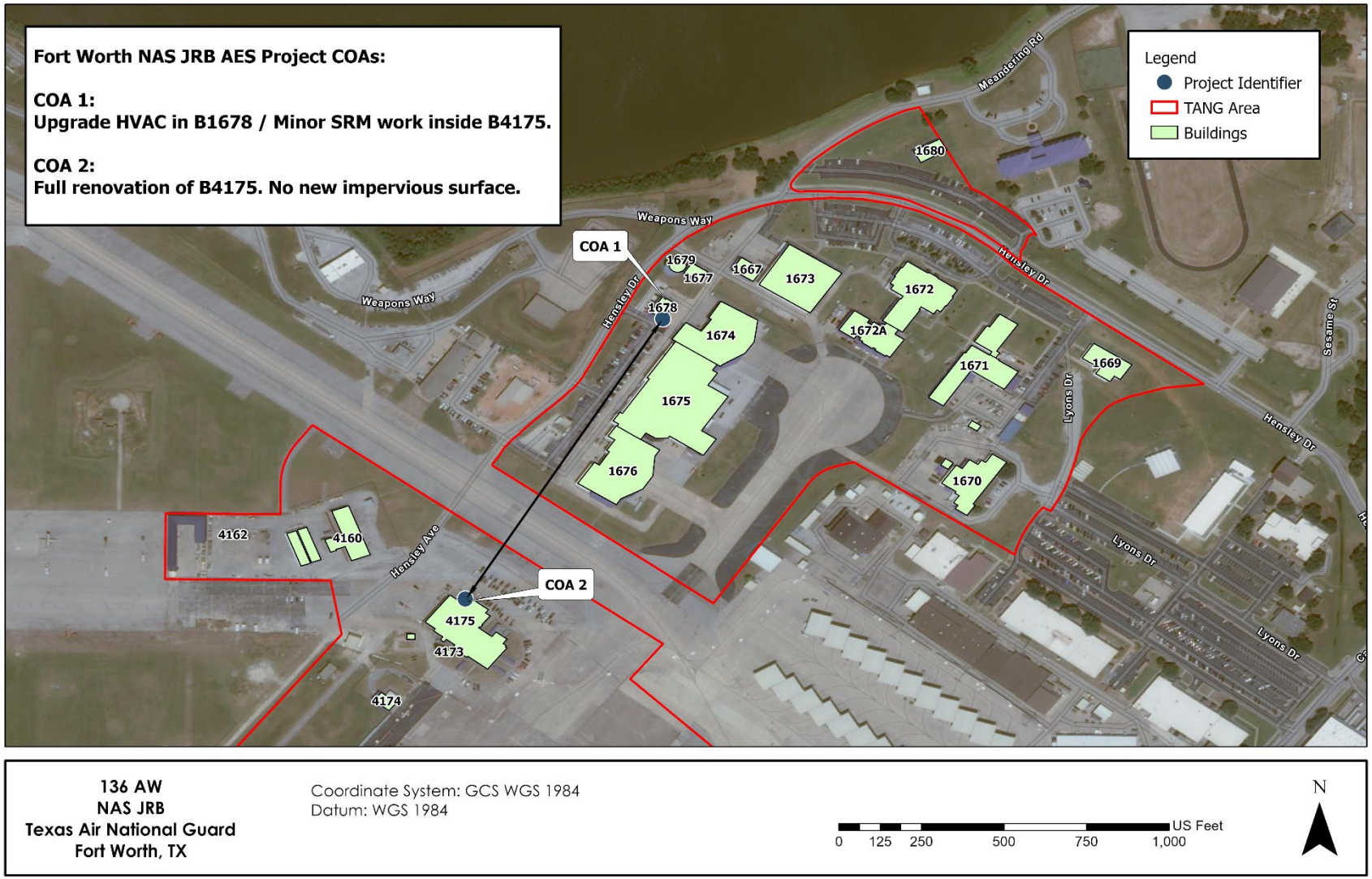

Figure 2-4: 136 AW at NAS JRB Fort Worth, TX.

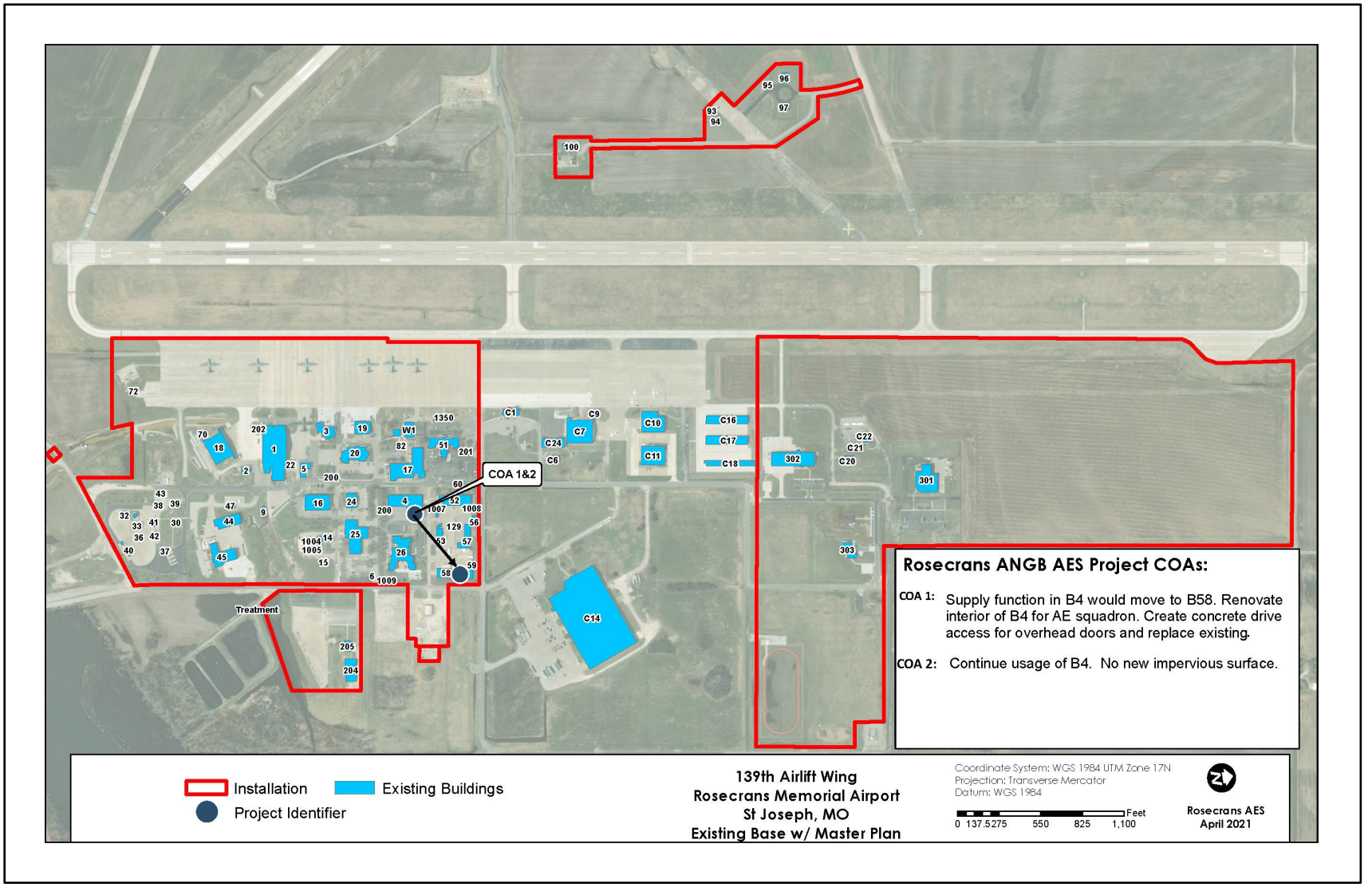

Figure 2-5: 139 AW at Rosecrans ANGB, MO.

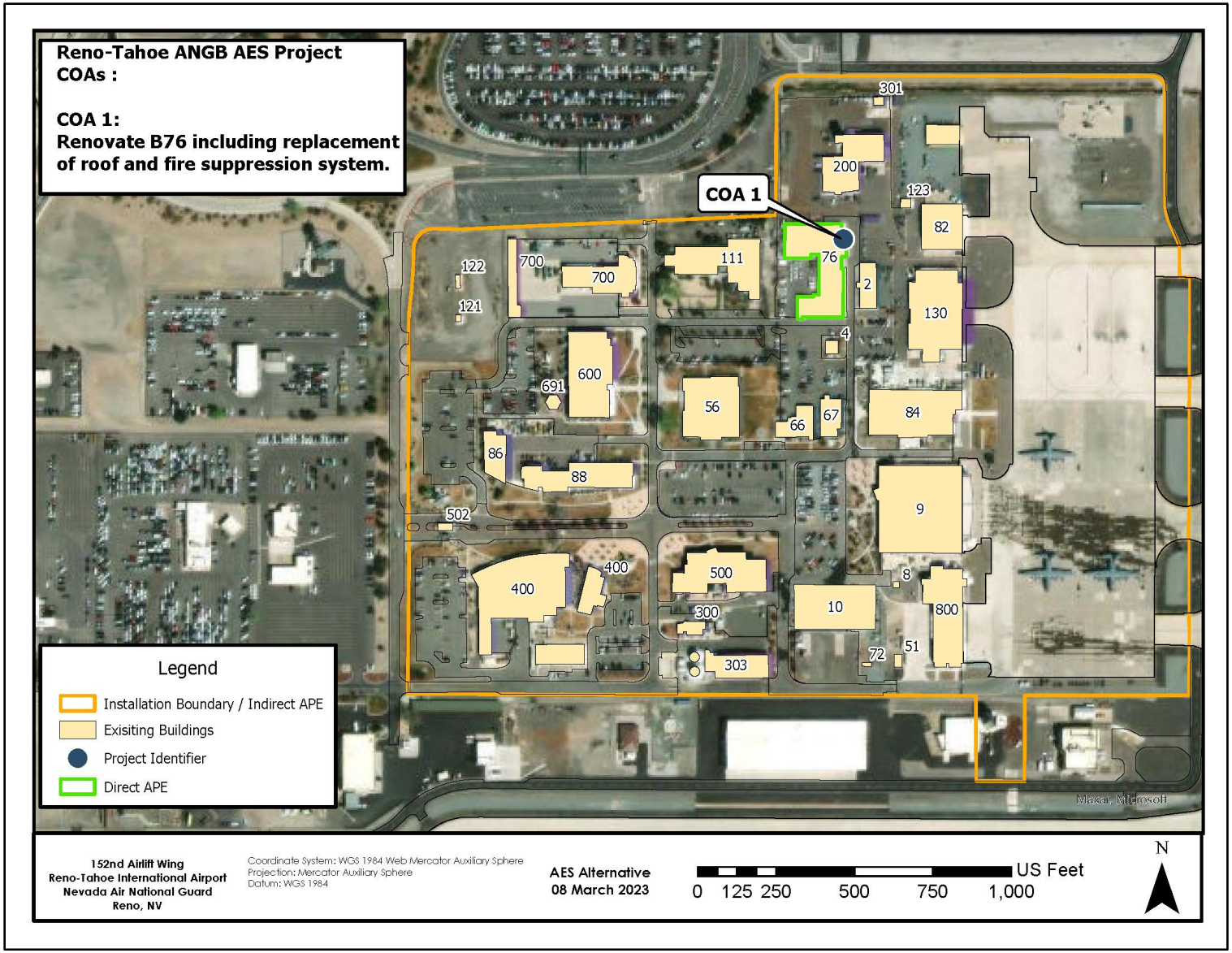

Figure 2-6: 152 AW at Reno/Tahoe ANGB, NV.

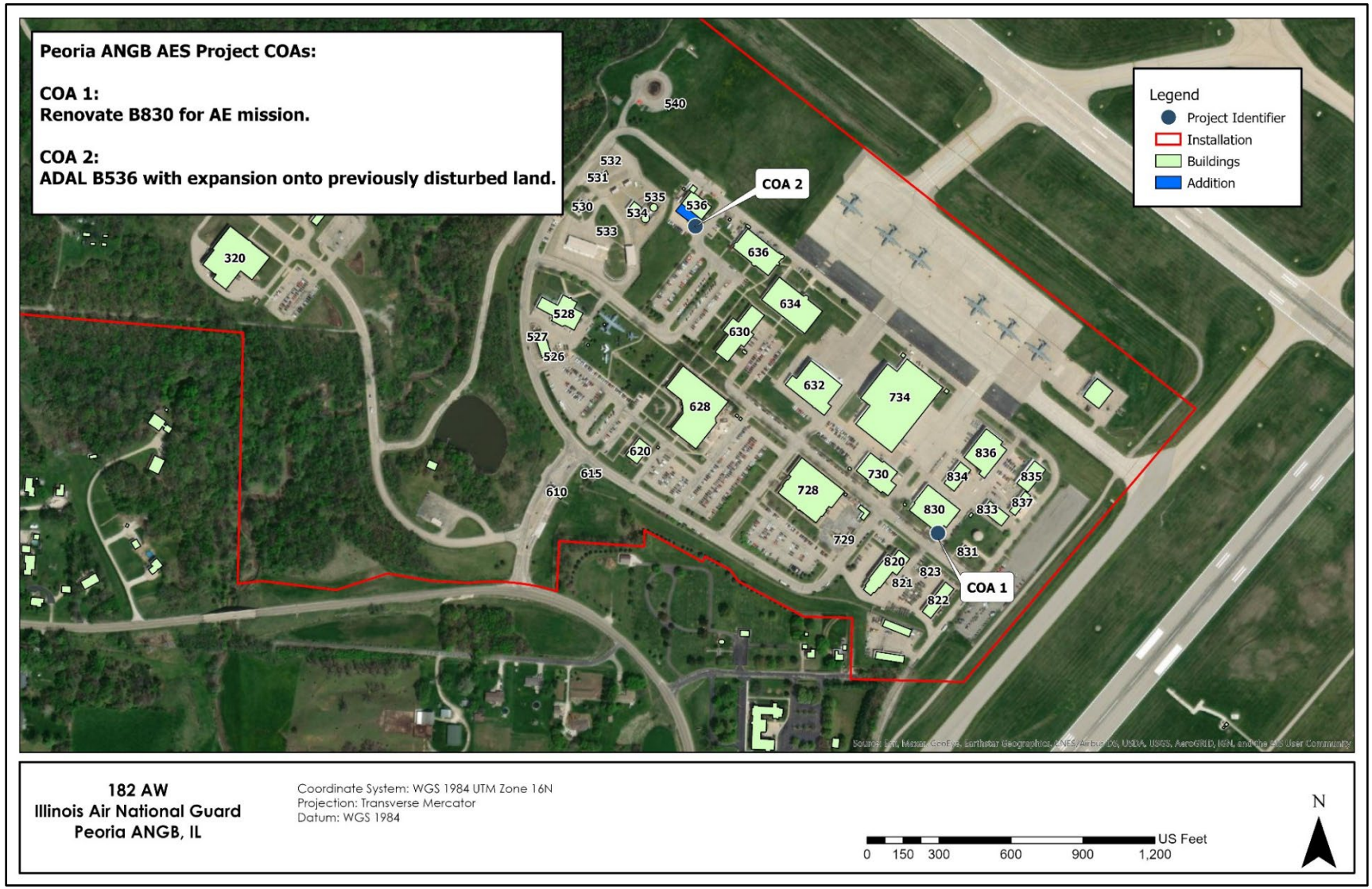

Figure 2-7: 182 AW at Peoria ANGB, IL.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

3.1 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

Sections 3.2 to 3.13 include a detailed discussion of the impacts to individual resources, as applicable. It is noted that the No Action Alternative represents no change from current conditions as staffing levels would remain the same as AES #10 would not be beddown, and thus has no new effects on any resources.

3.2 SAFETY

3.2.1 Definition of Resource

A safe environment is one in which there is no, or optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses 1) workers' health and safety during construction and demolition activities, and 2) public safety during demolition and construction activities and during subsequent operation of those facilities.

3.2.2 Existing Conditions

For all P&RAs, construction work site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DoD and USAF regulations designed to comply with standards issued by the Occupational Safety & Health Administration and the USEPA, such as AFI 48-145 Occupational and Environmental Health Program (2014) and Air Force Policy Directive (AFPD) 90-8 Environment, Safety & Occupational Health Management and Risk Management (2017). All contractors performing construction activities at the respective bases are responsible for meeting Occupational Safety and Health Administration standards and for protecting their employees during contracted operations (AFI 48-145, 2014).

3.2.3 Evaluation Criteria

Federal agencies must comply with federal work and public safety laws as well as with agency regulations, policy, and guidance. Actions that would impact the health and safety of base employees and contractors, or that would extend to impact the public would be considered significant. The significance of safety issues can be mitigated by rigorous application of safety standards and practices.

3.2.4 Environmental Impacts

Based on an assumption of safety compliance for base activities, including construction projects, all P&RAs will have no impacts on safety. All construction projects would follow applicable safety requirements. Regarding cumulative impacts, the mission for all P&RAs has not changed; no additional aircraft are being added, and an increase in flight hours is not expected. New mission capacity analyzed in this document is limited to an increase in personnel and a need for facility space. AES personnel would merge with the existing flights and comply with all required safety standards. Accordingly, no significant impacts to migratory birds, eagles, or threatened or endangered species

listed in Section 3.10.2 are anticipated. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base, would have no significant impacts to safety.

Under the No Action Alternative, no AES activities would occur at any of the bases. Safety at all bases would remain unchanged, and the No Action Alternative would have no significant impacts to safety.

3.3 NOISE

3.3.1 Definition of a Resource

Noise is defined as unwanted sound or, more specifically, as any sound that interferes with communication, is intense enough to damage hearing, or is otherwise annoying (Federal Interagency Committee on Noise, 1992). Human response to noise varies according to the type and characteristics of the noise source, distance between the noise source and the receptor, sensitivity of the receptor, and time of day. Due to wide variations in sound levels, sound is measured in decibels (dB), which is based on a logarithmic scale (e.g., 10-dB increase corresponds to a 100-percent increase in perceived sound). Sound measurement is further refined by using an A- weighted decibel scale (dBA) that emphasizes the range of sound frequencies that are most audible to the human ear (between 1,000 and 8,000 cycles per second). *Table 3-1* identifies typical noise levels associated with common indoor and outdoor activities and settings.

Table 3-1: Sound Levels of Typical Noise Sources.

Activity	Sound Levels (dBA)
Normal breathing	10
Whispering at 5 feet	20
Soft whisper	30
Rainfall	50
Normal conversation	60
Vacuum cleaner	60 – 85
Power lawn mower	65 – 95
Tractor	90
Snowmobile	100
Ambulance Siren	120
Chain saw	125
Jet engine taking off	150
Artillery fire at 500 feet	150
Fireworks at 3 feet	162
Handgun	166
Shotgun	170

Source: Center for Hearing and Communication, 2019.

It is DoD Policy (DoD Instruction 4715.13) to minimize effects on the human environment resulting from noise, while maintaining military readiness. The Air Force

sets a criterion sound level for an 8-hour exposure of 85 dBA, as the basis for a noise standard (AFI 48-127. 2016). Limiting values for noise are based on both sound level and exposure time. These are summarized in *Table 3-2*.

Table 3-2: Limiting Values for Unprotected Noise Exposures.

Sound Level (dBA)	Time (minutes)
Over 115	Forbidden
115	0.5
110	1.5
100	15
90	151
85	480
80	24 hours
Below 80	No limit

Adapted from AFI 48-127. 2016.

3.3.2 Existing Conditions

3.3.2.1 Aircraft Activity

The Air Force noise program focuses on noise from the operation of aircraft, small arms, munitions, and explosives that may affect people, animals (domestic or wild), or structures on or in areas within close proximity of a military installation range, within Special Use Airspace, and Airspace for Special Use (AFI 32-1015, 2019). The noise levels at all P&RAs are typical of many military installations and are discussed jointly. Noise at all R&RAs primarily consists of aircraft noise. For this EA, a separate noise analysis for aircraft noise was not performed since levels are not expected to change under the Proposed Action.

3.3.2.2 Ground-Based Activity

Ground-based noise levels associated with the P&RAs experienced off the base are typical of military installations and are not expected to change at this time, since key nuisance noise triggers, such as engine testing facilities, are not moving or changing.

3.3.3 Evaluation Criteria

Noise impact analyses evaluate potential changes to existing noise environments that would result from implementation of a proposed action. A noise analysis includes effects on humans and the environment as well as estimates on the extent and magnitude of the noise generated.

3.3.4 Environmental Impacts

For all P&RAs, AES personnel that would be involved in flight missions will join existing, already scheduled crew for training flights. Therefore, changes to sound levels are not anticipated under any P&RA.

Noise from construction activities would be generated by a broad array of powered, noise-producing mechanical equipment used in the construction process. This

equipment ranges from hand-held pneumatic tools to dump trucks, concrete pump trucks, and excavators. *Table 3-3* shows noise levels associated with various construction phases when all pertinent equipment is present and operating, at a reference distance of 50 feet.

Table 3-3: Typical Noise Levels from Construction Activities.

Construction Activity	Measured Sound Level at 50 feet (dBA L_{max})[a]
Backhoe	78
Excavator	81
Dump Truck	76
Paver	77
Front End Loader	79
Roller	80

[a] Construction Noise Handbook. Federal Highway Administration. 2006.

Sounds are more significant when closer to the source; sound levels decrease by approximately 5 dBA L_{eq} for each 50 feet distance from the source.

Although there would be less than significant impacts to noise levels outside the Proposed Action area during construction activities, the following BMP would be implemented to ensure any unforeseen potential impacts are minimized:

- Limitations on work hours to avoid early morning, evening/night, and weekend work which would disturb nearby homeowners.

Regarding cumulative impacts, the mission for the P&RAs has not changed; no additional aircraft are being added, and an increase in flight hours is not expected. New mission capacity analyzed in this document is limited to an increase in personnel and a need for facility space. AES personnel would merge with the existing flights and operational noise levels would not appreciably exceed baseline noise levels in the area. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant noise impacts.

Under the No Action Alternative, no AES activities would occur at any of the bases. Noise at all bases would remain unchanged, and the No Action Alternative would have no significant impacts on noise-sensitive receptors.

3.4 LAND USE

3.4.1 Definition of a Resource

Land use can be separated into two primary categories: natural and human-modified. Natural land use includes woodlands, rangeland, grasslands, and other open or undeveloped areas. Human-modified land use includes residential, commercial, industrial, communications and utilities, agricultural, institutional, recreational, and generally other areas developed from a natural land cover condition. Land use is regulated by management plans, policies, regulations, and ordinances (i.e., zoning) that

determine the type and extent of land use allowable in specific areas and protect specially designated or environmentally sensitive areas.

Installation planning requirements include siting criteria to ensure compatible land uses (AFI 32-1015, 2019). The Air Installations Compatible Use Zones (AICUZ) Program includes the following objectives:

- Assist local, regional, state, and federal officials in protecting the public health, safety, and welfare, by promoting long-term compatible land use on and near air installations.
- Protect USAF operational capability from the effects of land and water use that are incompatible with USAF operations.
- Manage mission encroachment while influencing mission sustainability by promoting compatible land use in the community.

The program requires new facilities and land uses to be consistent with the land use compatibility recommendations in Air Force Handbook 32-7084 (2017), which includes designation of clear zones, wildlife exclusion zones, historical preservation requirements, and other special land protections. The AICUZ Program only applies to 136 AW at NAS JRB Forth Worth, TX.

3.4.2 Existing Conditions

3.4.2.1 Land Use

Land use at all P&RAs are similar and are therefore discussed jointly. All P&RAs are located within the existing installation boundaries and involve buildings that are either underutilized or outdated. There are no natural land uses within the project areas at any of the respective bases; all work would occur within existing facilities or in areas of prior development. Each base is currently equipped with C-130 aircraft, except for Stewart ANGB, which is equipped with the C-17 aircraft.

3.4.3 Evaluation Criteria

The land use impacts analysis evaluates the P&RAs compatibility with existing land use as well as consistency with adopted land use plans and policies. The significance of impacts is based on the level of land use sensitivity in areas affected by the Proposed Action. In general, land use impacts are considered significant if they are:

1. Inconsistent or noncompliant with applicable land use plans and policies;
2. Preclude the viability of existing land use;
3. Preclude continued use or occupation of an area; or
4. Incompatible with adjacent or vicinity land use to the extent that public health or safety is threatened.

3.4.4 Environmental Impacts

All P&RAs are consistent with the existing land uses of their respective installations. All projects occur within existing base boundaries and are consistent with existing base land uses. The P&RAs do not include any impacts to farmland. Each project would

entail either renovation of existing facilities or demolition to allow for construction of new facilities. All new construction would occur within the same footprint as demolition except for at the 182 AW, where construction would occur in a new location within the base boundary. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant land use impacts.

Under the No Action Alternative, no AES activities would occur at any of the bases. Land use at all bases would remain unchanged, and the No Action Alternative would have no impacts to land use.

3.5 VISUAL RESOURCES

3.5.1 Definition of a Resource

Visual resources are defined as the natural and manufactured features that constitute the aesthetic qualities of an area. These features form the overall impression that an observer receives of an area (i.e., its landscape character). An area's susceptibility to visual impacts is related to visual sensitivity. Highly sensitive resources include national and state parks, recreation areas, historic sites, wild and scenic rivers, designated scenic roads, and other areas specifically noted for aesthetic qualities.

3.5.2 Existing Conditions

The visual environment at all P&RA installations is characteristic of military and civilian airfields and are discussed together. Structures include hangars, maintenance and support facilities, and navigational equipment. The built environment of each installation consists predominantly of hangars and administrative, maintenance, warehouse, and industrial facilities served by a road network, most of which are adjacent to the airfield. Minor landscaping, consisting mostly of ornamental shrubbery and mowed turf grass between buildings, modestly enhances the existing bases. The predominant visual character of all installations is their industrial nature.

3.5.3 Evaluation Criteria

Determination of the significance of impacts on visual resources is based on the level of visual sensitivity in an area. Visual sensitivity is defined as the degree of public interest in a visual resource and concern over changes in the quality of that resource. In general, an impact on a visual resource is significant if implementation of the Proposed Action would result in a substantial alteration of a sensitive visual setting.

3.5.4 Environmental Impacts

For all P&RAs, no unique or sensitive visual resources exist in the area. All work is located within the existing base boundaries and is consistent with the existing visual environment. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant impacts to visual resources at any of the R&RAs.

Under the No Action Alternative, no AES activities would occur at any of the bases. The visual environment at all bases would remain unchanged, and the No Action Alternative would have no impacts to visual resources.

3.6 WATER RESOURCES

3.6.1 Definition of a Resource

The Federal Water Pollution Control Act (also known as the Clean Water Act [CWA], 33 USC 1341-1346) has a goal to restore and maintain the chemical, physical, and biological integrity of waters (lakes, rivers, streams, wetlands, estuaries, and coastal zones) throughout the nation. As such, the CWA establishes the basic structure for regulating discharges of pollutants into the waters of the Unites States (WOTUS) and regulating water quality standards for surface waters. Pertinent sections of the CWA include but are not limited to:

Section 122.26 of the CWA regulates stormwater discharge associated with small construction activity including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. This section also regulates small construction activity to include the disturbance of less than one acre of total land area that is part of a larger common plan of development that will ultimately disturb equal to or greater than one and less than five acres of land. There are exemptions to this requirement listed in 40 CFR 122.26(c)(1)(ii) as long as the operator of the construction activity provides a narrative description to include the specific requirements detailed in the section.

Section 401 gives states and authorized tribes the authority to grant, deny, or waive water quality certification of proposed federally licensed or permitted activities that may result in a discharge into WOTUS as regulated under Section 404.

Section 404 regulates development activities in WOTUS, including wetlands. It requires a permit from the United States Army Corps of Engineers (USACE) for dredging and filling of WOTUS, including wetlands.

The Rivers and Harbors Act (33 USC 401 et seq.) establishes regulatory authority over the construction of any bridge, dam, dike, causeway, or other structure over, under, or through navigable WOTUS. Section 10 of the Act prohibits (1) building of any wharfs, piers, jetties, and other structures and (2) excavating or filling within navigable waters without a Section 10 permit from the USACE.

Section 438 of the Energy Independence Security Act (EISA) of 2007 (42 USC 17094) requires all federal agencies, including the DoD, to reduce stormwater runoff from federal development projects with a footprint that exceeds 5,000 SF. These projects shall use site planning, design, construction, and maintenance strategies for the property and maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Federal agencies are required to use the *Technical Guidance on*

Implementing the Stormwater Runoff Requirements for Federal Projects to comply with the requirements of EISA Section 438. The Technical Guidance was prepared by the USEPA, EPA 841-B-09-001, December 2009 as part of stormwater management design.

EO 11990 *Protection of Wetlands* is intended to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies are required to consider alternatives to the use of wetland sites and to limit potential damage if an activity affecting a wetland cannot be avoided.

EO 11988 *Floodplain Management,* as amended by EO 13690 *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, requires federal agencies to avoid to the greatest extent possible, the long- and short-term impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

The Federal Emergency Management Agency (FEMA) regulates floodplains, which are recognized as Special Flood Hazard Areas (SFHAs) on the Flood Insurance Rate Maps. SFHAs are defined as the area that will be inundated by a flood event having a 1 percent chance of being equaled or exceeded in any given year (commonly referred to as the 100-year floodplain).

Water resources analyzed in this study include surface and groundwater (GW) resources. The quality and availability of surface and GW and the potential of an area for flooding are addressed in this section.

3.6.1.1 Surface Water and Wetlands

Surface water resources include those defined as WOTUS in 33 CFR 328.3(a) that are important for a variety of reasons including economic, ecological, recreational, and human health.

Wetlands are defined by the USACE and USEPA as “those areas that are inundated or saturated by surface or GW at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR 328.3 [c][1]) and are protected as a subset of the WOTUS under Section 404 of the CWA. Wetlands provide a variety of functions including GW recharge and discharge; flood flow alteration; sediment stabilization; sediment and toxicant retention; nutrient removal and transformation; support of aquatic and terrestrial diversity and abundance; and uniqueness. Three criteria are necessary to define wetlands: vegetation (hydrophytes), soils (hydric), and hydrology (frequency of flooding or soil saturation). Hydrophytic vegetation is classified by the estimated probability of occurrence in wetland versus upland (non-wetland) areas throughout its distribution. Hydric soils are those that are saturated, flooded, or ponded for sufficient periods during

the growing season and that develop anaerobic conditions in their upper horizons (i.e., layers). Wetland hydrology is determined by the frequency and duration of inundation and soil saturation; permanent or periodic water inundation or soil saturation is considered a significant force in wetland establishment and proliferation. Jurisdictional wetlands are subject to regulatory authority under Sections 401 and 404 of the CWA and EO 11990, *Protection of Wetlands*.

3.6.1.2 Groundwater

GW comprises the subsurface hydrologic resources of the physical environment and is an essential resource in many areas; GW is commonly used for potable water consumption, agricultural irrigation, and industrial applications. GW properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition.

3.6.1.3 Floodplains

Other issues relevant to water resources include watershed areas affected by existing and potential runoff and hazards associated with 100-year floodplains. Floodplains are belts of low, level ground present on one or both sides of a stream channel and are subject to either periodic or infrequent inundation by flood water. Inundation dangers associated with floodplains have prompted federal, state, and local legislation that limits development in these areas largely to recreation and preservation activities. Water resources are also important because of their significant role in determining historical migratory and settlement patterns of virtually all mammals; influence on nesting and migratory activities of many bird species; contribution to the evolution of landforms through their roles in the erosion process; and their participation in critical global systems including hydrologic cycle, temperature modification, and oxygen replenishment.

3.6.2 Existing Conditions

3.6.2.1 Surface Water and Wetlands

3.6.2.1.1 105 AW at Stewart ANGB, NY

Two waterways were identified in the base wide assessment report (USACE, 2020b). The waterway identified as Seasonal Ditch conveys water from along the roadway embankment and Wetland 2 eastward, flowing into the second waterway, identified as Perennial Stream. From here, water flows eastward to Murphy's Gulch. Both waterways were determined to be under the jurisdiction of the USACE.

A wetland delineation was conducted base wide in September 2020 (USACE, 2020b). Three wetlands were identified at SANG during the wetland assessment (*Figure 3-1*). Wetland 1 is located along the eastern edge of the project area. The dominant vegetation cover observed was red maple (*Acer rubrum*), multiflora rose (*Rosa multiflora*), poison ivy (*Toxicodendron radicans*), sensitive fern (*Onoclea sensibilis*), skunk cabbage (*Symplocarpus foetidus*), and white ash (*Fraxinus americana*). This wetland is located at the bottom of the hillslope. Wetland 1 is connected to a freshwater pond on the east side of Interstate 87 through a culvert under the roadway. The

freshwater pond flows into Murphy's Gulch which eventually flows to the Hudson River to the east. Therefore, Wetland 1 is considered to be jurisdictional.

Wetland 2 is in the northern portion of the base near the entrance gate. The dominant vegetation cover observed was American sycamore (*Platanus occidentalis*), common reed (*Phragmites australis*), multiflora rose, and poison ivy. This wetland is within a flat area at the bottom of a slope that drains into a culvert drainage system to the southeast, crosses under Orr Avenue, and eventually flows into the Hudson River to the east. As it is a naturally occurring wetland which drains into an emergent tributary that contributes surface water flow to a traditional navigable water, this wetland is jurisdictional.

Wetland 3 is in the northern portion of the project area near the entrance gate. Wetland 3 is a forested/shrub wetland, and the dominant vegetation cover observed was American sycamore, common reed, multiflora rose, and field horsetail (*Equisetum arvense*). This wetland is located on both sides of a small, unnamed perennial creek which flows eastward, crosses under Orr Avenue, and eventually drains into the Hudson River to the east. As this is a naturally occurring wetland formed by an emergent tributary flowing through its center and that contributes surface water flow to a traditional navigable water, this wetland is jurisdictional.

3.6.2.1.2 120 AW at Great Falls ANGB, MT

On July 6-9 and August 24-27, 2020, a review and delineation of the WOTUS, including wetlands, was conducted on the 120 AW installation at Great Falls ANGB (*Figure 3-2*) (ANG, 2021d). The delineation was conducted to clearly locate all jurisdictional waterways, including wetlands, to facilitate future management decisions. The installation sits on a plateau with large portions that are developed, with little opportunity for wetlands.

Wetland 1 is in a stormwater drainage ditch in the southern portion of the Great Falls ANGB. During the field assessment, Wetland 1 was identified as an approximately 50 square foot (0.001 acre) palustrine emergent wetland, with dominant vegetation including broadleaf cattail (*Typha latifolia*) and common spikerush (*Eleocharis palustris*). The soil matrix within Wetland 1 displayed a depleted matrix. The primary wetland hydrology indicator found in Wetland 1 was saturation; other wetland hydrology indicators included geomorphic position and passing the FAC-Neutral test. Outside of Wetland 1, the stormwater drainage ditch is dominated by upland vegetation and begins and ends in flat upland areas. The ditch does not exhibit characteristics of an ordinary high-water mark and there is no apparent connection to a Traditionally Navigable Water or Relatively Permanent Waterway.

Wetland 1 exhibited characteristics of all three wetland parameters as defined in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region – Version 2.0* (USACE, 2010). However, the Approved Jurisdictional Determination (AJD) determined that Wetland 1 and the adjacent stormwater drainage ditch were preamble waters that were constructed in uplands and developed as a result of stormwater drainage and irrigation activities and lacked relatively permanent flow to

regulated WOTUS (ANG, 2021d). Accordingly, Wetland 1 is not currently regulated by USACE and the base has no jurisdictional wetlands (ANG, 2021d).

3.6.2.1.3 136 AW at NAS JRB Fort Worth, TX

Water resources in the vicinity of Proposed Action include Lake Worth to the north and the West Fork of the Trinity River to the east (*Figure 3-3*). Farmers Branch Creek extends under the runways and taxiways in the southern portion of the installation. An assessment of the jurisdictional status of these resources is not available (USAF, 2020).

3.6.2.1.4 139 AW at Rosecrans ANGB, MO

On June 15-17, 2021 and June 15 and 16, 2022, a review and delineation of WOTUS, including wetlands, was conducted on the 139 AW installation at Rosecrans ANGB, MO. The area of review was approximately 741 acres in three separate areas of the base.

Twenty-four wetlands identified within the AOR exhibited characteristics of all three wetland parameters as defined in the *Corps of Engineers Wetland Delineation Manual (USACE, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010). These included open water, emergent, scrub-shrub, and forested wetlands, totaling 14.25 acres. Additionally, three stream channels were identified that exhibited a defined bed and bank with an OHWM, including 2,675 linear feet of perennial channel and 2,860 linear feet of intermittent channel. These findings will be submitted to the USACE St. Louis District for their review to obtain a written AJD.

3.6.2.1.5 152 AW at Reno/Tahoe IAP, NV

A wetland delineation/WOTUS survey was conducted in 2019 identified the drainage system, Margrave Ditch, located along the northern and northeastern portions of the Nevada ANG (NVANG) Base as a WOTUS (*Figure 3-5*). Margrave Ditch is a relatively permanent water that flows into Boynton Slough, which is located on the southeastern boundary of the RNO, with an eventual downstream nexus to the Truckee River. USACE confirmed in a written AJD that all 1,308 linear feet of Margrave Ditch is a perennial WOTUS regulated under Section 404 of the CWA (USACE, 2020a). The Final WOTUS/Wetland Report did not find any areas that met the criteria of a wetland at the 152 AW (USACE, 2020a). The closest wetlands to the 152 AW installation are near the eastern edge of the RNO in Boynton Slough (RTAA, 2017).

3.6.2.1.6 182 AW at Peoria ANGB, IL

The major surface water on the base is the East Branch of LaMarsh Creek (*Figure 3-6*). LaMarsh Creek is a low gradient meandering stream located in a partially constrained ravine. All stormwater runoff is eventually discharged into this creek, which flows into the Illinois River. LaMarsh Creek has not been evaluated for impairment and is therefore not listed as an impaired water body on the Illinois 303(d) list of impaired water bodies (NGB, 2017). All surface water runoff from the base drains to concrete-lined ditches and a stormwater detention pond at the western corner of the base. The installation contains 16 stormwater discharge outfalls that discharge into the East

Branch of the LaMarsh Creek off-base. The stormwater discharge outfalls include seven industrial outfalls, one emergency overflow outfall, and eight non-industrial outfalls. Drainage areas have been delineated for each of the base outfalls. Additionally, the base has 17 inflow points where surface water enters the base property (NGB, 2017).

A delineation of the boundaries of all onsite WOTUS, including wetlands, was completed in 2013, in accordance with the 1987 USACE *Wetlands Delineation Manual* (USACE, 1987). The delineation identified a combination of jurisdictional PEM wetlands, jurisdictional relatively permanent waters (RPWs), jurisdictional non-RPWs, non-jurisdictional non-RPWs, and non-jurisdictional stormwater ponds, swales, and channels (*Figure 3-6*) (NGB, 2013). RPWs are the main channel of the East Branch of Lamarsh Creek and intermittently flowing tributaries, totaling 14,041 linear feet. Approximately 1,700 linear feet ephemeral channels with stream features were also identified and determined to be jurisdictional (NGB, 2013). Two jurisdictional emergent wetlands, totaling 0.406 acres were also identified (NGB, 2013).All jurisdictional WOTUS are located on the less developed northwestern end of the base; B830 and B536 are located at least 700 feet from the closest jurisdictional WOTUS (NGB, 2013).

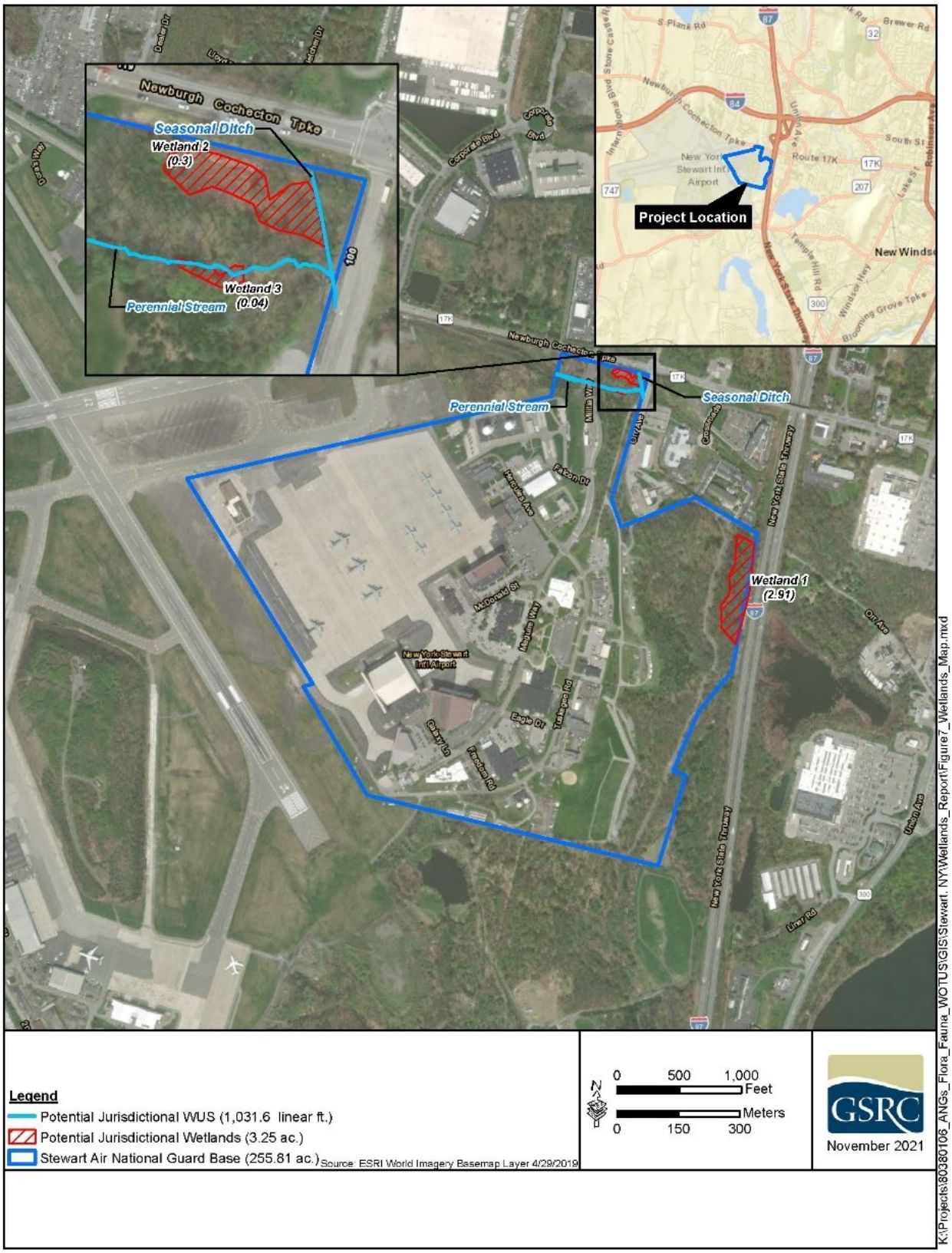

Figure 3-1: Surface Waters and Wetlands at 105 AW, Stewart ANGB, NY.

Figure 3-2: Surface Waters and Wetlands at 120 AW, Great Falls ANGB, MT.

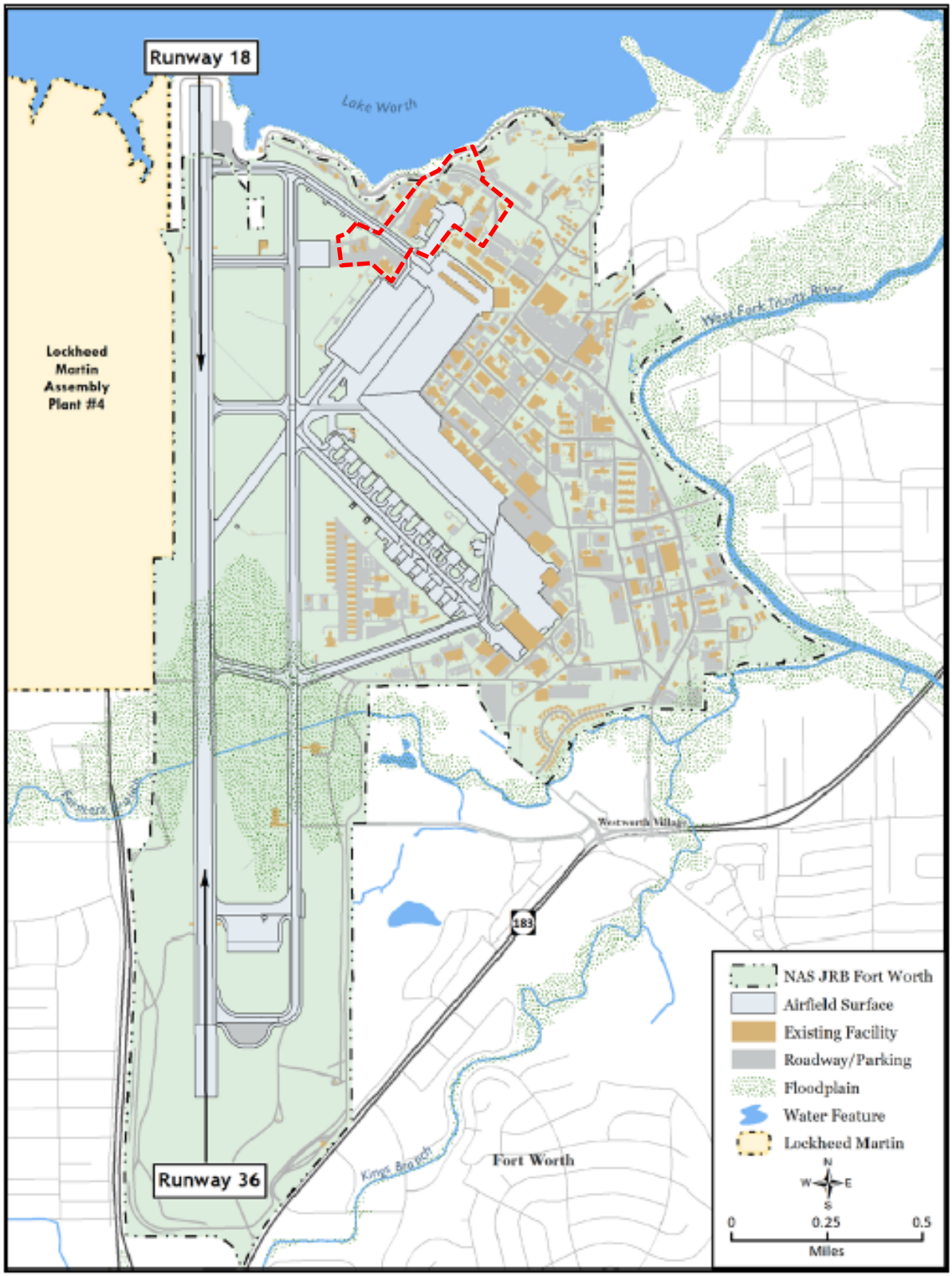

Figure 3-3: Surface Waters, Wetlands, and Floodplain at 136 AW, NAS JRB Fort Worth, TX. Area of Proposed Action shown in dashed red line.

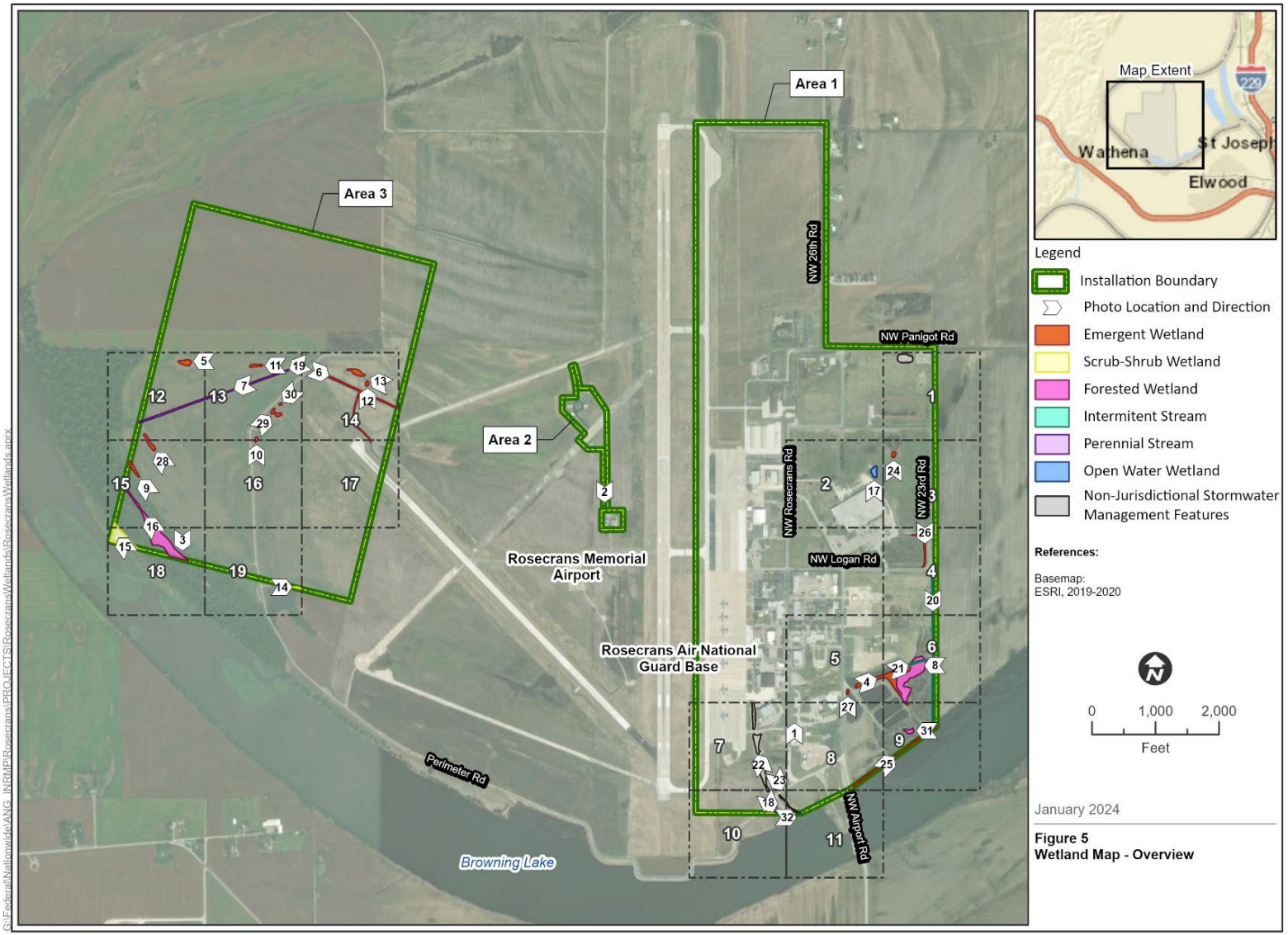

Figure 3-4: Surface Waters and Wetlands at 139 AW, Rosecrans ANGB, MO.

Figure 3-5: Surface Waters and Wetlands at 152 AW, Reno/Tahoe IAP, NV.

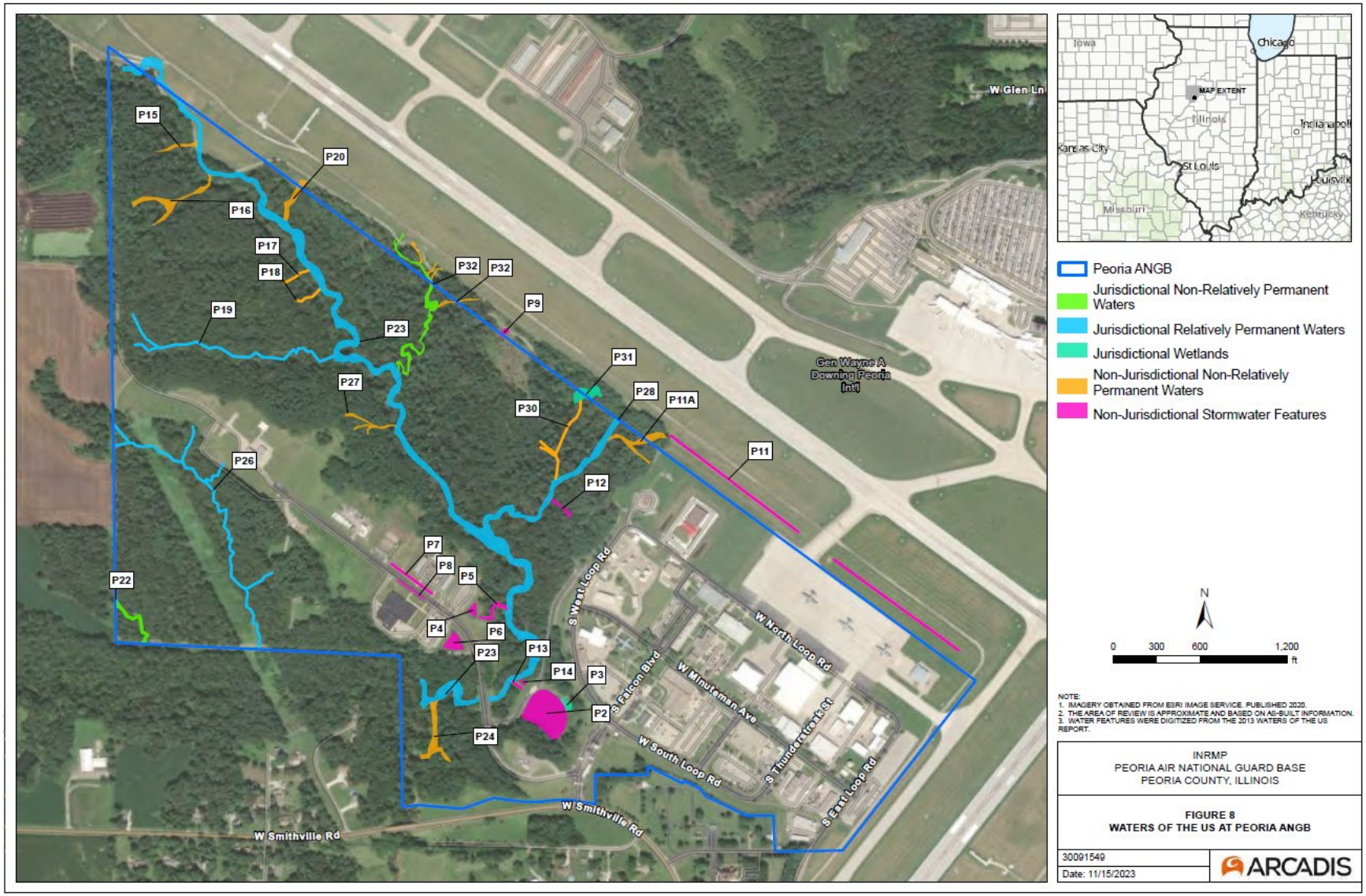

Figure 3-6: Surface Waters and Wetlands at 182 AW, Peoria ANGB, IL.

3.6.2.2 Groundwater

3.6.2.2.1 105 AW at Stewart ANGB, NY

The Towns of Newburgh and New Windsor are underlain primarily by bedrock aquifers and sand and gravel aquifers within the Martinsburg Formation, which consists of shales, siltstones, and sandstones (Orange County Water Authority, 1994). The primary aquifers within Orange County include Tin Brook Valley and Neversink aquifers, both considered essential to the public water supply (Orange County Water Authority, 2010). Several sand and gravel aquifers within the Town of New Windsor (consisting of stratified clay and silt) extend above and below the water table and are associated with large New York Department of Environmental Conservations-regulated wetlands. The wetland areas serve as the recharge areas for the aquifers (Orange County Water Authority, 1994).

GW within the vicinity of the installation generally follows the base topography and flows in a northwest to southeast direction with depth to GW varying from 10 to 50 feet (105 AW, 2019a). A review of the SIA reveals no substantial GW resources within airport properties (Orange County Water Authority, 1994). While there are GW wells in the vicinity of the installation, there are no public or private drinking water wells within one-quarter mile downgradient of the installation (105 AW, 2019a).

3.6.2.2.2 120 AW at Great Falls ANGB, MT

Several aquifers in the Great Falls area provide water for wells and rise to the surface as springs and streams. These aquifers are contained within various outcropping rock units in the region: the permeable limestone of the Madison Group; sandstone of the Swift Formation; sandstone beds in the Morrison and Kootenai Formations; permeable portions in the Colorado Group; and in Quaternary deposits.

High quality water obtained from aquifers in the Quaternary deposits, the Madison Group, and the Kootenai Formation are the most important sources of GW in the Great Falls area. Water from these sources is used for both agricultural and domestic purposes. Water levels in the wells are at approximately 3,300 feet above sea level and the aquifers actively exchange water with the Missouri and Sun rivers (United States Geological Survey [USGS] 2006).

The shallowest GW encountered at the 120 AW installation occurs less than 100 feet below the ground surface and comprises important sources of water for domestic and stock uses in the vicinity of GFIAP. Geologic conditions on the Sun River Bench create a perched aquifer due to relatively impermeable shale in the underlying Kootenai formation that restricts vertical movement of water, producing the perched condition. Regional GW flow in the area is to the west-northwest. However, due to seasonal fluctuation, surface topography, and variations in the underlying confining shales of the area, there may be localized areas where the GW flow directions are different. Depth to GW measurements indicate a range from 40.97 feet to 54.81 feet across the 120 AW installation (Montana ANG, 2005).

3.6.2.2.3 136 AW at NAS JRB Fort Worth, TX

Five major hydrogeologic units are located below the installation. The units are described as an upper zone of perched water in alluvial terrace deposits; an aquitard in the Goodland, Limestone, and Walnut Formations; an aquifer in the Paluxy Formations; an aquitard in the Glen Rose Formation; and an aquifer in the Twin Mountain Formation (NAS JRB Fort Worth, 2004). There are no active GW supply wells on the base. All of the potable water used on base is received from the City of Fort Worth.

3.6.2.2.4 139 AW at Rosecrans ANGB, MO

GW near 139 AW is part of an alluvial aquifer system (influenced by the Missouri River stage and the water level of Browning Lake) and is shallow (2 to 7 feet below ground surface) and abundant. GW wells located within the alluvium may provide up to 2,000 gallons per minute (Missouri Department of Natural Resources [MDNR], 2019). During low river and lake levels, GW flow is directed toward the surface water bodies. During periods of high water and flooding, the GW flow direction may reverse, as GW is recharged into the alluvial materials.

According to the USGS National Water Information System (USGS, 2019), there are no USGS wells located within a one mile radius of the existing base. Water is supplied to the airport by the Missouri American Water Company. MDNR states that there are 116 wells near the proposed projects (distance not given). Of these, 53 are abandoned and 63 are monitoring wells (MDNR, 2019b). The MDNR records for wells in Buchanan County indicate no presence of wells near the base (MDNR, 2020b). This is consistent with a lack of drinking water wells for the area and may indicate that the wells are older. There are no drinking water wells within the Proposed Action area.

3.6.2.2.5 152 AW at Reno/Tahoe IAP, NV

Within the Truckee River Watershed, three main aquifers provide GW to the region. These aquifers, in descending stratigraphic sequence, are the younger alluvium, the older alluvium, and the Truckee Formation. Most of the economically recoverable GW in the Truckee Meadows area occurs under artesian and water table conditions in the unconsolidated and partially consolidated younger and older alluvium of the valley fill (ANGRC Environmental Division, 2001).

The Truckee Formation consists of porous deposits containing a large amount of GW in storage. Due to its fine-grained nature, the formation is characterized by low permeability and low water yields. The water-bearing characteristics of both the younger and older alluvium vary widely, both laterally and vertically, and within a few feet, due to the rapidly changing depositional environments and structural formation. Recharge to the GW system is from the infiltration of water diverted for irrigation, infiltration of streamflow and precipitation, and underflow from tributary valleys (Baily,1995).

Most of the water supply in the Reno-Sparks area is diverted from the Truckee River; however, 17 public water wells are used to supplement the supply. These wells can pump up to 1,500 gallons per minute with drawdowns ranging from 40 to 100 feet. The depths at which these wells are screened range from 274 feet to greater than 800 feet

Below Ground Surface (Automated Science Group, 1989). GW from the wells in the surrounding area are tested by the Washoe County Health Department (WCHD). The tested analytes (i.e., GW whose chemical constituents are being identified and measured) include volatile organic compounds (VOCs), pesticides, polychlorinated biphenyls (PCBs), herbicides, and pentachlorophenol (PCP). GW contaminants are discussed further in Section 3.12.

The majority of the 152 AW installation and the RTO has been built on top of lacustrine deposits that are indicative of swampland. The drainage ditches found adjacent and within the installation act as a barrier to GW infiltration. Several GW wells exist adjacent to the installation and are sampled by the WCHD. The WCHD also samples a well on the NVANG base by B111 monthly for these purposes. In addition, GW monitoring wells were placed on site near the current firehouse location. The base does not use the local GW as a potable water supply. Refer to Section 3.12.2 for information on historic contamination and remediation efforts.

3.6.2.2.6 182 AW at Peoria ANGB, IL

Major influences on GW quality in the region include agricultural and urban land uses, permeability of soil and aquifers, and minerals in geological materials. According to the USGS, shallow GW (less than 100 feet [30 meters] deep) generally meets drinking water standards and guidelines. Three well sites draw GW from the San Koty Aquifer in Peoria County (NGB, 2017).

Two aquifers occur in the vicinity of the 182 AW, neither of which is used for water supplies. The first is a confined aquifer within the consolidated Pennsylvanian and older-age sedimentary units. Local well data indicate its GW depth to be 238 feet (73 meters) below ground level. The second aquifer is discontinuous and is thought to reflect an undulating water table or perched water conditions. GW flow directions are to the south-southeast in the area of the 182 AW installation (NGB, 2017).

3.6.2.3 Floodplains

3.6.2.3.1 105 AW at Stewart ANGB, IL

SANGB is not located in or near a floodplain or within any flood hazard areas as defined by FEMA (*Figure 3-7)*.

3.6.2.3.2 120 AW at Great Falls ANGB, MT

Flood hazard zones have been determined by the FEMA for the area; the 120 AW installation is not located within a 100-yr floodplain (NGB, 2021b). The installation sits at an elevation of about 350 feet above the Missouri and Sun rivers on the Gore Hill plateau and, as such, lies outside the associated 100-year floodplain (*Figure 3-8*). The airport is mapped as an “Area of Undetermined Flood Hazard”.

3.6.2.3.3 136 AW at NAS JRB Fort Worth, TX

The project areas are outside of the mapped floodplain, as shown in *Figure 3-3*.

3.6.2.3.4 139 AW at Rosecrans ANGB, MO

Flood hazard zones have been determined by the FEMA for the area. Prior to 1993, the RMAP was in a Zone B flood insurance area, indicating the property was between the 100- and 500-year flood elevations. Following the historic 1993 Flood, during which the airport was inundated, it was not known whether the condition of the main levee was suitable to protect the airfield from a 100-year flood. In 2006, USACE completed a study of the Missouri River to determine the level of protection afforded by the levee (USACE, 2006). The results of the study indicate that an elevation of 818 feet is a reasonable elevation that will provide protection from the 100-year flood. A base flood is a flood having a one percent chance of being equaled or exceeded in any given year (also referred to as the 100-year flood level). These study results lead to the current Proposed Action of moving the base north. The flood zones near the base are shown in *Figure 3-9*.

The current grade in the relocation area averages between 816 and 820 feet, near or above the base flood elevation of 818 feet as a sufficient elevation to avoid the 100-year flood (Missouri State Emergency Management Agency, 2019). The southern portion of the base is at a slightly lower elevation, around 805 to 810 feet, and within a moderate flood hazard area (FEMA, 2019). Previous flooding (in 1993) is an impetus for relocating the base to the north, to slightly higher elevations. In spring 2019, flooding on the Missouri River at St. Joseph reached a crest of 821.39 feet, which is considered major flood stage (note that the flood stage for the Missouri River is 822 – 823 feet, depending on location). This was slightly higher than the second highest historic crest of 821.34 feet in 1993, the event that precipitated the base relocation. Despite the high river stage, the base itself did not flood in 2019, likely due to improvements in the overall levee system.

3.6.2.3.5 152 AW at Reno/Tahoe IAP, NV

Similar to previous sections, the floodplains within the region are driven by the presence of the Truckee River. Over 156 square miles of floodplain occur within Washoe County. Within the floodplain, approximately 4,400 individual parcels are located entirely or partially within the floodplain. Floods within the area primarily occur during the spring snow melt. The region has experienced several major floods through time, with the most recent flood occurring in 1997. A combination of winter snow melt and a strong pacific storm caused an estimated $540 million in damage (USGS, 1997).

As shown in *Figure 3-10* and Flood Insurance Maps 32031C3044G and 32031C3232G, a small section in the southeast corner of the RTO adjacent to Boynton Slough is within the 100-year floodplain. The area is demarcated as Zone AE and is defined by the Flood and Emergency Management Agency (FEMA) as areas with 1% annual chance of flooding (100-yr floodplain) where base floodplain elevations are known. Much of the RTO as well as approximately one-third of the 152 AW boundary falls within Zone X, which is defined as having a 0.2% annual chance of flood hazard (500-yr floodplain). During the January 1997 flood, water reached the NVANG aircraft apron, but no damage was reported in buildings or material storage areas (Ogden, 1997).

3.6.2.3.6 182 AW at Peoria ANGB, IL

The developed portions of the base are located above the 100-year floodplain (*Figure 3-11*). Portions of the undeveloped northwest portion of the base have been identified by the Tri-County Regional Planning Commission and the National Flood Insurance Program as being within the 100-year floodplain of the East Branch of LaMarsh Creek (182 AW/Illinois ANG 2013a).

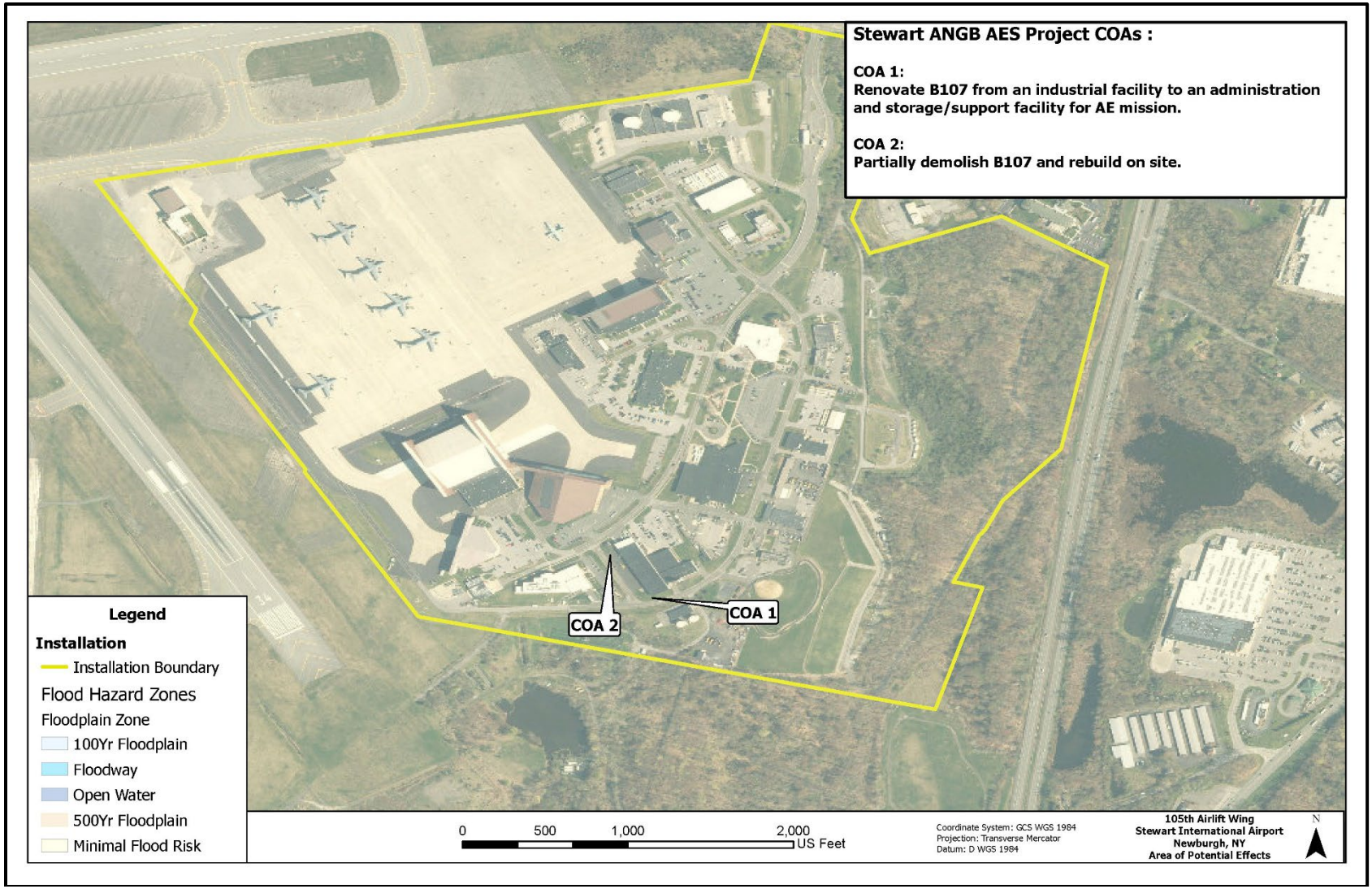

Figure 3-7: Floodplain Map for 105 AW at Stewart ANGB, NY.

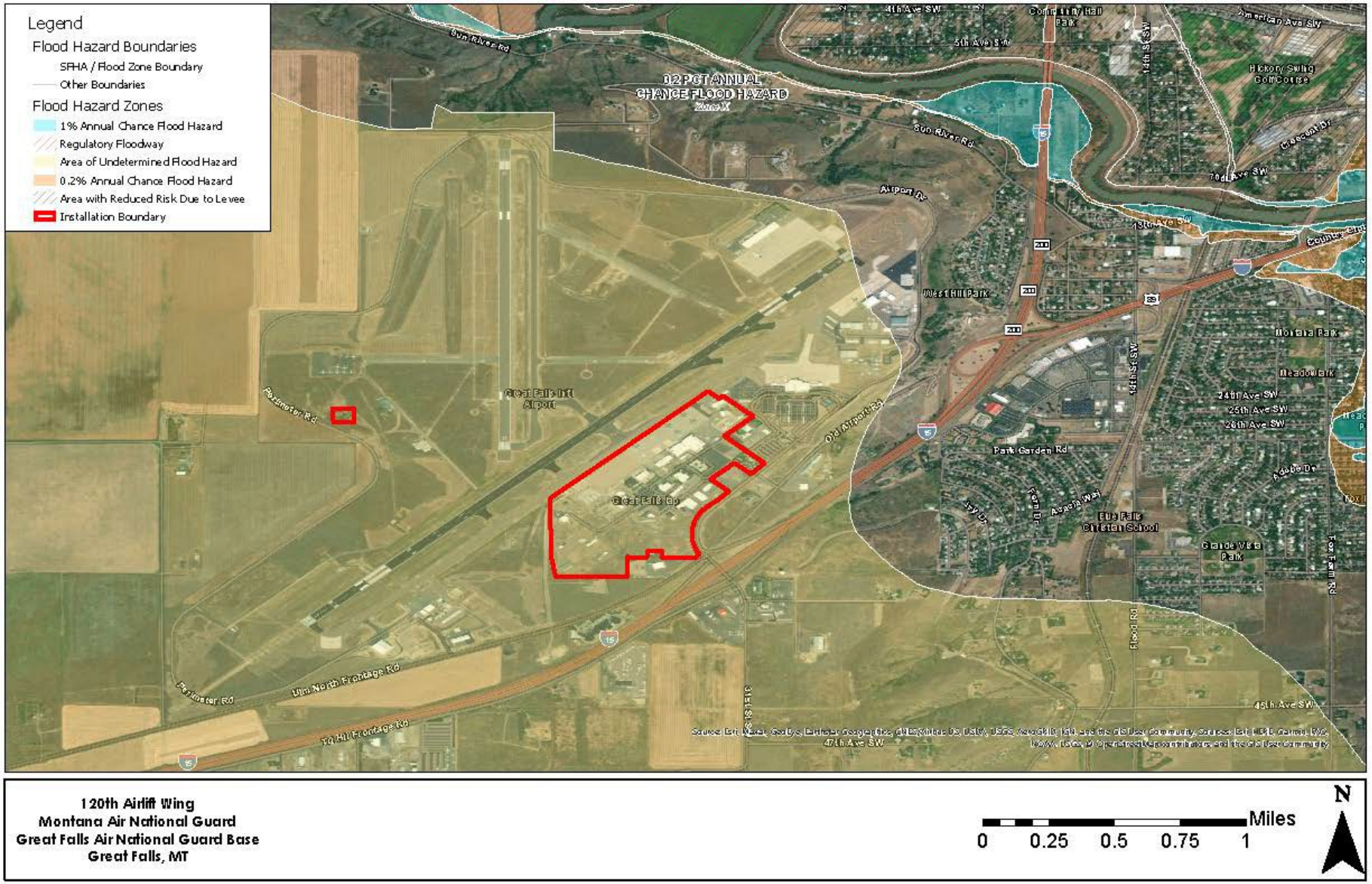

Figure 3-8: Floodplain Map for 120 AW at Great Falls ANGB, MT.

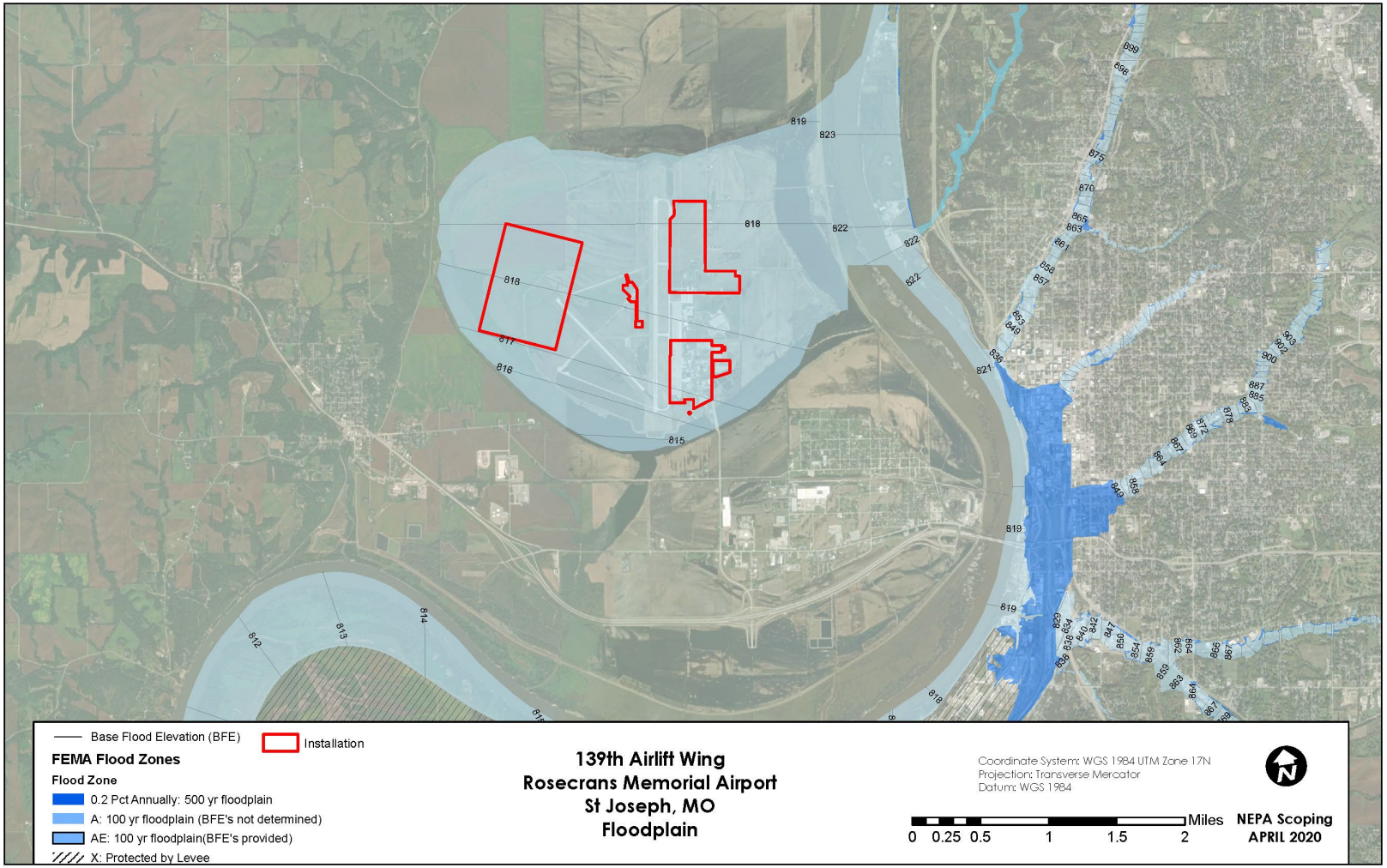

Figure 3-9: Floodplain Map for 139 AW at Rosecrans ANGB, MO

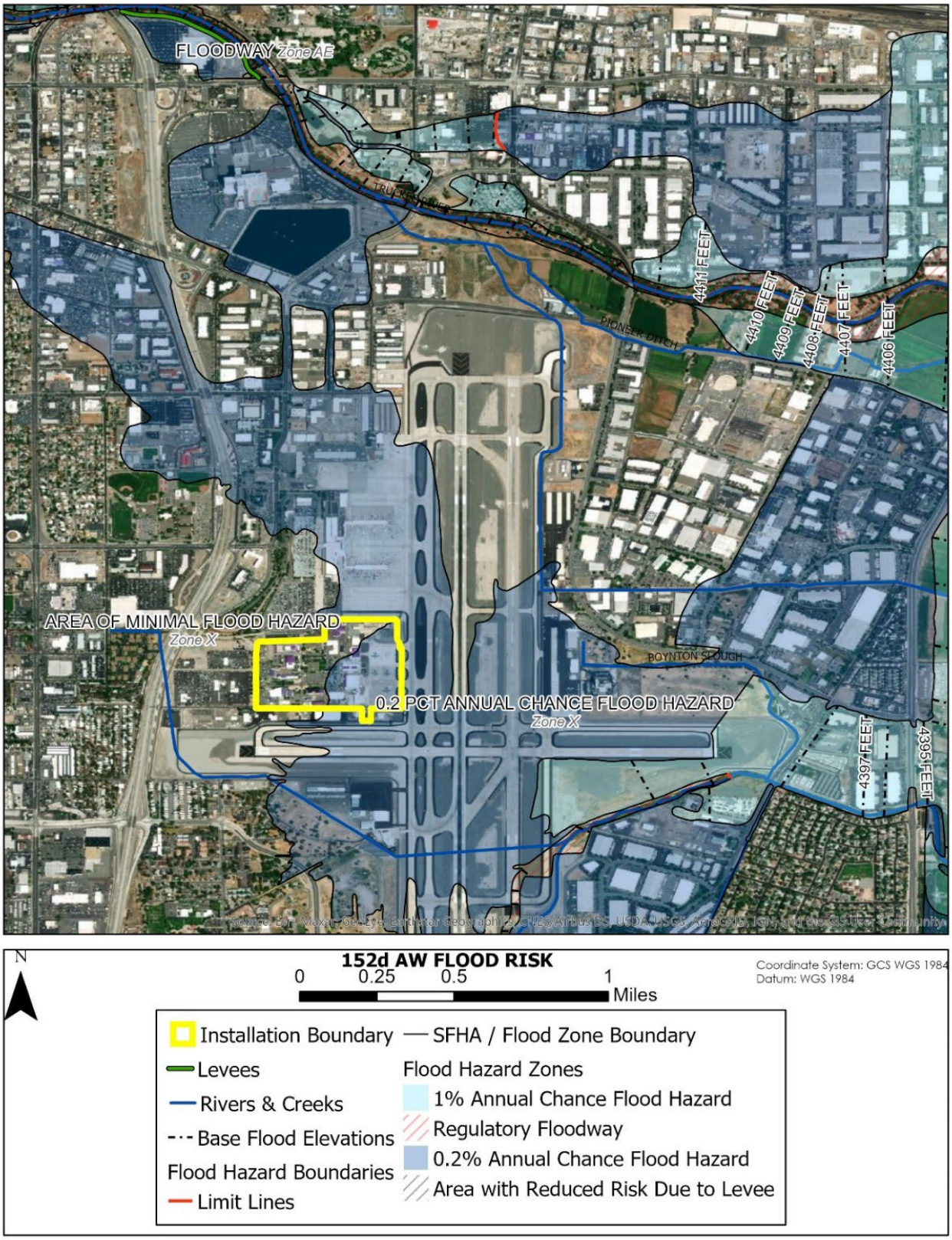

Figure 3-10: Floodplain Map for 152 AW at Reno/Tahoe IAP, NV.

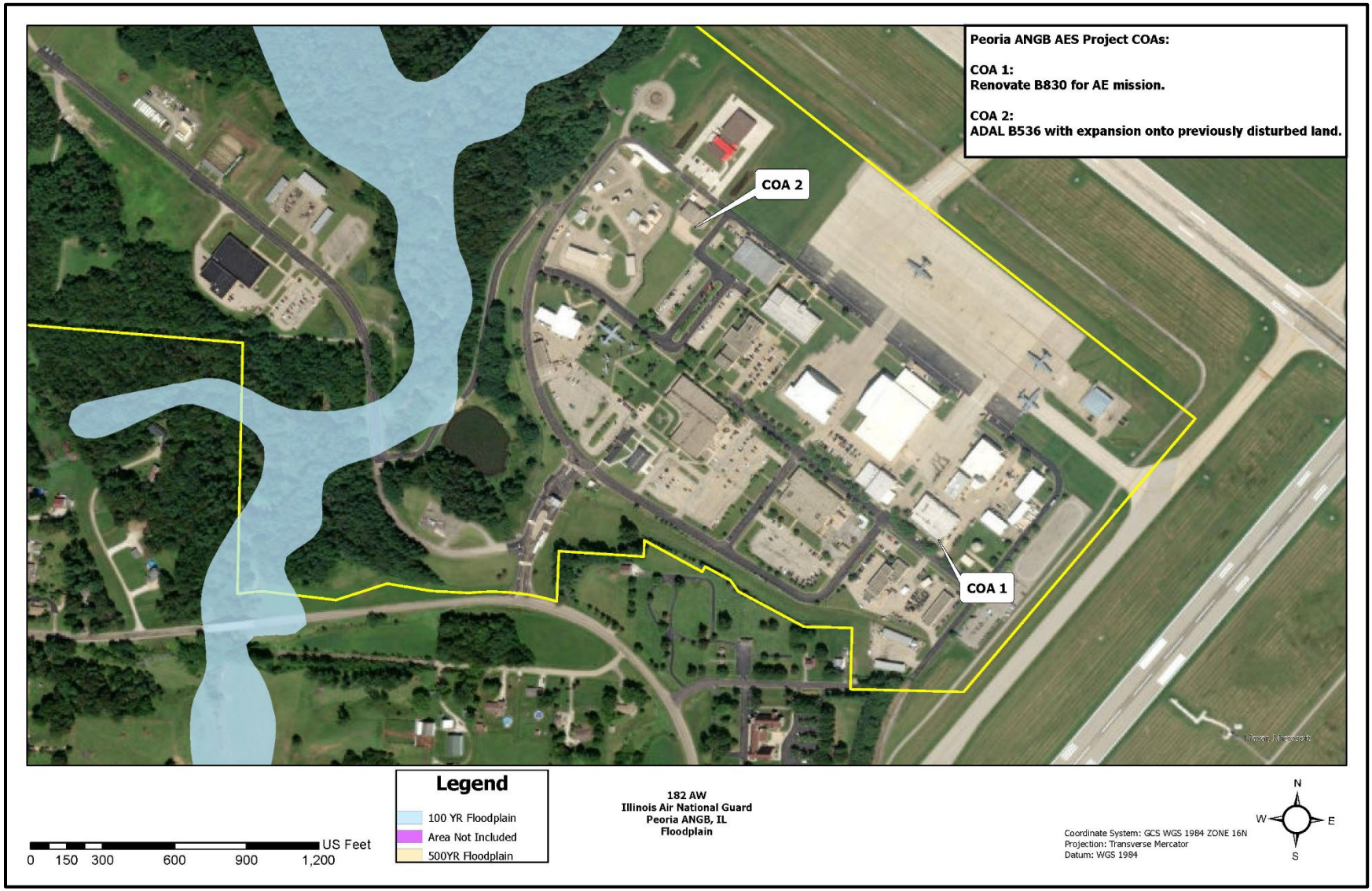

Figure 3-11: Floodplain Map for 182 AW at Peoria ANGB, IL.

3.6.2.4 Climate Vulnerability

Trends in temperature and precipitation related changes are discussed in the Fourth National Climate Assessment (USGCRP, 2018). A summary of these changes in climate are summarized in *Table 3-4* and are presented here to show the potential implications for the Proposed Action's potential environmental impacts.

Table 3-4: Climate Trends.

Installation	Climate Trends
105 AW	For the Northeast, including New York, the general trend includes increasing temperatures and increasing precipitation. Increasing temperature is anticipated to result in more frequent extreme heat events. An increase in moderate flooding events is also anticipated.
120 AW	For the Northern Great Plains, including Montana, the general trend includes increasing temperatures and steady precipitation. Variability in extreme warm/cold temperature and wet/dry years is expected to increase.
136 AW	For the Southern Great Plains, including Texas, the general trend includes increasing temperatures and steady precipitation. Variability in extreme warm/cold temperature and wet/dry years is expected to increase.
139 AW 182 AW	For the Midwest, including Missouri, the general trend for this region includes increasing temperatures and increasing precipitation. Increasing temperature is anticipated to result in more frequent extreme heat events. An increase in extreme precipitation events causing localized flooding has begun to occur and is expected to continue into the future.
152 AW	For the Southwest, including Nevada, the general trend includes increasing temperatures and steady precipitation. Variability in extreme warm/cold temperature and wet/dry years is expected to increase. An increased probability of droughts lasting more than a decade is expected. Precipitation in the form of rain is anticipated to increase, reducing snowpack in the mountains. The increased temperatures and climate variability are anticipated to result in overall drier conditions.

3.6.3 Evaluation Criteria

Criteria for determining the significance of impacts to water resources are based on water availability, quality, and use; existence of floodplains and wetlands; acreage, separately and cumulatively; and associated regulations. An impact to water resources would be significant if it:

1. Reduced water availability to or interfered with the supply of existing users;
2. Created or contributed to overdraft of GW basins or exceeded safe annual yield of water supply sources;
3. Degraded water quality or endangered public health by creating or worsening health hazards or safety conditions; or

4. Threatened or damaged unique hydrologic characteristics.

Determination of the significance of wetland impacts is based on:

1. The function and value of the wetland;
2. The proportion of the wetland that would be affected relative to the occurrence of similar wetlands in the region;
3. The sensitivity of the wetland to proposed activities; and
4. The duration of ecological ramifications. Impacts to wetland resources are considered significant if high value wetlands would be degraded.

3.6.4 Environmental Impacts

3.6.4.1 Surface Water, Wetlands, and Groundwater

For the P&RAs, no work in or near surface water or wetland would occur. The COA 2 project at the 182 AW would require an additional 780 SF of new impervious surface. The conversion of permeable land to impermeable land would result in an insignificant impact to surface water runoff and would not appreciably impact area wetlands or waters (NGB, 2013). Similarly, the impact to GW recharge would be insignificant. The remaining P&RAs would not have significant impacts based on any of the above evaluation criteria. BMPs, including erosion and sediment control measures will be implemented during all phases of construction, including clearing and grading operations to prevent sediment from entering into nearby water resources. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant impacts to surface water, wetlands, or groundwater.

Under the No Action Alternative, no AES activities would occur at any of the bases. Surface waters and wetlands at all bases would remain unchanged, and the No Action Alternative would have no significant impacts to these resources.

3.6.4.2 Floodplains

For the P&RAs, only the 139 AW is located within the 100-year floodplain. However, all work will occur within existing facilities or within the footprint of existing facilities. The existing building is located behind a levee but is still located within the floodplain. The activities at the 139 AW would have less than significant impact to the floodplain. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant floodplain impacts.

3.6.4.3 Climate Vulnerability

For the P&RAs, the effects of future climate change trends were assessed to gauge the environmental impacts. Specifically, flood risk, extreme temperature events, and drought conditions were assessed (*Table 3-5*). The 105 AW, 136 AW, 139 AW, and 182 AW were identified as having enhanced flood risk due to a projected increase in extreme precipitation events. Extreme temperature events could increase for all installations. Extreme temperature events could include increased variability resulting in

both extreme heat and cold events. These events can stress infrastructure and impact heating/cooling needs (USGCRP, 2018). The 105 AW, 120 AW, 136 AW and 152 AW were all identified as being susceptible to increased variability in precipitation events leading to more drought conditions.

Table 3-5: Temperature and Precipitation Trends (USGCRP, 2018).

Installation	Surface Water and Wetland Impacts	Groundwater Impacts	Floodplain Impacts	Climate Vulnerability		
				Flood Risk	Extreme Temperature Events	Drought
105 AW at Stewart ANGB, NY	No impacts to surface water or wetlands	No impacts to GW	Construction activities not located within floodplain	Increased risk due to climate change	Increased risk due to climate change	Increased wet/dry year variability due to climate change
120 AW at Great Falls ANGB, MT	No impacts to surface water or wetlands	No impacts to GW	Construction activities not located within floodplain	No change	Increased risk due to climate change	Increased wet/dry year variability due to climate change
136 AW at NAS JRB Fort Worth, TX	No impacts to surface water or wetlands	No impacts to GW	Construction activities not located within floodplain	Increased risk due to climate change	Increased risk due to climate change	Increased wet/dry year variability due to climate change
139 AW at Rosecrans ANGB, MO	No impacts to surface water or wetlands	No impacts to GW	Construction activities are located within floodplain	Increased risk due to climate change	Increased risk due to climate change	No change
152 AW at Reno/ Tahoe IAP, NV	No impacts to surface water or wetlands	No impacts to GW	Construction activities not located within floodplain	No change	Increased risk due to climate change	Increased wet/dry year variability due to climate change
182 AW at Peoria ANGB, IL	No impacts to surface water or wetlands	780 SF increase in impervious surface	Construction activities not located within floodplain	Increased risk due to climate change	Increased risk due to climate change	No change

3.7 TRANSPORTATION AND CIRCULATION

3.7.1 Definition of Resource

Transportation and circulation refer to the movement of vehicles throughout a roadway network. Primary roads, such as major interstates, are principal arterials designed to move traffic and not necessarily to provide access to all adjacent areas. Secondary roads are feeder arterials that collect traffic from common areas and transfer it to primary roads.

3.7.2 Existing Conditions

The transportation systems for each of the bases are similar and therefore are discussed jointly. Transportation and circulation systems for all RR&As are typical of military installations and consist of secondary roads for access to facilities throughout the base. All P&RAs involve renovations or demolition and reconstruction of existing facilities located internal to the respective installations.

3.7.3 Evaluation Criteria

Impacts to transportation and circulation are assessed with respect to the potential for disruption or improvement of current transportation patterns and systems; deterioration or improvement of existing levels of service; and changes in existing levels of transportation safety. Impacts may arise from physical changes to circulation (e.g., closing, rerouting, or creating roads), construction activity, introduction of construction-related traffic on local roads, or changes in daily or peak-hour traffic volumes created by either direct or indirect workforce and population changes related to installation activities. Impacts on roadway capacities would be significant if roads with no history of capacity exceedances were forced to operate at or above their design capacity. Impacts would also be significant if additional traffic was added to roads already having significant traffic issues.

3.7.4 Environmental Impacts

For all P&RAs, there would be no changes to the existing transportation patterns, levels of surface, or safety. The COAs all involve renovation of existing facilities or new construction with little or no change in the footprint of the buildings. The anticipated addition of up to 120 personnel would not be sufficient to result in impacts to the transportation system internal to, or in the vicinity of, the base at any of the P&RAs. All installations would experience temporary construction-related traffic from the projects. Localized impacts would be minor due to the volume of traffic involved. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant impacts to transportation or circulation.

Under the No Action Alternative, no AES activities would occur at any of the bases. Transportation patterns at all bases would remain unchanged, and the No Action Alternative would have no impacts.

3.8 AIR QUALITY

The Clean Air Act (CAA) (42 USC 7401–7671q, as amended) provided the authority for the USEPA to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the National Ambient Air Quality Standards (NAAQS), were developed for six criteria pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM), and lead (Pb). The CAA also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. Under the CAA Amendments of 1990, federal agencies are required to determine whether their activities are in conformance with the applicable SIP. In addition, they must demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. The USEPA's General Conformity Rule, 40 CFR Part 93 Subpart B, requires proponents in maintenance and nonattainment areas to perform an analysis to determine if its proposed action would conform to the SIP. Under the General Conformity Rule, the action is exempt if the total direct and indirect emissions from the Proposed Action are below the *de minimis* levels.

3.8.1 Definition of Resource

Air quality in a given location is described in terms of concentrations of various substances in the atmosphere known as "criteria pollutants," expressed in units of parts per million (ppm), milligrams per cubic meter (mg/m^3), or micrograms per cubic meter ($\mu g/m^3$). Air quality is influenced by the type and amount of pollutants in the atmosphere, the size and underlying topography of the air basin, and local and regional meteorological conditions. The significance of a pollutant concentration is determined by comparison with federal air quality standards. The USEPA has established the NAAQS (*Table 3-6*).

NAAQS are divided into two sets: primary and secondary. Primary standards are based entirely on public health considerations. Secondary standards protect public welfare, addressing damage to soils, water, crops, vegetation, man-made materials, domestic animals, wildlife, weather, visibility, climate, property, transportation, and human health and comfort. NAAQS include maximum concentration levels for six criteria pollutants: O_3, CO, NO_2, SO_2, PM less than 10 microns in diameter (PM10), and Pb. The standard was developed for PM10 after it was established that only particles of less than 10 microns in diameter are capable of entering small passages in lungs. There is also a standard for PM2.5 (PM less than 2.5 microns in diameter).

Table 3-6: National Ambient Air Quality Standards (NAAQS).

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		Primary	8 hrs	9 ppm	Not to be exceeded more than once per year.
			1 hour	35 ppm	
Lead (Pb)		Primary and Secondary	Rolling 3 month average	0.15 $\mu g/m^3$ (1)	Not to be exceeded.
Nitrogen Dioxide (NO_2)		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
		Primary and Secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		Primary and Secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
Particle Pollution (Particulate Matter, PM)	PM2.5	Primary	1 year	12.0 $\mu g/m^3$	Annual mean, averaged over 3 years.
		Secondary	1 year	15 $\mu g/m^3$	Annual mean, averaged over 3 years.
		Primary and Secondary	24 hours	35 $\mu g/m^3$	98th percentile, averaged over 3 years.
	PM10	Primary and Secondary	24 hours	150 $\mu g/m^3$	Not to be exceeded more than once per year on average over 3 years.
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb (4)	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 - Clean Air Act, Title 42 USC Section 7401-7671, USEPA Website, March 2023

(1) In areas designated nonattainment for the Pb 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 $\mu g/m^3$ as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 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) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO_2 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 SO_2 standards or is not meeting the requirements of a State Implementation Plan (SIP) call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an USEPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.

Hazardous Air Pollutants (HAPs), also known as toxic air pollutants or air toxics, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. HAPs generally do not have an established ambient air quality standards. The CAA establishes 188 substances as HAPs (including asbestos, benzene, toluene, lead, and mercury). HAPs are emitted from industrial operations and vehicles. A “major” source of HAPs is defined as a stationary facility or source that directly emits or the potential to emit 10 tons per year or more of any HAP or 25 tons or more per year of combined HAPs.

3.8.2 Existing Conditions

105 AW is in Orange County, NY. Orange County has been designated by USEPA as in attainment with current ambient air quality standards for criteria pollutants except for ozone and PM2.5. Orange County was in non-attainment for ozone in 1997, but subsequently it reached attainment status in 2008 and 2015. Due to the past non-attainment, general conformity requirements and threshold apply, and Orange County is an “orphan area” for ozone. Orange County is in maintenance status for PM2.5. In 2021, of the 272 days with a reported Air Quality Index (AQI), the Orange County area had a total of 236 days with good air quality. In contrast, there was 1 day with air quality designated as unhealthy or unhealthy for sensitive populations, and 36 days of moderate air quality (USEPA, 2021b).

120 AW, located in Cascade County, MT, is in an attainment area with current ambient air quality standards for criteria pollutants. However, Cascade County is in maintenance status for CO. In 2021, of the 181 days with a reported AQI, the Cascade County area had a total of 175 days with good air quality. In contrast, there were 6 days of moderate air quality (USEPA, 2021b).

The 136 AW (Preferred Alternative) is in Tarrant County, Texas which is part of the Dallas-Fort Worth area. The Dallas-Fort Worth area is in Severe non-attainment for the 2008 8-hour ozone standard and Moderate non-attainment for the 2015 8-hour ozone standard (USEPA, 2023). In 2021, of the 244 days with a reported AQI, the Tarrant County area had a total of 151 days with good air quality. In contrast, there were 9 days with air quality designated as unhealthy or unhealthy for sensitive populations, 1 day with air quality as very unhealthy, and 83 days of moderate air quality (USEPA, 2021b).

139 AW, located in Buchanan County, MO, is in an attainment area for air quality (USEPA 2023). In 2021, of the 273 days with a reported AQI, the Buchanan County area had a total of 211 days with good air quality. In contrast, there were 2 days with air quality designated as unhealthy or unhealthy for sensitive populations, and 60 days of moderate air quality (USEPA, 2021b).

152 AW, located in Washoe County, NV, is in an area designated by USEPA as in attainment with current ambient air quality standards for criteria pollutants except for ozone, PM10, and CO. Washoe County was in non-attainment for ozone in 1997, but subsequently reached attainment status in 2004. Due to the past non-attainment designation, general conformity requirements and threshold apply. Washoe County is in maintenance status for PM10 and CO. In 2021, of the 253 days with a reported AQI, the Washoe County area had a total of 131 days with good air quality. In contrast, there were 28 days with air quality designated as unhealthy or unhealthy for sensitive populations, 3 days with air quality as very unhealthy, and 91 days of moderate air quality (USEPA, 2021b).

182 AW, located in Peoria County, IL, is in an attainment area for air quality (USEPA 2021a). In 2021, of the 300 days with a reported AQI, the Peoria County area had a total of 217 days with good air quality. In contrast, there was 1 day with air quality

designated as unhealthy or unhealthy for sensitive populations, and 82 days of moderate air quality (USEPA, 2021b).

3.8.3 Evaluation Criteria

The 1990 amendments to the CAA require that federal agency activities conform to the affected SIP with respect to achieving and maintaining attainment of NAAQS and addressing air quality impacts. An air quality impact resulting from the Proposed Action and facilities development programs would be significant if it would: 1) increase concentrations of ambient criteria pollutants or ozone precursors to levels exceeding NAAQS; 2) increase concentrations of pollutants already at nonattainment levels; 3) lead to establishment of a new nonattainment area by the Governor of the state or the USEPA; or 4) delay achievement of attainment in accordance with the SIP.

40 CFR 93.153 defines *de minimis* levels, that is, the minimum threshold for which a conformity determination must be performed, for various criteria pollutants in various areas. These criteria are applicable to bases in non-attainment or maintenance areas. For this analysis, the bases in Reno, Fort Worth, Great Falls, and Stewart are in non-attainment or maintenance areas for one or more criteria pollutant. The remaining bases (Peoria and Rosecrans) are in attainment areas. For attainment areas, insignificance indicators were used in the analysis to provide an indication of the insignificance of potential impacts to air quality. The insignificance indicators are the 250 ton/year 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/year for lead and 100 ton/year 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. Actions with net emissions below the insignificance indicators for all criteria pollutant can be considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. *Table 3-8* summarizes the *de minimis* levels and insignificance indicators used for the analysis; conservatively the lowest significance level is shown for bases that are within more than one regulatory area.

Table 3-7: Insignificant Indicators for Areas of Attainment.

Installation	Pollutant, Ton/Year						
	VOC	NOx	CO	SOx	PM 10	PM 2.5	Pb
139 AW	100	100	250	250	250	250	25
182 AW	100	100	250	250	250	250	25

Table 3-8: General Conformity De Minimis Levels for Areas in Nonattainment/Maintenance.

Installation	Pollutant, Ton/Year						
	VOC	NOx	CO	SOx	PM 10	PM 2.5	Pb
105 AW	50	100	100	100	100	100	25
120 AW	100	100	100	100	100	100	25
136 AW	50	50	100	100	100	100	25
152 AW	100	100	100	100	100	100	25

3.8.4 Environmental Impacts

Pollutant emissions associated with the P&RAs would potentially include fugitive dust emissions during ground disturbance and related site preparation activities and combustion emissions from vehicles and heavy-duty equipment used during construction activities. Emissions were estimated using the Air Conformity Applicability Model (ACAM) and were compared to regulatory thresholds to determine if a conformity determination is required or if the emissions are significant. The ACAM analyses for individual projects making up the Proposed Action are documented in Appendix C. A Record of Conformity Analysis is included for Reno, Fort Worth, Great Falls, and Stewart; these bases are in non-attainment or maintenance areas for one or more criteria pollutant. A Record of Air Analysis is included for Peoria, and Rosecrans; these bases are in attainment areas. Calculated VOC, nitrogen oxides (NOx), PM2.5, SOx, CO, PM10, and carbon dioxide equivalent (CO_2e) emissions are summarized in *Table 3-9*. The totals given represent the sum of the annual emissions during the time that the Proposed Action would be implemented. CO_2e is the number of metric tons of carbon dioxide (CO_2) emissions with the same global warming potential as one metric ton of another greenhouse gas (GHG). GHG emissions are compared to USEPA's source permitting applicability threshold of 75,000 CO_2e tons per year for the purpose of NEPA assessments for air quality. Because each base has a unique plan, the timeframe and duration of the action varies.

Table 3-9: Total ACAM Estimated Emissions for Bases.

Installation	VOC Tons	NOx Tons	CO Tons	SOx Tons	PM 10 Tons	PM 2.5 Tons	Pb Tons	CO_2e Tons
105 AW	0.236	0.433	0.716	0.002	0.014	0.014	0.000	174.1
120 AW	0.009	0.050	0.061	0.000	0.003	0.003	0.000	9.8
136 AW	0.696	1.138	2.355	0.004	0.202	0.039	0.000	429.4
139 AW	0.237	0.291	0.313	0.001	0.019	0.014	0.000	87.9
152 AW	0.519	0.212	2.620	0.001	0.006	0.005	0.000	250.9
182 AW	0.468	0.434	0.585	0.001	0.023	0.014	0.000	44.5

The emissions for each base, including all proposed actions over the period of implementation, are shown to be significantly less than the de minimis and

insignificance levels. From an air resource perspective, none of the proposed alternatives would have a significant impact on air quality if implemented. Because estimated emissions for P&RAs do not exceed significance criteria, no further analysis, including conformity determination for Reno, Fort Worth, Great Falls, and Stewart, is required.

All bases currently operate under an Air Quality Management Plan or similar plan; it is assumed that this plan would be updated as needed to address the Proposed Action or alternative plan. For all bases, BMPs and generally available control technologies would still be required for implementation of the plan to further minimize any potential emissions of pollutants and HAPs. To minimize not only erosion but also dust generation, construction contractors must limit the amount of unstabilized land at any time. To minimize temporary impacts to air quality during construction activities, the following would be required:

- All equipment is to be current with functional emissions controls;
- All equipment will use low sulfur diesel fuels; and
- Dust control measures will be used during dry weather, including but not limited to the use of covered loads, street sweeping and tire brushes to avoid tracking soils onto public roads, and watering/sprinkling unstabilized earthwork areas to minimize windblown dust.

Regarding combustion emissions from vehicles, the following language from AFI 24-302 pertains:

- 10.12.1. Installations will adhere to state, local or host nation air quality regulations which govern vehicle operations while the government vehicle is idling. (T-0); and
- 10.12.2. In areas without such regulations, a “5 minute” idling policy will be in effect per AF/A4 (Logistics, Engineering and Force Protection) guidance. (T-1).

Regarding long-term impacts, the AES mission would not include the addition of aircraft or an increase in operations. Because the basic functions of the base and the major sources of emissions remain primarily the same, there are no new impacts to air quality identified. All new or upgraded HVAC systems would comply with current CAA requirements (Section 608) regarding refrigerants, and it is expected that new equipment will be more efficient and have fewer emissions than equipment being replaced.

In addition to criteria pollutants, the Proposed Action would also temporarily generate GHG emissions as a result of fossil fuel combustion related to construction and contractor vehicles during construction. The Proposed Action would generate GHG emissions for transportation of up to 120 additional personnel reporting on base in the long-term. The Proposed Action does not appreciably change GHG emissions at the base since there are no new significant sources of emissions. While implementing the Proposed Action would cause a small, temporary increase in greenhouse gas emissions

during construction, and changes in GHG emissions internal to, or in the vicinity of, the base to support transportation of up to 120 additional personnel, the increase will not appreciably accelerate the effects of climate change. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant impacts to air quality.

Under the No Action Alternative, no AES activities would occur at any of the bases. Emissions at all bases would remain unchanged, and the No Action Alternative would have no impacts to air quality.

3.9 Geological Resources

3.9.1 Definition of Resource

Geological resources consist of surface and subsurface materials and their properties. Principal geologic factors influencing the ability to support structural development are seismic properties (i.e., potential for subsurface shifting, faulting, or crustal disturbance), soil stability, and topography.

Topography is the change in elevation over the surface of a land area. An area's topography is influenced by many factors, including human activity, underlying geologic material, seismic activity, climatic conditions, and erosion. A discussion of topography typically encompasses a description of surface elevations, slope, and distinct physiographic features (e.g., mountains) and their influence on human activities.

The term soil, in general, refers to unconsolidated materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the ability for the ground to support man-made structures. Soils typically are described in terms of their complex type, slope, physical characteristics, and relative compatibility or constraining properties regarding particular construction activities and types of land use.

The Farmland Protection Policy Act of 1981 (7 USC 4201) requires federal agencies to identify adverse impacts to prime and/or unique farmlands within a project action area.

3.9.2 Existing Conditions

For all P&RAs, topography is nearly level. There are no unique geological resources at any P&RAs. No major topographic obstructions or restrictions occur at any of the installations. All work would occur within the developed portions of the existing facilities at all R&RAs.

3.9.3 Evaluation Criteria

An impact to geological resources would be considered significant if the proposed action would violate a federal, state, or local law or regulation protecting geological resources (e.g., impacted unique landforms or rock formations), or result in uncontrolled erosion over a larger area than that allowed by regulations.

3.9.4 Environmental Impacts

Construction activities due to the Proposed Action would include soil disturbance either through demolition or ground clearing for preparation of construction. Impacts to soil would be short-term and temporary lasting only the duration of construction activities. In addition, BMPs such as erosion controls and prompt stabilization of open earthwork areas to minimize erosion would be implemented to minimize temporary impacts. No long-term impacts to soils are expected since all work will occur within developed portions of the installations. COA 2 at the 182 AW located at Peoria ANGB would involve ADAL of B536 with expansion onto previously disturbed land and turf grass. This expansion will result in approximately 780 SF of new impervious surface onto soils that were likely historically disturbed for the original site development. In addition, no P&RAs result in any impacts to unique landforms or rock formations, nor do they include any impacts to farmland. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant impacts to geological resources.

Under the No Action Alternative, no AES activities would occur at any of the bases. Soils at all bases would remain unchanged, and the No Action Alternative would have no impacts to geological resources.

3.10 Biological Resources

3.10.1 Definition of Resource

Biological resources include native or naturalized plants and animals and the habitats in which they occur. Sensitive biological resources are defined as those plant and animal species listed as threatened or endangered, or proposed as such by the USFWS.

The ESA (16 USC 1531–1544, as amended) established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species. The ESA protects listed species against killing, harming, or harassing. Federal candidate species and species proposed for listing are not protected by law; however, these species could become listed and protected at any time.

An “endangered” species is a plant or animal species that is in danger of extinction throughout all or a significant portion of its range. A “threatened” species is one that is likely to become endangered in the foreseeable future. A strict legal process is involved in determining whether to list species, depending on the degree of threat each faces. As mandated by the ESA, the USFWS is the regulatory authority overseeing the protection of federally listed threatened and endangered species. Individual states also enforce their own legislation protecting state-listed species.

Federal agencies must evaluate the effects of their Proposed Actions through a set of defined procedures, which can include the preparation of a Biological Assessment and can require formal consultation with the USFWS under Section 7 of the ESA.

Vegetation includes native or naturalized plants and the plant communities (e.g., wetlands, forests, and grasslands) in which they exist. In human-dominated environments, this may include agricultural or landscaped areas.

3.10.2 Existing Conditions

3.10.2.1 Vegetation and Forestry

The lands comprising the areas to be affected by the P&RAs have terrestrial cover types consisting entirely of developed/urban land. Except for the 182 AW, the COAs consist of renovation of building interiors or demolition of existing facilities and construction of new buildings within the existing building footprint. The expansion of B536 at the 182 AW would result in approximately 780 SF of new impervious surface. The new impervious surface would replace an area of maintained turf grass.

3.10.2.2 Wildlife

Wildlife includes those animal species known, or suspected, to be present for at least part of their lives. The P&RAs each have Bird/Wildlife Aircraft Strike Hazard (BASH) Plans that list birds and wildlife observed or potentially present on the base.

3.10.2.3 Special Status Species

3.10.2.3.1 Federal

The USFWS Information, Planning and Conservation (IPaC) system was used to identify threatened, endangered, proposed, and candidate species and critical habitat for those species that could be affected by the Proposed Action. The species list was obtained November 8, 2021, and fulfills the requirement for obtaining a Technical Assistance Letter from the USFWS as required under Section 7(c) of the ESA. The species list was updated on April 5, 2024. A copy of the USFWS IPaC correspondence is included in Appendix B. *Table 3-10* summarizes the federally listed species with the potential of occurring within the project areas for the P&RAs. In addition, the little brown bat (*Myotis lucifugus*) and North American Hoary bat (*Lasiurus cinereus cinereus*) are under discretionary status review by the USFWS (USFWS, 2023). The review may result in a proposed listing, candidacy for listing, notice of a not warranted candidate assessment, or other action as appropriate.

Table 3-10: Federally listed Species with the Potential of Occurring within the Project Areas.

Name	Federal Status	Habitat	Installation	Potential to Occur	Determination
alligator snapping turtle (*Macrochelys temminckii*)	Proposed threatened	Deeper water of large rivers and their tributaries but may also occupy stream, ponds, lakes, reservoirs, or oxbows with sufficient structure or cover.	136 AW	Suitable habitat not found within project area.	136 AW: No effect.
Carson wandering skipper (*Pseudocopaeodes eunus obscurus*)	Endangered	Lays eggs on salt grass in grassland habitats on alkaline substrates.	152 AW	Suitable habitat not found within project area.	152 AW: No effect.
cui-ui (*Chasmistes cujus*)	Endangered	Endemic to Pyramid Lake in Nevada.	152 AW	Suitable habitat not found within project area.	152 AW: No effect.
decurrent false aster (*Boltonia decurrens*)	Threatened	Moist, sandy floodplains and prairie wetlands along the Illinois River.	182 AW	Suitable habitat not found within project area.	182 AW: No effect.
eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie with full sun and little or no woody encroachment.	182 AW	Suitable habitat not found within project area.	182 AW: No effect.
Indiana bat (*Myotis sodalis*)	Endangered	Hibernates in caves and mines – swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods during the summer.	105 AW 139 AW 182 AW	105 AW: Previously known to occur on site; presence not detected during bat survey (ANG, 2020b); not observed during the flora and fauna survey (ANG, 2021b); no known hibernacula; potential to occur during summer; no suitable habitat in project areas; no tree clearing proposed. 139 AW: Suitable habitat not found within project area; no tree clearing proposed. Presence not detected during acoustic bat survey (ANG, 2023). 182 AW: Call detected during 2010 acoustic bat survey (ANG, 2011); not found during 2016 survey (ANG, 2017). Suitable habitat not found within project area and no tree clearing proposed.	105 AW: No effect. 139 AW: No effect. 182 AW: No effect.
Lahontan cutthroat trout (*Oncorhynchus clarkia henshawi*)	Threatened	Clear, cold-water streams with silt-free substrate and a 1:1 pool-riffle ratio.	152 AW	Suitable habitat not found within project area.	152 AW: No effect.
monarch butterfly (*Danaus plexippus*)	Candidate	Fields, prairies, and wetlands where milkweed species are present.	All	Suitable habitat not found within project area.	All: No effect.
northern long-eared bat (*Myotis septentrionalis*)	Endangered	Hibernates in caves and mines – swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods during the summer.	105 AW 139 AW 182 AW	105 AW: Presence detected during bat survey in eastern woodland, but manual vetting of the results did not confirm presence (ANG, 2020b); not observed during the flora and fauna survey (ANG, 2021b); no known maternity roost near project areas; no suitable habitat in project areas; no tree clearing proposed. 139 AW: Suitable habitat not found within project area; no tree clearing proposed. Presence not detected during acoustic bat survey (ANG, 2023). 182 AW: Detected during 2010 and 2016 bat surveys (ANG, 2011 and 2017) in forested area of 182 AW. Suitable habitat not found within project area and no tree clearing proposed.	105 AW: No effect. 139 AW: No effect. 182 AW: No effect.

Name	Federal Status	Habitat	Installation	Potential to Occur	Determination
northwestern pond turtle (*Actinemys marmorata*)	Proposed threatened	Aquatic and terrestrial habitats in close proximity including watercourses, lakes, ponds, reservoirs, settling ponds, marshes, vernal pools, ditches, wetlands, or estuaries	152 AW	Suitable habitat not found within project area.	152 AW: No effect.
tricolored bat (*Perimyotis subflavus*)	Proposed endangered	Hibernates in caves and mines during winter. Roosts and forages in deciduous forests during the summer.	136 AW 139 AW 182 AW	136 AW: Suitable habitat not found within project area. 139 AW: Suitable habitat not found within project area. Presence not detected during acoustic bat survey (ANG, 2023). 182 AW: Suitable habitat not found within project area. Presence not detected during bat surveys in 2010 and 2016 (ANG, 2011 and 2017).	136 AW: No effect. 139 AW: No effect. 182 AW: No effect.
piping plover (*Charadrius melodus*)	Threatened	Coastal areas and large wetland complexes during migratory window of May 1-September 30	136 AW 182 AW	Suitable habitat not found within project area.	136 AW: No effect. 182 AW: No effect.
red knot (*Calidris canutus rufa*)	Threatened	Coastal areas and large wetland complexes during migratory window of May 1-September 30	136 AW 182 AW	Suitable habitat not found within project area.	136 AW: No effect. 182 AW: No effect.
rusty patched bumble bee (*Bombus affinis*)	Endangered	Grasslands with flowering plants from April – October, underground rodent cavities or clumps of grasses above ground as nesting sites and undisturbed soil for hibernating queens to overwinter	182 AW	182 AW: Suitable habitat not found within project area. Presence not detected during flora and fauna survey in 2019 (ANG, 2020c).	182 AW: No effect.
small whorled pogonia (*Isotria medeoloides*)	Threatened	Older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory.	105 AW	Suitable habitat not found within project area.	105 AW: No effect.
Steamboat buckwheat (*Erigonoum ovalifolium var. williamsiae*)	Endangered	Endemic to substrates derived from hot springs deposits in the Steamboat Hills.	152 AW	Suitable habitat not found within project area.	152 AW: No effect.
Webber's ivesia (*Ivesia webberi*)	Threatened	Sparse vegetation and shallow, rocky, clay soils on mid-elevation flats, benches, or terraces between 4,500 and 6,200 feet elevation.	152 AW	Suitable habitat not found within project area.	152 AW: No effect.

Name	Federal Status	Habitat	Installation	Potential to Occur	Determination
whooping crane (*Grus americana*)	Endangered	Coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet meadows and rivers, and pastures and agricultural fields.	136 AW	Suitable habitat not found within project area.	136 AW: No effect.
bald eagle (*Haliaeetus leucocephalus*)	Delisted but protected	Mature strands of trees, near wetlands, rivers, lakes, marshes, or coastal areas.	All	Not expected to occur; lack of suitable habitat within project areas.	All: No effect.

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3.10.2.3.2State

As stated in Section 3.10.2.1 Vegetation and Forestry, with the exception of the 182 AW which includes 780 SF expansion into turf and pavement areas, all of the other Proposed Actions would be limited to interior renovation of existing facilities and would therefore only have the potential to impact state-listed bat species which could potentially be roosting in the buildings that would be renovated. Therefore, except for the 182 AW, only state-listed bat species likely to be present at each location are included in the analysis below.

3.10.2.3.2.1 105 AW at Stewart ANGB, NY

The 2021 flora and fauna survey report (ANG, 2021b) indicates that the species of special concern, eastern small-footed bat (*Myotis leibii*), has suitable habitat at the 105 AW and may be present However, none were identified during the fauna survey, though these survey efforts were conducted at a reconnaissance level and USFWS protocols for bat surveys were not used. No eastern small-footed bats were identified during the 2020 bat survey (ANG, 2020b).

3.10.2.3.2.2 120 AW at Great Falls ANGB, MT

During the 2020 bat survey at Great Falls, four Montana state-listed bat species were identified at the site (ANG, 2021c):

- Eastern red bat (*Lasiurus borealis*),
- Hoary bat (*Lasiurus cinereus*),
- Little brown bat (*Myotis lucifugus*), and
- Silver-haired bat (*Lasionycteris noctivagans*).

3.10.2.3.2.3 136 AW at NAS JRB Fort Worth, TX

There are no available surveys or reports on fauna at the 136 AW, so the Texas Parks & Wildlife Department (TPWD) web database was queried to identify state-listed bat species known to be present in Tarrant County, Texas. The web database indicates that the following bat species may be present: big brown bat (*Eptescicus fuscus*), big free-tailed bat (*Nyctinomops macrotis*), cave myotis bat (*Myotis velifer*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), and the tricolored bat (*Perimyotis subflavus*) (TPWD, 2021).

3.10.2.3.2.4 139 AW at Rosecrans ANGB, MO

The 2019 EA for Rosecrans indicated that the state-listed little brown bat (*Myotis lucifungus*) and tricolored bat (*Perimyotis subflavus*) are thought to exist within the county, although these species have not been identified in wildlife surveys and there is little potential habitat at the 139 AW (ANG, 2020a). No state listed bat species were documented during a 2021 acoustic bat survey at Rosecrans ANGB (ANG, 2023).

3.10.2.3.2.5 152 AW at Reno/Tahoe IAP, NV

The 2021 EA for Reno identified potential habitat for the sensitive spotted bat (*Euderma maculatum*). However, continued follow up with the Nevada Natural Heritage Program did not reveal any further information (ANG, 2021a).

3.10.2.3.2.6 182 AW at Peoria ANGB, IL

The Integrated Natural Resources Management Plan finalized in 2018 (ANG, 2018) listed the following state special status priority species as likely to occur on the 182 AW: threatened Franklin's ground squirrel (*Poliocitellus franklinii*), endangered osprey (*Pandion haliaetus*), threatened soft-leaf arrowwood (*Viburnum mole*), and threatened spotted coral-root orchid (*Corallorhiza maxulata*). Habitat and species surveys for listed species were conducted at 182 AW at Peoria ANGB on 7-8 August 2019. No federal or state listed species were documented during the 2019 surveys (ANG, 2020c). Habitat for the rusty patched bumble bee () is present at Peoria ANGB, but it was not observed during the 2019 surveys (ANG, 2020c).

Northern long-eared bat are listed as threatened by the state of Illinois and were found during bat surveys at Peoria ANGB in 2010 and 2016 (ANG, 2011 and 2017). Acoustic surveys in 2010 also recorded a bat call which was attributed to the federally and state endangered Indiana bat (ANG, 2011). The stream corridor where this call was recorded was targeted with mist nets and acoustic recorders during both June and August surveys; however, no Indiana bats were captured or recorded (ANG, 2017).

3.10.3 Evaluation Criteria

Determination of the significance of impacts to biological resources is based on:

1. The importance (legal, commercial, recreational, ecological, or scientific) of the resource;
2. The proportion of the resource that would be affected relative to its occurrence in the region;
3. The sensitivity of the resource to proposed activities
4. The duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas, or disturbances cause reductions in population size or distribution of a species of special concern; and
5. Compliance with the ESA (16 USC 1531–1544, as amended), 50 CFR 10.13, and other laws, regulations, and EO's listed in section 3.10.1.

3.10.4 Environmental Impacts

The P&RAs would have no effect on any of the listed species (*Table 3-10*). This determination is based upon the lack of suitable habitat for any listed species within the work areas for the P&RAs and is consistent with evaluation criteria 2, 3, 4, and 5 listed above. For the federally and state listed bat species, as the Proposed Action 1) does not occur within habitat areas for the bats and 2) does not include tree clearing. Buildings that are going to be renovated or demolished will be inspected for the presence of bats in the buildings. If bats are present the installation will contract with a wildlife biologist to safely remove the bats outside of the maternity season. Therefore, the Proposed Action will have no effect on these species. The Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant impacts to biological resources. The various USFWS field offices will have a chance to review this environmental assessment during public review and may provide comments on the no effect determinations for federally

listed species, but USFWS generally does not provide concurrence on no effect determinations, so concurrence is not required to conclude coordination under Section 7 of the ESA.

Under the No Action Alternative, no AES activities would occur at any of the bases. Biological resources at all bases would remain unchanged, and the No Action Alternative would have no impacts.

3.11 Cultural Resources

3.11.1 Definition of Resource

The NHPA of 1966 (54 USC 300101 et seq.) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation which outlines procedures for the management of cultural resources on federal property. Cultural resources can include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. The NHPA requires federal agencies to consider potential effects to cultural resources that are listed or eligible for listing in the NRHP. Section 106 of NHPA requires federal agencies to consult with the appropriate State Historic Preservation Officer (SHPO) if their undertakings might affect such resources. Protection of Historic and Cultural Properties (36 CFR 800 [1986]) provides an explicit set of procedures that ensures federal agencies meet their obligations under the NHPA, which includes inventorying resources and consultation with SHPO.

EO 13007 *Indian Sacred Sites* directs each federal agency that manages federal lands to "(1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites." This EO also directs each federal agency to report to the President on "procedures implemented or proposed to facilitate with appropriate Indian tribes and religious leaders." The American Indian Religious Freedom Act (42 USC 1996) established federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001–3013) requires consultation with Native American Tribes prior to excavation or removal of human remains and certain objects of cultural importance.

In addition, DoD Instruction 4710.02 (DoD Interactions with federally recognized Tribes) assigns responsibilities and provides procedures for DoD interactions with federally recognized tribes in accordance with EO 13175 *Consultation and Coordination with Indian Tribal Governments*. This DoD Instruction requires that all DoD components shall consult with tribes whenever proposing an action that may have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands.

Cultural resources are evidence of past human occupation or use of a landscape. Archaeological sites include both pre-contact and historic uses of the land and may be identified by cultural materials such as projectile points, ceramics, scrap metal etc. Architectural resources include standing buildings, bridges, dams, windmills and other

structures of historic or aesthetic significance. Traditional cultural properties are sites that play a role in the identity or religious life of a culture.

If a cultural resource is determined eligible for listing in the NRHP, it becomes a historic property. Historic properties are afforded consideration and protection on federal property.

3.11.2 Existing Conditions

3.11.2.1 Archaeological Resources

The P&RAs consist of work in previously disturbed areas. As such, the likelihood of encountering intact archaeological resources is low. In the unlikely event of inadvertent discovery of human remains or archeological material, work would immediately cease in the vicinity of the discovery and the NGB would conduct further consultation with the respective SHPO and federally recognized tribes with a cultural or historic interest in the area to determine an appropriate course of action. A summary of findings is included in *Table 3-11*.

3.11.2.2 Architectural Resources

All buildings within the respective Areas of Potential Effect for each installation were evaluated for eligibility for listing in the NRHP. A summary of findings is included in *Table 3-11*.

3.11.2.3 Traditional Resources

NGB identified federally recognized Tribes that are that have a cultural or historical interest within both the installations themselves and the surrounding areas.

The ANG has contacted federally recognized Tribes multiple times throughout the NEPA/Section 106 process for this project. Federally recognized tribes were contacted during the scoping phase, and during the public notice phase for this EA. A full listing of federally recognized Tribes with potential interest in this action are included in *Table 3-12.*

Table 3-11: Summary of Architectural/Archeological Resources within APEs, Determinations of Effect, and date of SHPO concurrence.

Installation	Architectural Properties Eligible for or listed in the NRHP within the APE	Archeological Properties Eligible for or listed in the NRHP within the APE	NGB Determination of Effect	Date of SHPO Concurrence
105 AW at Stewart ANGB, NY	No architectural properties are within the APE, nor is the APE within a historic district.	No archeological properties are within the APE	No historic properties affected.	30 APR 2020
120 AW at Great Falls ANGB, MT	No architectural properties are within the APE, nor is the APE within a historic district.	No archeological properties are within the APE	No historic properties affected.	14 SEP 2021
136 AW at NAS JRB Fort Worth, TX	The exterior of B4175 was determined eligible for listing in the NRHP in 1994 a (Historic Facilities Inventory and Determination of Eligibility, Carswell Air Force Base, Tarrant County, Texas, 1994). The interior of B4175 was determined ineligible for listing the NRHP in 2022 in consultation with the TX SHPO. No other architectural properties are within the APE, nor is the APE within a historic district.	No archeological properties are within the APE	No adverse effects to historic properties	07 NOV 2022
139 AW at Rosecrans ANGB, MO	No architectural properties are within the APE, nor is the APE within a historic district.	No archeological resources are within the APE	No historic properties affected.	12 OCT 2021
152 AW at Reno/Tahoe IAP, NV	No architectural properties are within the APE, nor is the APE within a historic district.	No archeological resources are within the APE	No historic properties affected.	10 MAR 2023

Installation	Architectural Properties Eligible for or listed in the NRHP within the APE	Archeological Properties Eligible for or listed in the NRHP within the APE	NGB Determination of Effect	Date of SHPO Concurrence
182 AW at Peoria ANGB, IL	No architectural properties are within the APE, nor is the APE within a historic district.	No archeological resources are within the APE	No historic properties affected.	03 MAY 2024

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1 *Table 3-12: Summary of American Indian Tribes and Affiliated Installations.*

American Indian Tribe	Affiliated Installation	Scoping Phase Request for Consultation	NEPA Process Request for Consultation
Apache Tribe of Oklahoma	120 AW 136 AW 139 AW	No	
Blackfeet Indian Reservation of Montana	120 AW	No	
Chippewa Cree Indians of the Rocky Boy's Reservation, Montana	120 AW	No	
Comanche Nation, Oklahoma	136 AW	No	
Confederated Tribes of the Warm Springs Reservation of Oregon	152 AW	No	
Coushatta Tribe of Louisiana	136 AW	No	
Crow Tribe of Montana	120 AW	No	
Delaware Nation, Oklahoma	105 AW 136 AW	No	
Delaware Tribe of Indians	105 AW	No	
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	120 AW	No	
Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon	152 AW	No	
Iowa Tribe of Kansas and Nebraska	139 AW	No	
Iowa Tribe of Oklahoma	139 AW	No	
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	182 AW	No	
Kickapoo Tribe of Oklahoma	182 AW	No	
Little Shell Tribe of Chippewa Indians of Montana	120 AW	No	
Menominee Indian Tribe of Wisconsin	182 AW	No	
Miami Tribe of Oklahoma	139 AW 182 AW	No	
Omaha Tribe of Nebraska	139 AW	No	
Osage Nation	139 AW 182 AW	No	
Otoe-Missouria Tribe of Indians, Oklahoma	139 AW	No	
Paiute-Shoshone Tribe of the Fallon Reservation and Colony, Nevada	152 AW	No	
Pyramid Lake Paiute Tribe of the Pyramid Lake Reservation, Nevada	152 AW	No	
Reno-Sparks Indian Colony, Nevada	152 AW	No	
Sac & Fox Nation of Missouri in Kansas and Nebraska	139 AW	No	
Sac & Fox Nation, Oklahoma	139 AW	No	
Sac & Fox Tribe of the Mississippi in Iowa	139 AW	No	
Stockbridge Munsee Community, Wisconsin	105 AW	No	

American Indian Tribe	Affiliated Installation	Scoping Phase Request for Consultation	NEPA Process Request for Consultation
Tonkawa Tribe of Indians of Oklahoma	136 AW	No	
Walker River Paiute Tribe of the Walker River Reservation, Nevada	152 AW	No	
Washoe Tribe of Nevada and California	152 AW	No	
Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma	136 AW	No	
Yerington Paiute Tribe of the Yerington Colony & Campbell Ranch, Nevada	152 AW	No	

3.11.3 Evaluation Criteria

Determination of the significance of impacts to cultural resources relates to:

1. Direct effects are those that:
    a. Physically alter, damage, or destroy all of part of a resource.
    b. Alter the surrounding environment's characteristics that contribute to the resource.
    c. Introduce visual or audible elements that do not align with the property's characteristics; or
    d. Neglect a resource to the extent that it deteriorates or is destroyed.
2. Indirect effects result primarily from:
    a. Population increases on the installation resulting from the proposed action; and
    b. Construction activities to accommodate the population growth.

3.11.4 Determination of Effects

On November 7, 2022 the Texas SHPO concurred with the finding that the Proposed Action would have no adverse effects on historic properties as the Proposed Action will not be altering the characteristics that make that building eligible for inclusion in the NRHP.

For the other installations, no NRHP-listed or eligible properties or traditional resources were located within the APEs and the determination of effect for those installations was "no historic properties affected as no historic properties are present within the APE". See *Table 3-11*.

Under the No Action Alternative, no AES activities would occur at any of the bases. Cultural resources at all bases would remain unchanged, and the No Action Alternative would have no impacts.

In case of the inadvertent discovery of human remains or archaeological material during the Proposed Action, work would immediately cease in the vicinity of the discovery and the relevant installation would conduct further consultation with the SHPO and federally

recognized tribes to determine an appropriate course of action. Work would not resume until this additional consultation process is complete.

3.12 SOCIOECONOMICS

3.12.1 Definition of Resource

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Human population is affected by regional birth and death rates as well as net in- or out-migration. Economic activity typically comprises employment, personal income, and industrial growth. Impacts on these two fundamental socioeconomic indicators can also influence other components such as housing availability and public services provision.

3.12.2 Existing Conditions

Table 3-13 presents socioeconomic data at the county, state, and national level. Data have been collected from previously published documents issued by federal, state, and local agencies (e.g., United States. Census Bureau) and from state and national databases (e.g., United States Bureau of Labor Statistics).

3.12.3 Environmental Justice

EO 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* requires that, to the greatest extent practicable and permitted by law, each federal agency make achieving environmental justice part of its mission. Federal agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.

Ethnic minorities are: African Americans, Hispanics, Asian, Native Hawaiian and other Pacific Islanders, and American Indian and Alaskan Native. Low-income persons are people with incomes below the federal poverty level. Children are those persons aged 17 or younger. Data from the 2010 United States Census was tabulated and analyzed to determine if concentrations of ethnic minorities, low-income populations, and children exist near the project areas. The results in *Table 3-13* were compared proportionally with the same populations at the state level and the greater United States.

3.12.4 Protection of Children from Environmental Health & Safety Risks

EO 13045 *Protection of Children from Environmental Health and Safety Risks* recognizes children may suffer disproportionately from environmental health risks and safety risks. The EO prioritizes identification and assessment of environmental health and safety risks that may affect children. It also promotes federal agency policies, programs, activities, and standards to address environmental risks and safety risks to children.

Table 3-13: Existing Socioeconomic Conditions.

	Ft. Worth (136 AW)		Stewart (105 AW)		Great Falls (120 AW)		Rosecrans (139 AW)		Reno/Tahoe (152 AW)		Peoria (182 AW)		United States
	Tarrant County	Texas	Orange County	New York	Cascade County	Montana	Buchanan County	Missouri	Washoe County	Nevada	Peoria County	Illinois	
Population (2010)	1,809,034	25,145,561	372,813	19,378,102	81,327	989,415	89,201	5,988,927	421,407	2,700,551	186,494	12,830,632	308,745,538
Population (2020)	2,110,640	29,145,505	401,310	20,201,249	84,414	1,084,225	84,793	6,154,913	486,492	3,104,614	181,830	12,812,508	331,449,281
Change	14.29%	13.72%	7.10%	4.07%	3.66%	8.74%	-5.20%	2.70%	13.38%	13.01%	-2.57%	-0.14%	6.85%
% Ethnic Minority	54.7	58.8	57.3	44.7	15.1	14.1	17.3	20.9	37.7	51.8	30.6	39.2	39.9
% Aftican American	17.9	12.9	13.2	17.6	1.7	0.6	6	11.8	2.7	10.3	18.8	14.6	13.4
% Hispanic	29.5	39.7	21.6	19.3	4.7	4.1	6.9	4.4	25	29.2	5.1	17.5	18.5
% Asian	5.8	5.2	3	9	1	0.9	1.5	2.2	5.8	8.7	4.1	5.9	5.9
% Native Hawaiian & Pacific Islander	0.3	0.1	0.1	0.1	0.1	0.1	0.5	0.2	0.7	0.8	0.1	0.1	0.2
% American Indian & Alaska Native	0.9	1	0.9	1	4.9	6.7	0.8	0.6	2.2	1.7	0.4	0.6	1.3
% Low Income Persons	10.2	13.6	12.3	13	14.2	12.6	15.8	12.9	10.7	12.5	14.8	11.5	11.4
% Children	26	25.5	25.5	20.7	22.4	21.4	22.4	22.3	21.3	12.5	23.7	22.2	22.3
% Unemployment (2010)*	7.4	7	6.3	7.5	5.7	5.7	7.3	7.4	8	9	7.6	8.6	7.9
% Unemployment (2019)**	4.7	5.1	4.3	5.5	3.9	4	4.6	4.6	5.3	6.2	7.5	5.9	5.3
2019 Workforce	1,099,635	14,055,852	188,686	10,069,219	40,697	536,872	43,341	3,074,639	244,976	1,507,387	88,527	6,663,517	164,629,492
2019 Median Income	$33,292	$31,277	$34,959	$39,326	$30,110	$31,151	$26,347	$30,810	$36,071	$31,557	$32,041	$36,038	$62,843
Median Household Income	$67,700	$61,874	$79,944	$68,486	$49,913	$54,970	$51,916	$55,461	$64,791	$60,365	$55,842	$65,886	$34,103
Occupation (% of 2019 workforce)													
Management, business, science, and arts	37.1	36.7	36.8	41.5	35.4	37.3	29.2	37	34.1	29.6	38.9	38.7	38.5
Service	15.8	17.3	19.4	20	19.4	19	17.7	17.3	20	26	19.2	17.2	17.8
Sales and office	23.3	22.2	23	21.4	23.4	20.8	21	22.2	22.9	23.3	22.3	21.9	21.6
Natural resources, construction, and maintenance	9.1	10.8	8.3	7.1	11	12.2	8.7	8.8	8.7	9	7.6	7.2	8.9
Production, transportation, and material moving	14.7	13	12.4	10	10.8	10.8	23.4	14.8	14.3	12.1	12	15	13.2

Source: United States Census Bureau, 2021 (https://data.census.gov/cedsci/)

* 2010: American Community Survey 5-year estimates data profiles

** 2019: American Community Survey 5-year estimates data profiles

3.12.5 Evaluation Criteria

The significance of population and expenditure impacts are assessed in terms of their direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary greatly depending on the location of a proposed action; for example, the termination of an operation that employs 25 people in a major metropolitan area may be virtually unnoticed while the same action would have significant impacts in a small community. If potential socioeconomic impacts would result in a substantial shift in population trends, or adversely affect regional spending patterns, the impact would be significant.

An impact to environmental justice would be considered significant if the proposed action would result in a disproportionate adverse impact to minority or low-income populations in the project vicinity. An impact to the Protection of Children from Environmental Health Risks and Safety Risks would be considered significant if the proposed action would result in a disproportionate adverse impact to the health or safety of children. An impact to the American Indian and Alaska Native Policy would be considered significant if the proposed action would result in a disproportionate adverse impact to American Indian and Alaska Native populations in the project vicinity.

3.12.6 Environmental Impacts

The Proposed Action would have a beneficial impact to socioeconomics. Creation of the AES would bring a long-term opportunity for local jobs. Given the low unemployment in the regions considered, the addition of temporary jobs is not likely to have a large economic impact to the overall region; however, individuals may be positively affected. Adding a new mission could bring up to 120 new permanent jobs to the area. This would have a beneficial impact on the local community.

The Proposed Action would not have adverse effects on socioeconomics, environmental justice, or the protection of children. No disproportionate impacts to sensitive or disadvantaged populations were identified. Therefore, effects on socioeconomics would not be significant.

Regarding cumulative impacts, the Proposed Action would have minor beneficial impacts to socioeconomics in both the short term (construction projects) and long term (new permanent jobs). In the reasonably foreseeable future, other renovation and construction activities are expected at each P&RA. Therefore, the Proposed Action would have short-term and minor beneficial cumulative impacts.

Under the No Action Alternative, no AES activities would occur at any of the bases. Short-term and long-term jobs at all bases would remain unchanged, and the No Action Alternative would have no impacts to socioeconomics.

3.13 HAZARDOUS MATERIALS AND WASTES, SOLID WASTE, AND OTHER CONTAMINANTS

3.13.1 Definition of Resource

Activities covered under this resource section include the use, handling, and disposal of hazardous materials and wastes, and storage and use of munitions. Hazardous materials are substances with strong physical properties of ignitability, corrosivity, reactivity, or toxicity which may cause an increase in mortality, a serious irreversible illness, incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous wastes are any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health or the environment. Hazardous wastes that may be found on bases with aged infrastructure include asbestos, lead-based paints, and mercury ballasts in equipment.

Issues associated with hazardous materials and wastes typically center around underground storage tanks; aboveground storage tanks; and the storage, transport, and use of pesticides, fuel, and petroleum, oil, and lubricants. When such resources are improperly used in any way, they can threaten the health and well-being of wildlife species, biological habitats, soil systems, water resources, and people.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, DoD has dictated that all facilities develop and implement Hazardous Waste Management Plans (HWMPs) and Spill Prevention and Response Plans. Also, DoD has developed the Environmental Restoration Program, intended to facilitate thorough investigation and cleanup of contaminated sites located at military installations. These plans and programs, in addition to established legislation effectively form the “safety net” intended to protect the ecosystems on which most living organisms depend.

3.13.2 Existing Conditions

All bases under consideration for the AES mission have existing plans for Hazardous Waste Management, Solid Waste, Spill Prevention and Toxics Management (asbestos, lead paint, and similar legacy building materials). Similarly, each base has been evaluated for areas requiring environmental restoration (remediation) and has been screened for the presence of Perfluoroalkyl Substances (PFAS). This discussion of existing conditions focuses on the portions of the bases where action is proposed to support the AES mission. Environmental issues or actions outside of the P&RAs are not described herein. The evaluation focuses on how and to what degree the Proposed Action or alternative could affect hazardous material usage and hazardous waste generation or could impact existing hazardous environmental conditions.

Specific issues that were considered include the use and generation of hazardous materials and waste; the presence of existing environmental site issues within the Proposed Action or alternative area; the presence of PFAS within the Proposed Action

or alternative area; and the presence of toxics such as asbestos and lead paint. *Table 3-14* gives a summary of the status of known issues for each base.

3.13.3 Evaluation Criteria

Numerous local, state, and federal laws regulate the storage, handling, disposal, and transportation of hazardous materials and wastes; the primary purpose of these laws is to protect public health and the environment. The significance of potential impacts associated with hazardous substances is based on toxicity, ignitability, and corrosivity. Generally, impacts associated with hazardous materials and wastes would be significant if implementation of the proposed action would involve the storage, use, transportation, or disposal of hazardous substances that would substantially increase human health risks or environmental exposure. For example, if implementation of the proposed action would exacerbate conditions at an existing area of contamination, impacts could be significant.

A reduction in the quantity of hazardous substances used and/or generated would be a beneficial impact; a substantial increase in the quantity and/or toxicity of hazardous substances used or generated could be potentially significant. Significant impacts would result if a substantial increase in human health risks and/or environmental exposure were generated, and such impacts could not be mitigated to acceptable local, state, and federal levels.

Table 3-14: Summary of Hazardous Waste and Related Issues.

Installation Building	Existing Hazardous Material and Waste Status	Presence of Existing Environmental Site Issues	Presence of PFAS	Presence of Toxics (asbestos, lead paint or other)
105 AW at Stewart ANGB, NY **B107**	B107 houses an oil/water separator, an initial hazardous waste accumulation point, and a universal waste (battery) accumulation point (URS, 2018).	No historical issues identified.	Sampling identified PFAS in the storm drain system near B107. An adjacent building is a former fire station (Wood, 2020).	No asbestos or lead-based paint materials on base (Noteboom, 2020).
120 AW at Great Falls ANGB, MT **B41**	B41 is not used for hazardous materials nor waste accumulation (MTANG, 2017).	Several historical sites have GW issues and are monitored. None are adjacent to Building 41 (TetraTech, 2019).	B41 is not identified as a PFAS area of concern. PFAS are identified in soil and GW on other portions of the base (Leidos, 2019).	All asbestos abated in 2004 and 2007 (MTANG, 2011).
136 AW at NAS JRB Fort Worth, TX **B1678 and B4175**	B4175 is a satellite accumulation location for hazardous waste (Tri-Eco-Tetratech, 2018).	No issues identified near B678 and B4175.	Base evaluation not yet complete.	No asbestos materials identified in B1678 or B4175 (Cook, 2017).

Installation Building	Existing Hazardous Material and Waste Status	Presence of Existing Environmental Site Issues	Presence of PFAS	Presence of Toxics (asbestos, lead paint or other)
139 AW at Rosecrans ANGB, MO **B4**	B4 is not used for hazardous materials nor waste management (MOANG, 2013).	Only identified site on base is a former GW monitoring location, not near B4 (Leidos, 2018b).	B4 is not identified as a PFAS area of concern. PFAS are identified in soil and GW on other portions of the base (BB&E, 2016).	B4 is identified as having asbestos containing materials (non-friable) (META, 2013).
152 AW at Reno/ Tahoe IAP, NV **B76**	B76 houses multiple hazardous waste and universal waste accumulation points (NVANG, 2018).	A "no further response action planned" decision has been documented for three historical sites; none are near B76 (Leidos, 2017).	An investigation has identified PFAS in soils and GW west of B76, which is identified as a former training area where aqueous fire-fighting foams may have been used (Leidos, 2018a).	B76 is not identified as having asbestos (152 CES OI-32-1052, 2019).
182 AW at Peoria ANGB, IL	B536 and B734 are used for "special waste" (non-hazardous) accumulation; B734	No historical issues identified.	PFAS investigations near B536 and B734 did not find concentrations above the Health Advisory	B830 is identified as having non-friable asbestos in flooring materials (ILANG, 2005).

Installation Building	Existing Hazardous Material and Waste Status	Presence of Existing Environmental Site Issues	Presence of PFAS	Presence of Toxics (asbestos, lead paint or other)
B830, B536, B734	has used oil accumulation (ILANG, 2018).		Levels. PFAS are identified in soil and GW on other portions of the base (Amec Foster Wheeler, 2018).	

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3.13.4 Environmental Impacts

The proposed locations considered whether the site included work within an environmental restoration or remediation area, would impact toxics, would impact hazardous waste management, or would impact known PFAS contamination areas. For all alternatives, some common actions would be required:

- All asbestos-containing and lead-based paint materials would require abatement and proper disposal in accordance with federal policy and regulations. Due to the age of some of the buildings, asbestos and lead paint surveys should be considered prior to any renovation or demolition work.

- Any PFAS contaminated soil, water, or sediment will require proper disposal, based on federal requirements. PFAS policy and regulations are rapidly evolving, and it is highly recommended that PFAS survey results and the most recent regulations and guidance be reviewed prior to any earth disturbing activities.

All of the alternatives have the potential to reduce the amount of hazardous materials and wastes at the base, by asbestos abatement or PFAS-contaminated soil removal. The reduction in hazardous materials or waste at the site would be a beneficial impact. *Table 3-15* gives a summary of the potential impacts for the alternative locations. Under normal day-to-day operations, AES does not create hazardous waste; only office-type waste streams would be produced. The AES may create some pharmaceutical waste with expired medications, but the host medical unit or the county has pharmaceutical take back programs to not tie the waste stream to the Wing. Therefore, the Proposed Action, when considered with past, present, and reasonably foreseeable future actions on and off the base is not expected to result in significant impacts relating to hazardous materials, hazardous waste, solid waste, and other contaminants.

Under the No Action Alternative, no AES activities would occur at any of the bases. Hazardous materials, hazardous waste, solid waste, and other contaminants at all bases would remain unchanged, and the No Action Alternative would have no impacts.

Table 3-15: Summary of Potential Hazardous Waste and Other Related Impacts.

Installation / Building	Hazardous Materials and Wastes Impacts	Existing Environmental Site Impacts	PFAS Impacts	Impacts to Toxics (Asbestos/Lead Paint)
105 AW at Stewart ANGB, NY **B107**	Potential adjustment of waste accumulation points.	None anticipated.	PFAS identified in the storm drain near B107; additional investigation of soils and proper handling/disposal would be required for earth disturbing activities.	None anticipated.
120 AW at Great Falls ANGB, MT **B41**	None anticipated.	None anticipated.	Potential for indirect impact; PFAS are identified in soil and GW on other portions of the base.	None anticipated.
136 AW at NAS JRB Fort Worth, TX **B1678 and B4175**	Potential adjustment of waste accumulation points.	None anticipated.	Unknown; requires future investigation.	None anticipated.
139 AW at Rosecrans ANGB, MO **B4**	None anticipated.	None anticipated.	Potential for indirect impact; PFAS are identified in soil and GW on other portions of the base.	B4 would require abatement.
152 AW at Reno/ Tahoe IAP, NV	Potential adjustment of waste accumulation points.	None anticipated.	PFAS are identified in the soils at B76; proper handling/disposal	None anticipated.

Installation / Building	Hazardous Materials and Wastes Impacts	Existing Environmental Site Impacts	PFAS Impacts	Impacts to Toxics (Asbestos/Lead Paint)
B76			of all soils and GW required.	
182 AW at Peoria ANGB, IL **B830, B536, B734**	Potential adjustment of waste accumulation points.	None anticipated.	Potential for indirect impact; PFAS are identified in soil and GW on other portions of the base.	B830 would require abatement

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4. FINDINGS AND CONCLUSIONS

This chapter summarizes the findings of the environmental effects analysis, measures that would be implemented to avoid or minimize environmental impacts, permit requirements associated with the Proposed Action, and the conclusion of the EA.

4.1 SUMMARY OF ENVIRONMENTAL EFFECTS

Table 4-1 shows the potential effects of implementing the Proposed Action for the environmental resources evaluated versus the No Action Alternative. Implementing the Proposed Action would result in short-term and long-term less than significant impacts, long-term impacts, and beneficial impacts. Cumulative effects would not be significant (refer to Chapter 3).

4.2 BEST MANAGEMENT PRACTICES AND CONTROL MEASURES TO REDUCE EFFECTS

4.2.1 Air Quality

Project construction would employ BMPs to minimize fugitive dust and tailpipe emissions. BMPs to minimize fugitive dust would include using water to control dust and cleaning streets as needed, and phasing construction to minimize exposed surface areas. BMPs to reduce tailpipe emissions would include minimizing unnecessary idling of vehicles and machinery. All diesel fuel will be ultra-low sulfur dioxide, as required by law, to reduce construction equipment emissions. Similarly, construction equipment will use required emissions controls such as catalytic converters and particulate traps. In general, all construction equipment will meet the 1996 emissions standard as required by law.

In addition, any asbestos abatement or similar environmental abatement needed prior to building renovations (removal of mercury ballast fluorescent lights, lead paint, mercury ballasts or switches) would be done in accordance with federal laws, worker safety requirements, and safe disposal requirements. All renovations and new construction will follow current guidance for sustainable buildings, including AGRAM 17-01 and UFC 1-200-02 (refer to Section 1.5.4 for a discussion on sustainability requirements). Guidance for sustainable buildings addresses, in part, efforts to reduce GHG emissions.

These BMPs are not necessarily all-inclusive; the base, and any contractors would need to comply with all applicable air pollution control regulations.

4.2.2 Noise

Project construction would occur between the hours of 7:00 a.m. and 6:00 p.m. to minimize nuisance noise levels at nearby residences.

4.2.3 Geological Resources

BMPs will be implemented in accordance with the General Permit (GP) for Stormwater Discharges Associated with Construction Activity and its associated Stormwater Pollution Prevention Plan (SWPPP). Implementation of construction BMPs would

minimize soil erosion impacts that are caused by wind and stormwater. Post-construction would include reseeding any staging areas and non-built areas with native grass species to stabilize soils.

4.2.4 Water Resources

The Proposed Action would comply with the installation's GPs, associated SWPPPs with specified BMPs, and stormwater controls sufficient to ensure no net increase in peak flow rates and total volume of runoff from the site. BMPs, such as silt fencing, would be installed on the perimeter of the construction site to keep erosion from migrating to water resources. Post-construction would include reseeding any staging areas and non-built areas with native grass species to stabilize soils. The installation will implement their Stormwater Management Program and SWPPP in accordance with state and federal regulations. There is no proposed construction in known wetland areas. The Proposed Action does not include work within a floodplain.

4.2.5 Biological Resources

An important consideration for construction projects is preventing the spread of invasive species through tracking oil, seeds, plant fragments, aquatic hitchhikers, or non-native and potentially invasive species. Construction contractors must take specific action to prevent the spread of invasive species to and from this site. Contract specifications should include the following BMPs:

1) cleaning equipment and vessels to prevent the spread of seeds, eggs, larvae, or other dispersal vectors; and
2) discharging or exchanging ballast water, or other water, from a vessel of any type to prevent transfer of water from one water body into another.

All equipment, including tires and tracks, are free from soil residuals, debris, egg deposits from pests, noxious weeds, and plant seeds. Equipment that is visibly dirty or tracks soil or other materials to the site shall be removed from the worksite and cleaned prior to use.

Table 4-1: Summary of Environmental Impacts.

Parameter of Concern	Proposed Action/ Preferred Alternative Fort Worth (136 AW)	No Action Alternative	Alternative 1: Stewart (105 AW)	Alternative 2: Montana (120 AW)	Alternative 3: Rosecrans (139 AW)	Alternative 4: Reno/Tahoe (152 AW)	Alternative 6: Peoria (182 AW)
Safety	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.
Noise	Temporary construction-related; no long-term impacts.	No impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts	Temporary construction-related; no long-term impacts	Temporary construction-related; no long-term impacts	Temporary construction-related; no long-term impacts
Land Use	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.
Visual Resources	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.
Water Resources	No impacts.	No impacts.	No impacts.	No impacts.	Less than significant impact to floodplains. No impact to other water resources.	No impacts.	Less than significant impact to surface water, wetlands, and groundwater. No impact to other water resources.
Transportation and Circulation	Temporary construction-related; no long-term impacts.	No impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.
Air Quality	Temporary construction-related; no long-term impacts.	No impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.
Geological Resources	Temporary construction-related; no long-term impacts.	No impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.	Temporary construction-related; no long-term impacts.
Biological Resources	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.
Cultural Resources	No adverse effects	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.
Socioeconomics	Temporary construction job opportunities for all construction/renovation projects; long-term increase of up to 120 jobs.	No impacts.	Temporary construction job opportunities for all construction/renovation projects; long-term increase of up to 120 jobs.	Temporary construction job opportunities for all construction/renovation projects; long-term increase of up to 120 jobs.	Temporary construction job opportunities for all construction/renovation projects; long-term increase of up to 120 jobs.	Temporary construction job opportunities for all construction/renovation projects; long-term increase of up to 120 jobs.	Temporary construction job opportunities for all construction/renovation projects; long-term increase of up to 120 jobs.
Hazardous Materials and Wastes	No impacts.	No impacts.	Beneficial impacts.	No impacts.	Beneficial impacts.	Beneficial impacts.	Beneficial impacts.
Climate Vulnerability	Increased temperature, flood, and drought risk.	No impacts.	Increased temperature, flood, and drought risk.	Increased temperature and drought risk.	Increased temperature and flood risk.	Increased temperature and drought risk.	Increased temperature and flood risk.

4.2.6 Hazardous Materials & Wastes, Solid Waste, and Other Contaminants

All hazardous materials and waste would be stored and handled in compliance with applicable federal and state laws and regulations, and the procedures outlined in the base's HWMP. Offsite transportation of hazardous waste, if any is required, would be done by a transporter with a hazardous waste identification number, licensed and insured to manage hazardous waste.

4.3 REQUIRED PERMITS

The following permits will be obtained prior to construction activities:

- Coverage under Texas Pollutant Discharge Elimination System GP for activities that include land disturbance and that could result in pollution to waters of the State.

4.4 CONCLUSIONS

Based on the analysis presented in the EA, implementation of the Proposed Action would not result in significant impacts on any of the resources analyzed within this document, and no further analysis or documentation, such as the preparation of an EIS, is required.

OPNAV M-5090.1 does not drive this document since Navy is not the lead agency, but related OPVNAV M-5090.1 requirements will be coordinated with NGB, as necessary.

- Minor and short-term impacts would occur from implementation of the Proposed Action to:
  - air quality,
  - noise, and
  - cultural resources
  - land use and
  - transportation and circulation.
- A short-term beneficial impact to socioeconomics would occur due to temporary construction job opportunities.
- A long-term beneficial impact to socioeconomics would occur with the increase of up to 120 new permanent jobs.
- The impacts of the Proposed Action, when combined with impacts from other present or planned development in the surrounding area, are not anticipated to result in significant cumulative impacts.

All practical and reasonable means will be employed by the ANG to minimize the potential impacts on the human and natural environment. Therefore, a FONSI is warranted.

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7. APPENDICES

7.1 APPENDIX A

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE

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7.2 APPENDIX B

USFWS ENDANGERED SPECIES ACT COORDINATION

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7.3 APPENDIX C

RECORD OF AIR ANALYSIS/
RECORD OF CONFORMITY ANALYSIS

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