Draft

Environmental Assessment

for Air Force Construction
of Consolidated
HELO/TRF OPS/AMU and
Alert Facility at
Minot Air Force Base,
Ward County, North Dakota

February 2019

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ABBREVIATIONS AND ACRONYMS

ACM	Asbestos Containing Material
ADP	Area Development Plan
AFB	Air Force Base
AFGSC	Air Force Global Strike Command
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AICUZ	Air Installation Compatible Use Zones
AMU	Aircraft Maintenance Unit
AOC	Area of Concern
APA	Alternative Parking Apron
APE	Area of Potential Effect
AQCR	Air Quality Control Region
AST	Aboveground Storage Tank
BMP	Best Management Practice
BTU	British Thermal Unit
BW	Bomb Wing
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CES	Civil Engineering Squadron
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CWA	Clean Water Act
dBA	A-weighted decibels
DNL	Day-Night-Average A-weighted Noise Level
DoD	Department of Defense
DWQ	Division of Water Quality
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act

ABBREVIATIONS AND ACRONYMS
(Continued)

EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESOHMIS	Environmental, Safety, and Occupational Health Management Information System
ESR	Emergency Security Response
FEMA	Federal Emergency Management Agency
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gases
HAP	Hazardous Air Pollutant
HAZMART	Hazardous Materials Pharmacy
HELO	Helicopter
HG	Helicopter Group
HMMP	Hazardous Material Management Program
HS	Helicopter Squadron
ICBM	Intercontinental Ballistic Missile
INRMP	Integrated Natural Resources Management Plans
LBP	Lead Based Paint
MAF	Missile Alert Facility
mg/m^3	Milligrams per Cubic Meter
MGD	Million Gallons per Day
MMRP	Military Munitions Response Program
MPA	Mass Parking Apron
MRA	Munitions Response Areas
MRS	Munitions Response Site
msl	mean sea level
MVA	megavolt-ampere
MW	Missile Wing
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act

ABBREVIATIONS AND ACRONYMS
(Continued)

NDAC	North Dakota Administrative Code
NDDH	North Dakota Department of Health
NDDOT	North Dakota Department of Transportation
NDGF	North Dakota Game and Fish
NDPDES	North Dakota Pollutant Discharge Elimination System
NEPA	National Environmental Policy Act of 1969
NFRAP	No Further Remedial Action Planned
NHPA	National Historic Preservation Act
NRHP	National Register of Historical Places
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NRCS	U.S. Department of Agriculture's Natural Resources Conservation Service
OPA	Overflow Parking Apron
OPS	Operations
OSHA	Occupational Safety and Health Administration
O_3	Ozone
Pb	Lead
PCB	Polychlorinated Biphenyl
$PM_{2.5}$	Particulate Matter Less than 2.5 Microns
PM_{10}	Particulate Matter Less than 10 Microns
POL	Petroleum Oils and Lubricants
POV	Privately Owned Vehicle
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
QD	quantity-distance
RCRA	Resource Conservation and Recovery Act
SDWA	Safe Drinking Water Act
SF	Square Foot
SFS	Security Forces Squadron

ABBREVIATIONS AND ACRONYMS
(Continued)

SHPO	State Historic Preservation Officer
SM	Square Meter
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasures
SWAP	State Wildlife Action Plan
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
tpy	Tons per Year
TRF	Tactical Response Force
USC	United States Code
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
US 83	U.S. Highway 83
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compound
$\mu g/m^3$	micrograms per cubic meter
§§	Sections

1.0 PURPOSE OF AND NEED FOR THE ACTION

1.1 BACKGROUND

Minot Air Force Base (AFB) is home to two wings: the 5th Bomb Wing (BW), which is Minot AFB's host wing, and the 91st Missile Wing (MW). Minot AFB is the only dual-wing nuclear-capable base in the Air Force, hosting two legs of the Strategic Triad, operating B-52s and Intercontinental Ballistic Missiles (ICBM). Minot AFB is located in Ward County, North Dakota, approximately 13 miles north from the center of the city of Minot (**Figure 1-1**). Minot AFB was built and has been in operation since 1957. Minot AFB hosts the 54th Helicopter Squadron (HS) and 582nd Helicopter Group (HG); which works jointly with the 91st Missile Wing's Tactical Response Force (TRF) to provide helicopter and security support to nuclear security operations, including its two primary missions of nuclear weapons movement (convoys) and 24/7 emergency security response (ESR) during recapture/recovery operations. A location map for Minot AFB is shown in **Figure 1-2**.

1.2 PURPOSE AND NEED

1.2.1 Purpose of the Action

Minot AFB needs to improve the ability of the 54th HS, 582nd HG and TRF to increase their mission response through integrated coordination and proximity. The Proposed Action is designed to accommodate the following four objectives: 1) plan for increased manning in the HS and the 91st Security Forces Squadron (SFS) TRF, 2) improve alert response times and maximize coordinated operations between the HS and TRF for ESR missions, 3) prepare for future consideration of different rotary wing airframe, to minimize environmental impacts, and 4) maximize the use of support functions (firefighting and refueling operations) that is shared between fixed and rotary wing aircrafts.

1.2.2 Need for the Action

The need for the Proposed Action is to address concerns related to insufficient response times for ESR missions when the HS and TRF units operate as a combined arms team. This need is driven by the requirement from U.S. Strategic Command mission directives of a 100 percent manned combined arms team that supports nuclear weapons movements (convoys) and 24/7 ESR alert in support of TRF recapture/recovery operations. While Minot currently meets the overall mission directive of 100% manned arms teams, the operation does not meet the required response times. Currently, the 54th HS, 582nd HG and TRF personnel operations are executed out of six separate facilities scattered throughout the base. The facilities are not sized adequately for the projected 100 percent manning, and the fixed wing and rotary wing airframes are co-located on the airfield. Space within many of the buildings is limited, and personnel are working in densely crowded quarters in buildings that are antiquated and, in many cases, in need of recurring repairs.

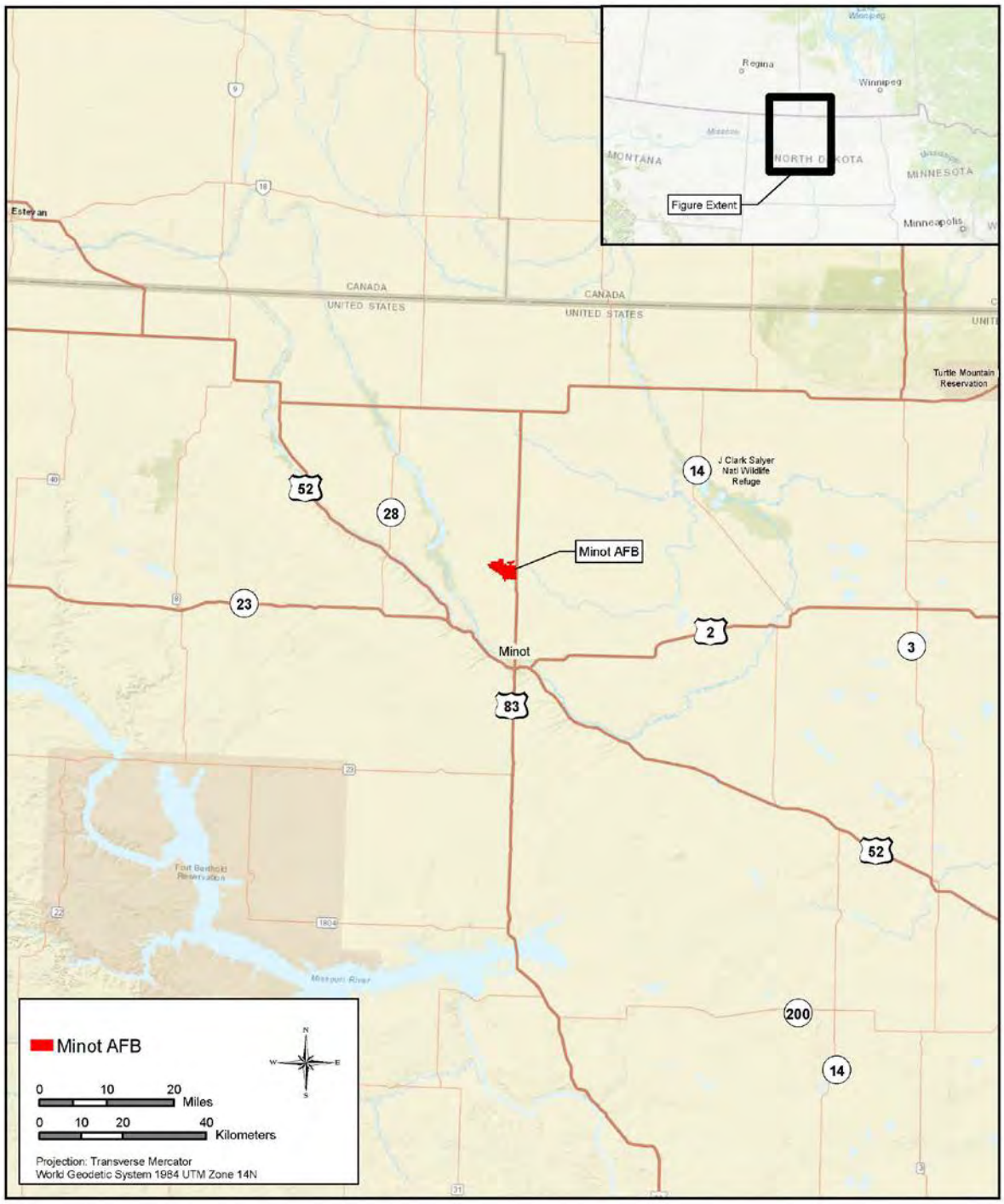

Figure 1-1: Vicinity Map for Minot AFB

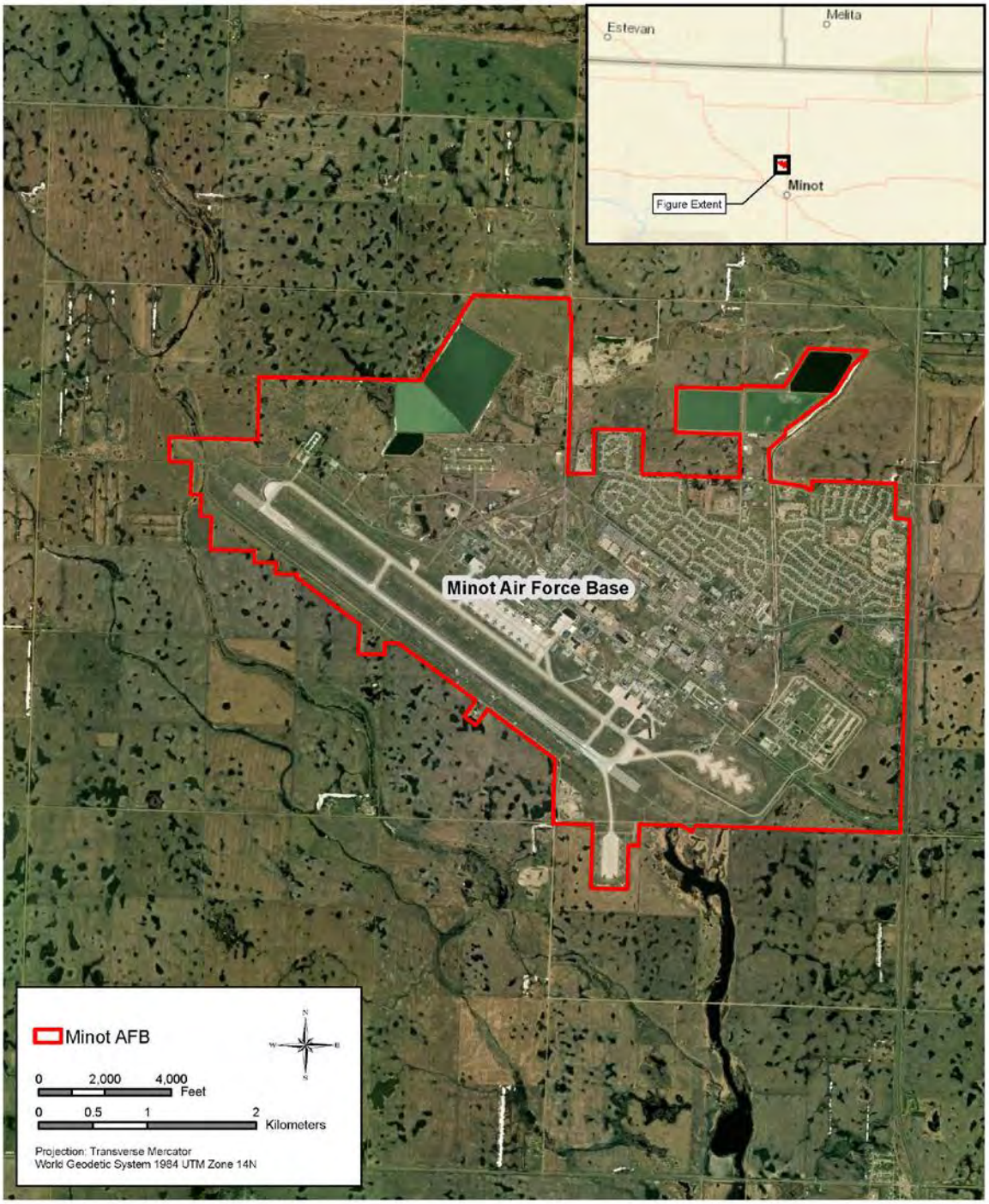

Figure 1-2: Location Map

Many of the existing buildings have been retrofitted to accommodate, to the extent practicable, HS and TRF personnel; however, space is limited for new personnel, and it is difficult to retrofit the older buildings with needed electronic technology systems. Many of the buildings are older and not conducive to system upgrades to support modern computer technology. In addition, since the operations are housed in buildings located throughout the base, it is difficult to provide efficient communication and response actions.

An Environmental Assessment (EA) is needed to provide Minot AFB with an environmental review and documentation to support the decision-making process for the Proposed Action. The purpose of the EA is to analyze any potential environmental consequences associated with the Proposed Action and alternatives.

1.3 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This EA includes a No Action Alternative and a reasonable range of alternatives. The EA discusses the affected environment and environmental consequences of the Proposed Action. This includes an analysis of the potential impacts the Proposed Action may have on noise, air quality, land use, topography and soils, water resources, biological resources, safety and occupational health, utilities and infrastructure, cultural resources, hazardous materials and wastes, and cultural resources.

Alternatives were considered, as discussed in Section 2, and the Proposed Action was selected because it fully meets the purpose and need.

An EA provides Minot AFB with environmental documentation to support the decision-making process for the proposed consolidated helicopter (HELO)/TRF Operations (OPS)/ Aircraft Maintenance Unit (AMU) and Alert Facility. This EA analyzes the potential environmental consequences associated with the proposed HELO/TRF OPS/AMU and Alert Facility.

This EA is prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) (Public Law 91-190), the President's Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500-1508), Air Force Instruction 32-7061/ 32 CFR 989, and the Environmental Impact Analysis Process (EIAP) (32 CFR 989).

This EA evaluates whether the Proposed Action will result in significant impacts to the environment. If significant impacts are identified, the Air Force will undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an Environmental Impact Statement (EIS), or abandon the Proposed Action.

This EA is a planning and decision-making tool that guides the Air Force in implementing the Proposed Action in a manner consistent with Air Force standards for environmental stewardship.

1.4 PUBLIC AND AGENCY INVOLVEMENT

This EA is prepared in accordance with NEPA, the regulations of the CEQ that implement NEPA procedures, the Air Force EIAP Regulations 32 CFR Part 989, and Air Force Instruction 32-7061 (Secretary of the Air Force, 2003).

NEPA requires that environmental information be made available to the public throughout the decision-making process and prior to actions being taken. Agency and public comments and concerns are taken into consideration in the decision-making process and development of the EA. Interagency coordination, tribal consultation, and public outreach and input is completed in accordance with all regulations, guidance, and policies. A Notice of Availability (NOA) of the Draft EA is published in local newspapers and made available (e.g., direct mailings, provided to local libraries, available online, etc.) for public review and comment in accordance with the NEPA guidelines.

Interagency/intergovernmental coordination is performed in accordance with the Interagency/Intergovernmental Cooperation Act of 1968 (31 U.S. Code [USC] Ch. 65) and Executive Order [EO] 12372 and federal, state, and local agencies with jurisdiction that could be affected by the Proposed Action.

In addition, consultation with the U.S. Fish and Wildlife Service (USFWS) is sought in accordance with Section 7 and/or Section 10 of the Endangered Species Act (ESA), as applicable. Section 106 of the National Historic Preservation Act requires consultation with the Advisory Council on Historic Properties and tribal consultation to determine if an undertaking could affect historic properties.

EO 13175, *Consultation and Coordination with Indian Tribal Governments*, directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally-administered lands. Consistent with that EO, Department of Defense (DoD) Instruction 4710.02, *Interactions with Federally-recognized Tribes* and Air Force Instruction 90-2002, *Air Force Interaction with Federally-recognized Tribes*, federally-recognized tribes that are historically affiliated with the Minot AFB geographic region are invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation and the interagency coordination process and requires separate notification of all relevant tribes. Tribal consultation has been initiated for the Proposed Action.

A copy of consultation letters and a listing of all persons, agencies and tribes contacted can be found in Appendix A.

1.5 RELATED NEPA, ENVIRONMENTAL, AND OTHER DOCUMENTS AND PROCESSES

NEPA requires analysis of potential environmental impacts associated with a proposed federal action(s) prior to making decisions regarding the Proposed Action. The purpose of NEPA is to ensure evaluation of the environmental, social, and economic effects of the Proposed Action. The CEQ oversees NEPA implementation. The process for implementing NEPA is outlined in 40 CFR Sections (§§) 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The purpose of preparation of an EA, in accordance with the CEQ regulations, is to provide evidence and analysis for determining whether to prepare a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA), or whether the preparation of an EIS is necessary.

This EA examines the potential impacts of the Proposed Action and alternatives on resource areas; specifically, noise, air quality, land use, topography and soils, water resources, biological resources, safety and occupational health, utilities and infrastructure, cultural resources, hazardous materials and wastes, and cultural resources. No potential impacts are anticipated to result from the Proposed Action or alternatives related to geologic resources, socioeconomics, or environmental justice because the action alternatives would all occur within the boundaries of Minot AFB in an area surrounded by base development. Therefore, no further analysis of these resources/issue areas is included in the EA.

1.6 REGULATORY FRAMEWORK

NEPA was signed into law on January 1, 1970. The President's CEQ was established at the same time to coordinate the environmental efforts with federal agencies in the development of environmental policies and initiatives. In 1978, the CEQ issued binding regulations which implement the procedural provisions of NEPA (40 CFR §§ 1500-1508). To meet federal requirements outlined in both NEPA and CEQ regulations, the Air Force codified their formal NEPA analysis process in 32 CFR Part 989 - Environmental Impact Analysis Process. EIAP is the Air Force's NEPA compliance program. All actions undertaken by the Air Force must comply with NEPA and the Air Force EIAP.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This section presents information on the Proposed Action to construct a consolidated facility housing various operational support, maintenance, TRF alert crew living space, and training space. Section 2.2 describes how the Proposed Action would be implemented, and Section 2.3 identifies alternatives to the Proposed Action, including the No Action Alternative. Implementation of the Proposed Action by construction of a two-story consolidated facility, as described in Section 2.2, is Minot AFB's Preferred Alternative.

2.2 PROPOSED ACTION

The Proposed Action is to construct a 12,545 square meter (SM) [135,033-square-foot (SF)] two-story consolidated facility housing various operational support, maintenance, TRF alert crew living space, and HS operations and alert crew training space. The consolidated facility also requires 54,056 SM [581,854 SF] of impervious surfaces, including apron and taxiway support facilities, privately owned vehicle (POV) parking, access roads, sidewalks, curbs, and gutters. These improvements to Minot AFB will help to meet the need for action as discussed in Section 1.2. Currently, 54th HS, 582nd HG and TRF operations are executed from six facilities in different locations around the base. Having these separate facilities is not conducive to effective operations and causes delay in response times.

These improvements to Minot AFB would help to meet 1) the task of providing helicopter support to nuclear security operations and 2) the two primary missions of nuclear weapons movements (convoys) and 24/7 ESR alert in support of the TRF crew during recapture and recovery operations.

The locations of the Proposed Action and Action Alternatives are shown on **Figure 2-1**. The location of the Proposed Action is planned for an empty field north of the existing taxiway, southeast of Summit Drive, and southwest of Bomber Boulevard. The Proposed Action is to construct a two-story Consolidated HELO/TRF OPS/AMU and Alert Facility with aircraft parking, a taxiway, POV and TRF parking, and additional features/structures such as fencing, curbs, gutters and walkways. The construction of a consolidated facility will allow Minot AFB to improve efficiency and functionality while meeting mission requirements of Air Force Global Strike Command (AFGSC). Construction of the consolidated facility and supporting structures includes the following additions:

- Consolidated HELO/TRF OPS/AMU and Alert Facility
- Aircraft parking for 11 helicopters with a small taxiway to connect to the larger existing taxiway and airfield shoulder, based off of fielding plans for the new aircraft

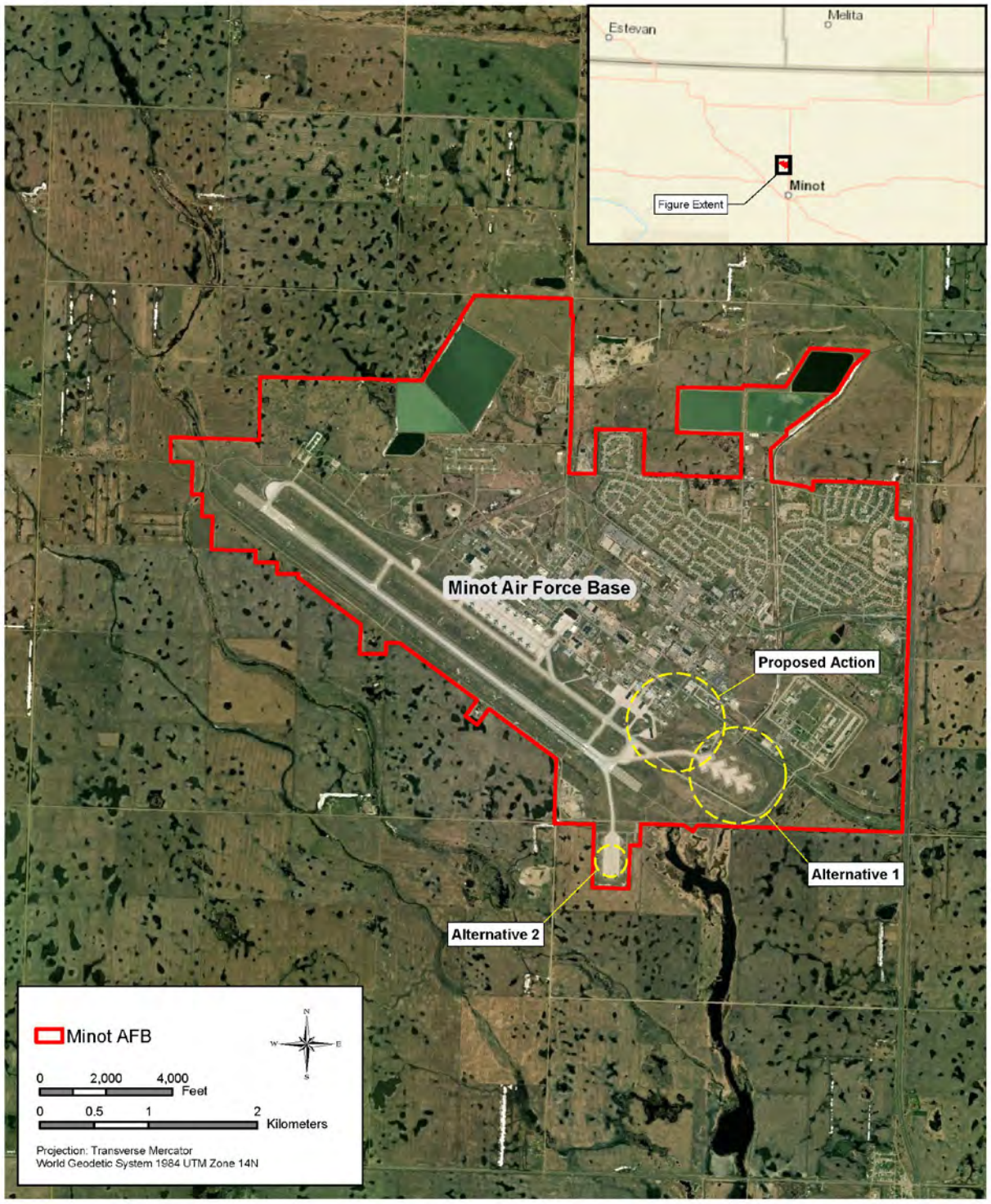

Figure 2-1: Proposed and Alternative Actions Location Map

- Main Facility Access (off of Summit Drive) leading to dumpster enclosure, POV parking including 146 spaces, TRF parking including 45 spaces, handicap accessible parking including five spaces and one van space, TRF Hardstand, and concrete sidewalks
- Ground support area access (off of Summit Drive) leading to ground support hardstand, loading dock, and airfield access
- Anti-Terrorism/Force Protection Standoff, 40 feet around the Consolidated Facility
- Petroleum oil, lubricants and other hazardous materials storage for maintenance operations
- Armory
- PL-3 fencing

Alert functions include the alert hanger for rotary wing operations (three bays), a TRF vehicle barn, armory, and storage. Additional construction of the consolidated building will include: aircraft shelter (six-bay HELO), maintenance hangar (12-bay HELO with Helicopter Maintenance Unit), tactical vehicle facility (five Bearcats), static simulator, helipad, four HELO tie-down parking pads, demo vehicle operations, heated parking, demo entry control, and demo group headquarters (Building 773).

The location of the Proposed Action was determined based on various criteria, such as the avoidance of conflicts and availability of space. The main criteria to determine a location of the Proposed Action is accessibility to a runway which is required for helicopter recovery.

2.3 ALTERNATIVES CONSIDERED

2.3.1 Alternatives Development

In June 2015, the Air Force published an Area Development Plan (ADP) for the Flightline District 4A at Minot AFB. The Flightline District was part of the ADP and lies along the existing runway. The Flightline District is a planning district for future buildout and modification of this portion of the Air Force base. The ADP was focused on planning for major activities associated with alert and aircraft support functions for both fixed and rotary wing aircraft within the Minot AFB Flightline District. The planning exercise (planning charrette) included participation by a number of stakeholders including both the 5th Bomb Wing and 91st Missile Wing and their respective Operational Groups, Mission Support Groups, Maintenance Groups, and other stakeholders. The stakeholders evaluated plans for development of the flightline, taking into account many environmental and planning considerations. A range of alternatives for the Flightline area was developed based on several goals identified in the ADP, and those alternatives included facilities associated with a consolidated HELO/TRF OPS/ AMU and Alert Facility for the 54th HS and TRF. The Proposed Action and alternatives were developed using the results of the planning charrette and further refining the options for a consolidated HELO/TRF OPS/ AMU and Alert Facility to meet the specific project purpose and need.

The Proposed Action and alternatives include a mixture of new construction and reuse of existing buildings and facilities. The No Action Alternative assumes no changes would be made; the 54th HS, 582nd HG and TRF will continue to be housed in their existing facilities, and no new facility would be constructed.

Each alternative was analyzed against the following selection standards:

- Standard 1: Offer suitable land area to house the required facility within close proximity of the HELO pad
- Standard 2: Minimize construction costs and ground disturbance by selecting a location that has existing infrastructure (gas, electrical, water, sewer) in proximity and that does not require extensive costs or disturbance to make connections
- Standard 3: Minimize mission impact to ongoing B-52 and airfield operations
- Standard 4: Offer the ability to house all ESR and TRF activities in a single facility/campus
- Standard 5: Provide adequate distance between the overflow parking apron (OPA) for helicopter operations and base support

Each of the final alternatives evaluated is described below.

2.3.2 Preferred Alternative

The Preferred Alternative is to implement the Proposed Action, as described in Section 2.1, by constructing a consolidated two-story HELO/TRF OPS/AMU and Alert Facility which includes construction of a 12,545 SM [135,033 (SF)] helicopter facility (consolidated facility to house various operational support, maintenance, TRF alert crew living space, and training space). The consolidated facility will also require 54,056 SM [581,854 SF] of impervious surfaces, including apron and taxiway support facilities, POV parking, TRF parking, access roads, sidewalks, curbs, and gutters.

The location of the consolidated facility and supporting structures for the Preferred Alternative is planned for an empty field north of the existing taxiway, southeast of Summit Drive, and southwest of Bomber Boulevard. This location is in an open area at the southeastern end of the airfield, approximately 1,400 feet north of Taxiway L. A site plan of the Preferred Alternative and its location is shown on **Figure 2-2**.

This location of the Preferred Alternative does not have any conflicts with other existing or future land uses and meets the runway access requirement. This location does have the potential to impact the swale that channels storm water away from the airfield; this will need to be taken into consideration during the design phase. This location consists of generally flat terrain with minimal tree cover and vegetation primarily consisting of mowed turf-type grass. Site access is available through the existing roadway network and no other roads would need to be constructed. Additionally, there are no existing buildings in this location that would require demolition to

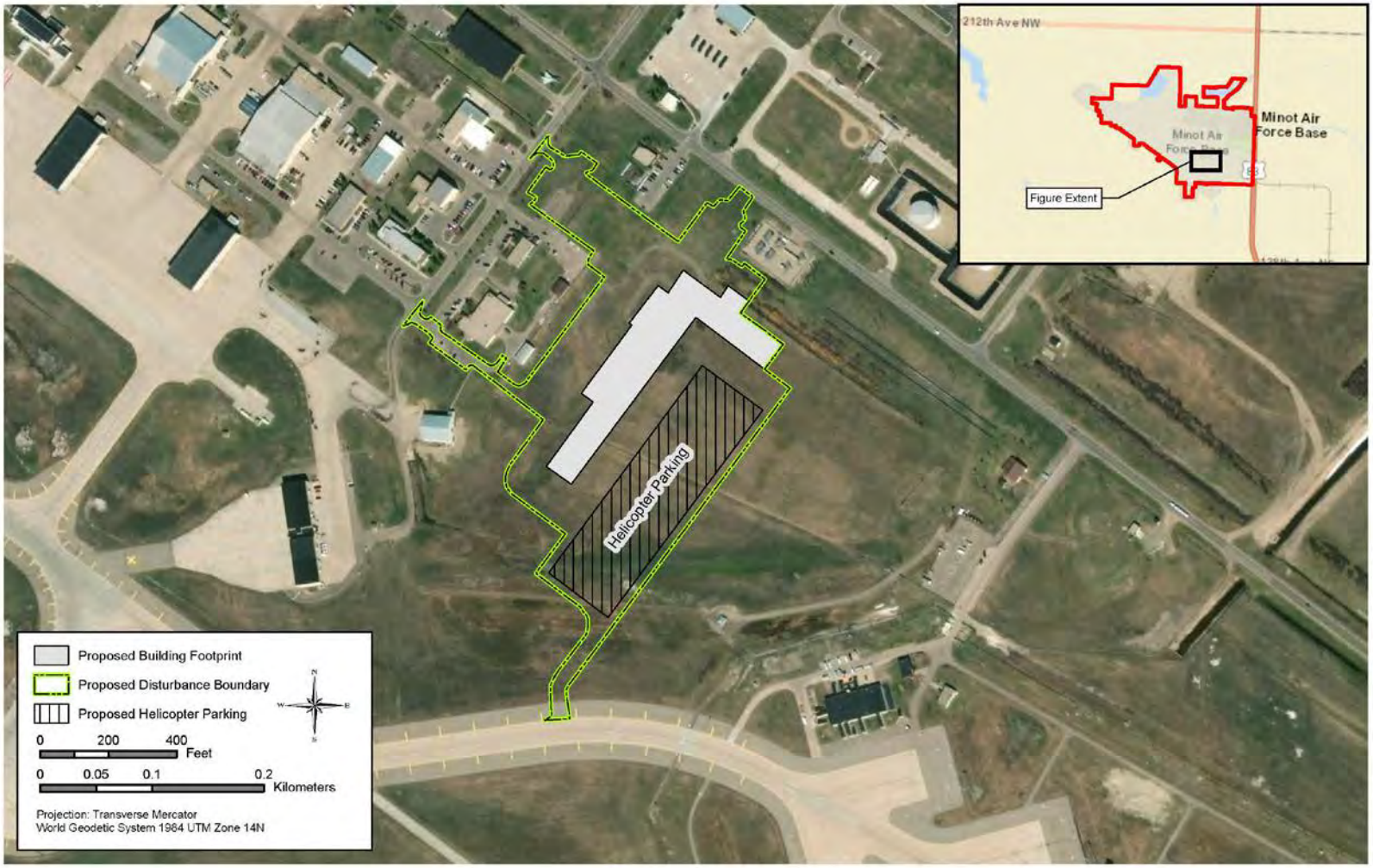

Figure 2-2: Overall Site Plan for Proposed Action

construct the consolidated facility; however, an existing parking lot and some portions of airfield fencing would need to be removed.

This alternative is located near an abandoned fuel hydrant line. This proximity would require additional engineering considerations with respect to foundation placement and underground utility services placement. In addition, there may be unknown isolated pockets of soil contamination with fuel and other unknown environmental hazards encountered during construction which may increase construction costs.

The Preferred Alternative has four distinct advantages. First, the Preferred Alternative provides for the most immediate aircraft support. Second, as identified in the Planning Charrette, having all aircraft located near the maintenance docks with taxi-through parking (without the need for pushbacks) via the median paving will save approximately 7,000 man hours per year. Third, this alternative consolidates the TRF/helicopter alert functions in an infill scenario at the Mass Parking Apron (MPA), which streamlines efficiency. Fourth, the Preferred Alternative minimizes construction and ground disturbance due to proximity to existing connections to infrastructure (gas, electrical, water, sewer). The Preferred Alternative does have some disadvantages, including possible cost and scheduling impact for project construction due to the need to coordinate the median paving work.

This alternative is considered the Preferred Alternative because of the advantages that the infill scenario has for development, the location's proximity to base support, ability to house all ESR and TRF activities in a single facility, and the reduction of mission response time for TRF alert crews. The Preferred Alternative is also consistent with the goals identified for the ADP, in that in-fill development within the Flightline District 4A should aid in reducing operations and maintenance costs and improve operational effectiveness.

2.3.3 Alternative 1

Alternative 1 was created with emphasis on consolidation, functional relationships, unit integrity, safety, aircraft movement, and parking. Alternative 1 is located on the farthest southeastern edge of Flightline District 4A, southeast of Summit Drive and southwest of Bomber Boulevard. This site was chosen with the goal of complementing the requirements of the alert functions and aircraft support in a balanced approach and in an isolated location. This site allows for facility reuse and reduction of the number of buildings past their prescribed longevity.

Alternative 1 consists of four new developments:

- Armory
- 12-Bay hanger/HELO/OPS
- TRF vehicle barn
- Storage facility

Existing buildings can be used for the Alert Facility/TRF. Along with building construction, the development of new walkways, curbs, and paved parking for POV/TRF and aircraft (rotary and fixed wing) will be integrated into the proposed plans seen in **Figure 2-3**. Alternative 1, provides flexible phasing for future development of projects within the alternative parking apron (APA) and for facility infill along the ramp. The main advantages to this alternative provide for the most immediate aircraft support needs and taxi-through parking, saving approximately 7,000 man-hours per year compared to existing conditions and adequate distance between the OPA for helicopter operations and base support. Disadvantages include remaining unmet aircraft support needs, the interference with B-52 operations due to helicopter storage on the APA, and tight proximity of two different aircraft types (rotary and fixed wing). For these reasons, Alternative 1 was not chosen as the preferred alternative. Similar to the Preferred Alternative, Alternative 1 may also encounter unknown environmental hazards and increased construction costs as a result of potential subsurface pockets of fuel contamination.

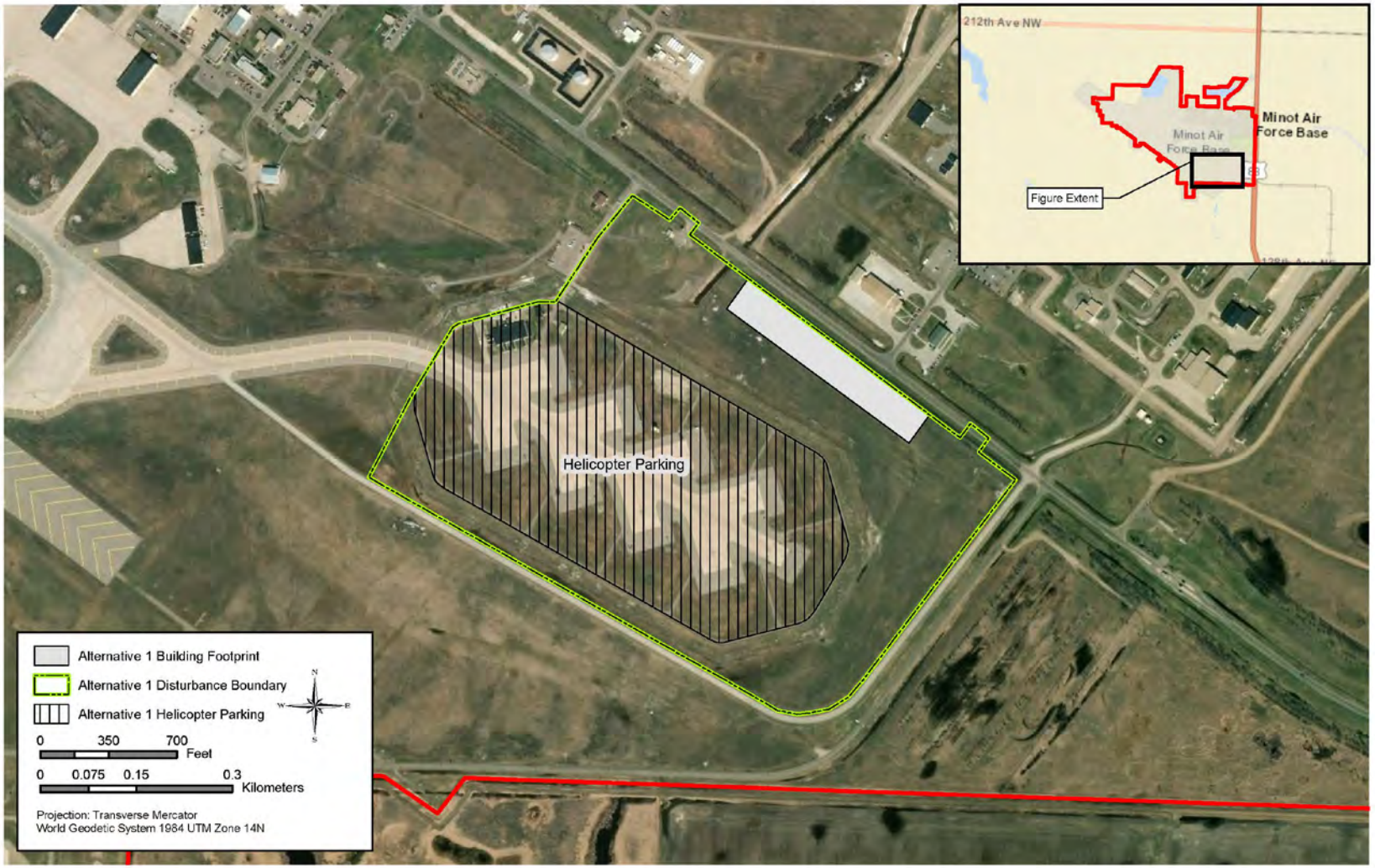

Figure 2-3: Overall Site Plan for Alternative 1

2.3.4 Alternative 2

Alternative 2 was considered for Flightline District 4A with a "Green Grass" development approach that emphasizes consolidation, a campus-like design concept, and added operational safety. This alternative is located on the south end of Flightline District 4A, southeast of Summit Drive and southwest of Bomber Boulevard. The concept of this alternative improves the fixed wing ability to move in a less constricted manner due to its isolated location from rotary wing aircraft on the south side of the airfield.

Some of the considerations for this alternative included: unit integrity and consolidation, reduced reaction times, travel distance/use of time, and future MPA/OPA enhancements. The site plan for this alternative is shown in **Figure 2-4**.

Alternative 2 consists of four new facilities:

- Armory
- Combined alert/OPS/12-bay hangar
- TRF vehicle barn
- Storage facility

All Alternative 2 facilities are situated in a quadrilateral (four-sided) orientation.

While Alternative 2 creates a self-contained campus-like environment, this setting can also create possible disadvantages, namely isolation of the facility from the mission support activities and community amenities. Further, there would be an increased distance between the rotary and fixed wing facilities that will be located on opposite ends of the airfield. Nonetheless, Alternative 2 also provides the same advantages seen in Alternative 1 in that 1) this concept meets immediate aircraft support needs 2) the median paving (thus eliminating the need for pushbacks) saves around 7,000 man-hours per year, 3) and has the ability to house all ESR and TRF activities within a single facility. Disadvantages include increased cost due to the lack of reuse of existing facilities and the increase in ground disturbance for infrastructure (gas, electrical, water, and sewer) installation, inadequate time to meet all aircraft needs, distance between the OPA for helicopter operations and base support, as well as the close placement to the installation boundary. For these reasons, Alternative 2 was not chosen as the preferred alternative. Similar to the Preferred Alternative and Alternative 1, Alternative 2 also contains the possibility to encounter unknown environmental hazards resulting in increased construction costs as a result of potential subsurface pockets of fuel contamination.

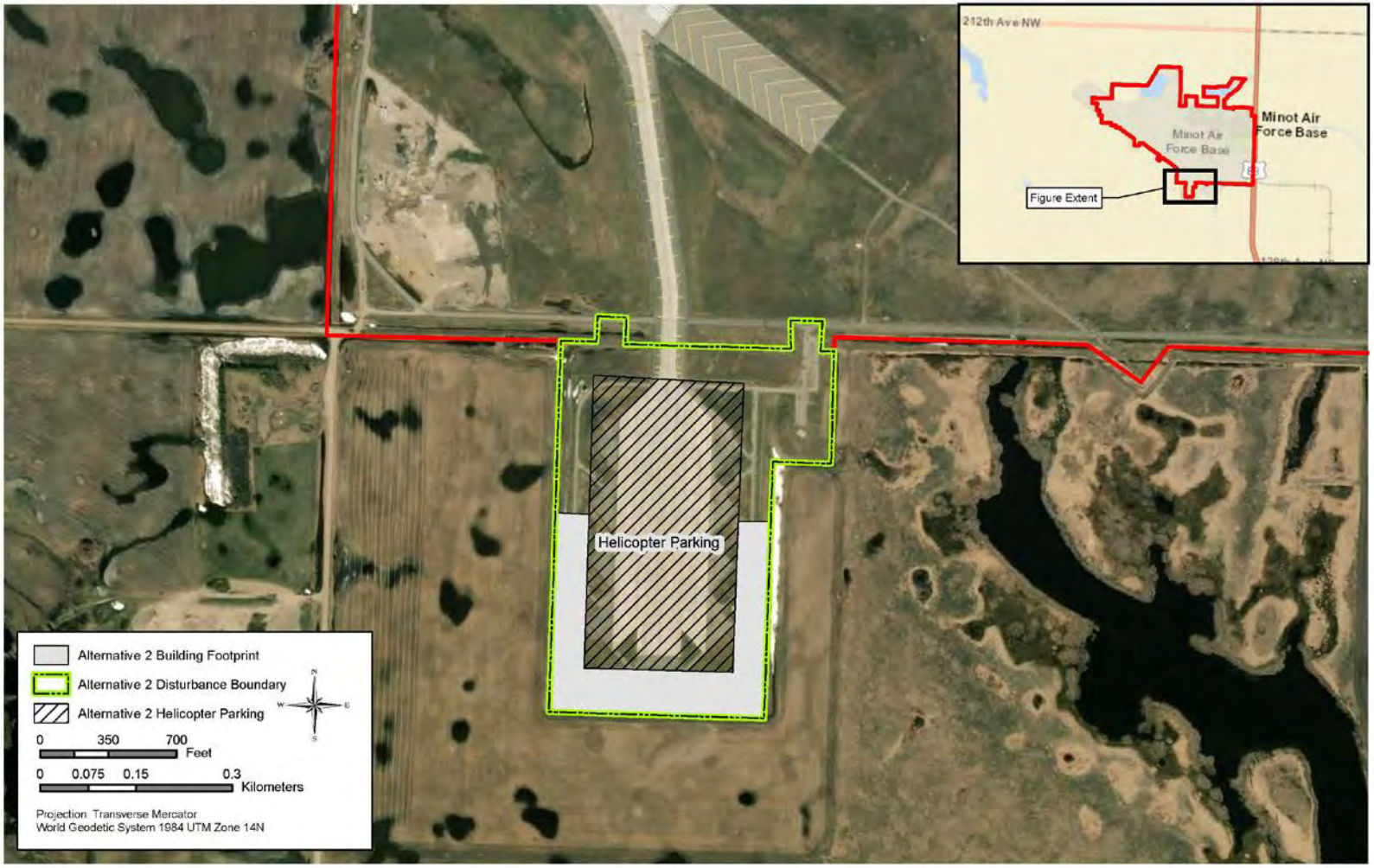

Figure 2-4: Overall Site Plan for Alternative 2

2.3.5 The No Action Alternative

The CEQ requires the analysis of the No Action Alternative to serve as a baseline from which the Proposed Action and alternatives can be evaluated. Under the No Action Alternative, Minot AFB would not implement the Proposed Action. The No Action Alternative would not include the construction of any new buildings or structures, but the 54th HS, 582nd HG and TRF personnel would continue to use what is currently in place. The current layout of the 54th HS, 582nd HG and TRF facilities is found on **Figure 2-5**. The helicopter and TRF operations are executed in six different facilities at Minot AFB, which is not conducive to effective operations and may cause delays in response times. For example, the current travel distance from the building that houses the 91st SFS to the building that houses the helicopter hanger is 1.2 miles.

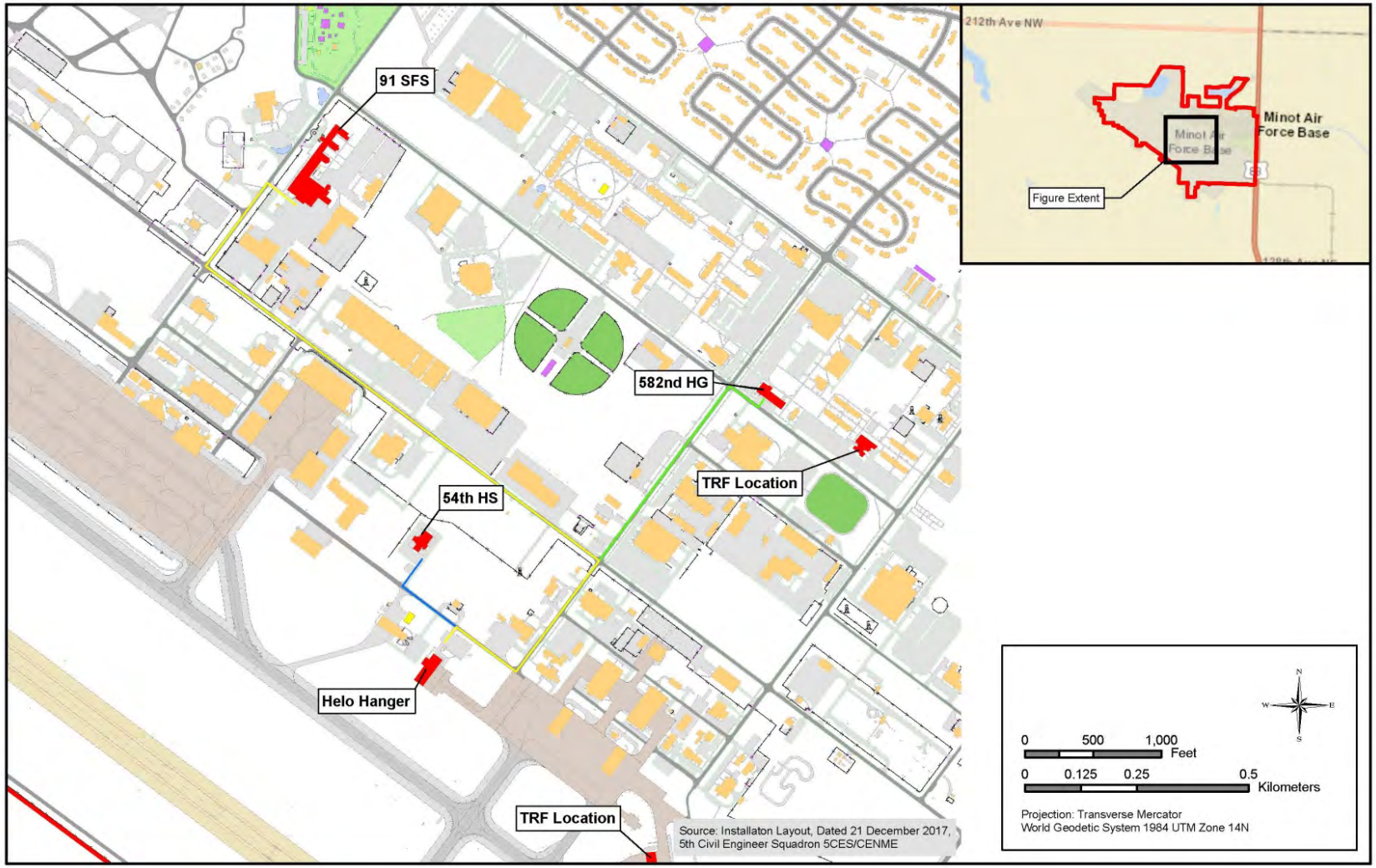

Figure 2-5: Location of Existing Facilities

2.3.6 Alternatives Eliminated from Further Consideration

Multiple variations of the layout of the consolidated facility within the general vicinity of the Preferred Alternative were considered, as mentioned in the Military Construction Planning Charrette Report for the Consolidated HELO/TRF OPS/AMU and Alert Facility at Minot AFB. Several alternatives for the consolidated building layout were developed. The Proposed Action building layout, as shown on **Figure 2-2**, was chosen as the most efficient building design. These building layout alternatives are not included for analysis in this EA because there is no environmental impact difference associated with building design.

2.3.7 Alternatives Comparison Summary

Table 2-1 provides a comparison of the Preferred Alterative and alternatives as they relate to the Selection Standards.

Table 2-1

Alternative Comparison Summary

Alternative Description	Selection Standards				
	Suitable Area in proximity to HELO Pad	Minimize Infrastructure Construction Costs and Disturbances	Minimize B-52 Airfield Operations	Ability to Provide Single Facility for ESR and TRF	Provide Adequate Distance Between OPA and HELO Ops and Support
	(1)	(2)	(3)	(4)	(5)
Preferred Alternative	Yes	Yes	Yes	Yes	Yes
Alternative 1	Yes	No	No	Yes	Yes
Alternative 2	No	No	Yes	Yes	No
No Action Alternative	No	Yes	No	No	No

3.0 AFFECTED ENVIRONMENT

3.1 SCOPE OF THE ANALYSIS

This section presents a description of the environmental resources and baseline conditions that could be affected by the Proposed Action and Alternatives. All potentially relevant resource areas were initially considered for analysis in this EA. In compliance with NEPA, CEQ, and EIAP 32 CFR Part 989 guidelines, the following discussion of the affected environment and environmental consequences focuses only on those resource areas considered potentially subject to impacts and with potentially significant environmental issues.

This section includes noise, air quality, land use, airspace management, water resources, biological resources, safety and occupational health, utilities and infrastructure, hazardous materials and wastes, and cultural resources. Some environmental resources that are often analyzed in an EA have been omitted from this analysis. The basis for their exclusion is as follows:

- ***Coastal Zone Management.*** Minot AFB is not within a coastal zone and, therefore, implementation of the Proposed Action would not alter coastal zone resources. Accordingly, the USAF has omitted detailed examination of coastal zone management.
- ***Geologic Resources.*** There are no geological resources located within the Proposed Action that would be adversely affected. All action alternatives will occur within the boundaries of Minot AFB, in an area surrounded by base development. None of the action alternatives require any subsurface work that could potentially affect geological resources nor would they increase any risk of geologic resource impacts (e.g., earthquakes, slope stability, etc.) given the low earthquake probability in this portion of North Dakota. However, this EA does consider potential impacts of the action alternatives on soils and topography.
- ***Socioeconomics/Environmental Justice.*** All action alternatives will occur within the boundaries of Minot AFB, in an area surrounded by base development. Accordingly, the USAF has omitted detailed examination of socioeconomics and environmental justice.
- ***Visual/Aesthetic Resources.*** The Proposed Action does not involve any activities that would significantly alter the aesthetic qualities of the area or landscape. The Proposed Action would be consistent with the current characteristic features of the area and landscape. Accordingly, the USAF has omitted detailed examination of visual/aesthetic resources in this EA.

The impact analyses consider all alternatives discussed in Section 2 identified as reasonable for meeting the purpose of and need for action. These alternatives include the following:

- The Proposed Action (described in Section 2.3.2)
- Alternative #1 (described in Section 2.3.3)
- Alternative #2 (described in Section 2.3.4)
- The No Action Alternative (described in Section 2.3.5)

Sections 3.2 through 3.11 discuss the affected environment for each resource evaluated in Section 4.0.

3.2 NOISE

3.2.1 Definition of the Resource

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as unwanted or disturbing sounds that interfere with communication, pose a threat to human health, or are irritating (USEPA 2015). Noise can be identified without difficulty, be persistent or temporary, be predictable or random, and involve a number of varying sources and frequencies. Human response to noise depends upon the source, characteristics of the sound source, distance between the source and the receptor, sensitivity of the receptor, and the time of day. Affected receptors can be specific (e.g., schools, churches, hospitals) or broad areas (e.g., nature preserves, designated districts).

***Noise Metrics*.** Sound, within the range of human hearing, can vary in intensity by more than one million units. Therefore, a logarithmic scale, known as the decibel scale, is used to quantify sound intensity and to compress the scale to a more manageable range. Sound is characterized by both its amplitude (i.e., how loud it is) and frequency (i.e., pitch). The human ear does not hear all frequencies equally. In fact, human hearing organs of the inner ear deemphasize very low and very high frequencies. “A-weighted” decibels (dBA) are used to reflect this selective sensitivity of human hearing by putting more weight on the range of frequencies where the average human ear is most sensitive, and less weight on those frequencies we do not hear as well. The human range of hearing extends from approximately 3 dBA to around 140 dBA. Considering this range, it is important to understand that to the human ear, an increase in noise levels of 10 dBA is perceived to be twice as loud. Day-Night-Average A-weighted Noise Level (DNL) is a cumulative exposure metric that describes noise over a 24-hour period that adds an artificial 10 dBA to nighttime (10 p.m. to 7 a.m.) noise events occurring due to the drop in community background noise during this timeframe. DNL is a useful descriptor for noise because it averages ongoing, yet intermittent, noise and it measures total sound energy over a 24-hour period.

Noise Regulations. The federal government established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. One such regulation is the Noise Control Act of 1972, which serves "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare" (USEPA 1974). The Federal Interagency Committee on Noise has developed land use compatibility guidelines for noise. These guidelines provide the maximum DNLs that are compatible with various land uses.

The Noise Control Act of 1972 establishes that the Occupational Safety and Health Administration (OSHA) must set workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA, and exposure to this level must not exceed 15 minutes within an 8-hour period.

The DoD Air Installation Compatible Use Zones (AICUZ) Program establishes guidelines that "promote the health, safety, and welfare of persons in the vicinity of, and on, air installations by minimizing aircraft noise and safety impacts without degrading flight safety and mission requirements" (DoD 2011). AICUZ describes existing aircraft noise and flight safety zones on and near USAF installations.

The State of North Dakota provides regulations for highway traffic and construction noise in the North Dakota Department of Transportation's noise policy (NDDOT 2011). This policy implements the noise standards of the Federal Highway Administration. The State of North Dakota sets no further standards on noise.

Ambient Noise Levels. Ambient noise is defined as the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources, near and far. Noise level is dependent upon the surrounding environment (e.g., nearby airports, heavy traffic, open space) and the density of people. Most individuals are exposed to sounds reaching 50 to 55 dBA or higher each day. **Table 3-1** displays noise levels in dBA, common sounds associated with that level, and the effect that noise level typically has on humans.

Table 3-1

Level and Human Responses

Noise Level (dBA)	Common Sounds	Effect
10	Just Audible	Negligible
30	Soft Whisper (15 Feet)	Very Quiet
50	Light Auto Traffic (100 Feet)	Quiet

Noise Level (dBA)	Common Sounds	Effect
60	Air Conditioning Unit (20 Feet)	Intrusive
70	Noisy Restaurant or Freeway Traffic	Telephone Use Difficult
80	Alarm Clock (2 Feet)	Annoying
90	Heavy Truck (50 Feet) or City Traffic	Very Annoying Hearing Damage (8 Hours)
100	Garbage Truck	Very Annoying
110	Pile Drivers	Strained Vocal Effort*
120	Jet Take-Off (20 Feet) or Auto Horn (3 Feet)	Maximum Vocal Effort
140	Carrier Deck Jet Operation	Painfully Loud

Source: USEPA 1981

Note: * HDR interpolation

Demolition and Construction Sound Levels. Construction can cause increases in sound levels well above the ambient level. A variety of different sounds are generated by graders, pavers, trucks, welders, and other equipment and work processes depending on the type of construction activity that is occurring. **Table 3-2** lists sound levels associated with common types of construction equipment. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban area.

Table 3-2

Typical Noise Level for Construction Equipment

Equipment	Typical Noise Level (dBA) 50 Feet from Source
Air compressor	81
Backhoe	80
Compactor	81
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane mobile	83
Dozer	83
Generator	81

Equipment	Typical Noise Level (dBA) 50 Feet from Source
Grader	85
Impact wrench	85
Jack hammer	88
Loader	85
Paver	89
Pile driver (Impact)	101
Pneumatic tool	85
Pump	76
Roller	74
Saw	76
Truck	88

3.2.2 Description of the Affected Environment

The ambient noise environment around Minot AFB is dominated by aircraft operations and automobile traffic. Minot AFB supports approximately 12,900 airfield operations per year, and the noise generated by these operations is a dominant characteristic of the baseline noise environment at, and in the vicinity of, the installation. Minot AFB is home to the 5th BW and the 91st MW; aircraft flown by these units include the B-52H Stratofortress aircraft and the UH-1N helicopter. The noise contours from aircraft operations at Minot AFB are shown in **Figure 3-1** and extend roughly northwest and southeast along the runway. Vehicles also contribute to the ambient noise environment at Minot AFB. Vehicle use for military operations and support functions consists of passenger vehicles, delivery and fuel trucks, and other military vehicles. Passenger and TRF vehicles compose most of the vehicles present within the Proposed Action area. Summit Drive and Bomber Boulevard provide access to the installation through the northern and southern gates, respectively, from U.S. Highway 83. Considering the military aircraft operations and vehicle traffic at and adjacent to Minot AFB, the ambient sound environment around the installation is likely to resemble an urban atmosphere.

3.3 AIR QUALITY

3.3.1 Definition of the Resource

In accordance with federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The measurements of these “criteria pollutants” in ambient air are expressed in units of parts per million (ppm), milligrams per cubic meter (mg/m^3), or micrograms per cubic meter ($\mu g/m^3$).

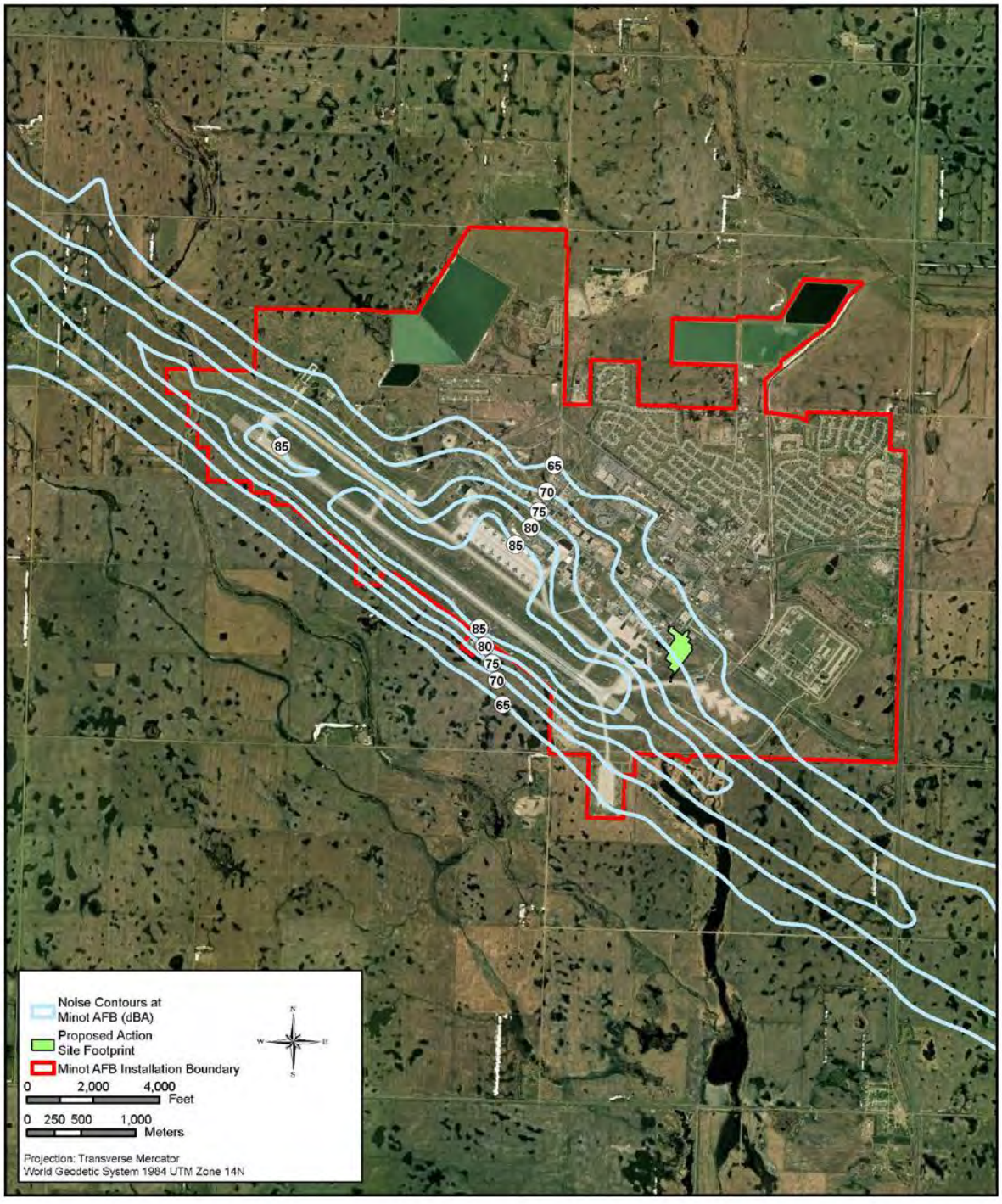

Figure 3-1. Noise Contour Map for Flightline District 4A, Minot ND

The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

Ambient Air Quality Standards. Under the CAA, the U.S. Environmental Protection Agency (USEPA) developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), to protect public health and welfare. These standards represent the maximum allowable ambient concentrations of the six criteria pollutants as shown in **Table 3-3**. Primary NAAQS provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary NAAQS provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The State of North Dakota has adopted all federal NAAQS by reference. **Table 3-3** presents the USEPA NAAQS for federally listed criteria pollutants and the North Dakota standards.

Although ozone (O_3) is considered a criteria pollutant and is measurable in the atmosphere, its emissions are not often calculated because it is typically not emitted directly from most emissions sources. Regulatory agencies attempt to limit atmospheric O_3 concentrations by controlling nitrogen oxides (NO_x) and volatile organic compound (VOC) emissions.

Table 3-3

National and State Ambient Air Quality Standards

Pollutant [links to historical tables of NAAQS reviews]	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	primary	8 hours	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 µg/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

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 $\mu g/m^3$	Annual mean, averaged over 3 years
		secondary	1 year	15.0 $\mu g/m^3$	Annual mean, averaged over 3 years
		primary and secondary	24 hours	35 $\mu g/m^3$	98th percentile, averaged over 3 years
	PM_{10}	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

Sources: USEPA 2018, NDAC 2016

Notes:

(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 SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Key:

$\mu g/m^3$ = micrograms per cubic meter
CO = carbon monoxide
mg/m^3 = milligrams per cubic meter
NO_2 = nitrogen dioxide
O_3 = ozone
Pb = lead
PM_{10} = particulate matter less than 10 microns
$PM_{2.5}$ = particulate matter less than 2.5 microns
ppm = parts per million
SO_2 = sulfur dioxide

Attainment Versus Nonattainment. USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR (e.g., counties), according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either "attainment," "nonattainment," "maintenance," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an area is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and unclassified means that there is not enough information to appropriately classify an area, so the area is considered to be in attainment. In accordance with the CAA, each state with nonattainment areas must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

General Conformity. The General Conformity Rule applies only to significant federal actions in nonattainment or maintenance areas. This rule requires that any federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

Greenhouse Gas Emissions. Greenhouse gases (GHG) are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Human-caused GHGs are produced primarily by the burning of fossil fuels and through industrial and biological processes. The most common GHGs emitted from human activities include carbon dioxide (CO_2), methane, and nitrous oxide. Although GHGs are not currently regulated under the CAA, the USEPA has clearly indicated that GHG emissions and climate change are issues that need to be considered in future planning.

3.3.2 Description of the Affected Environment

Minot AFB is located in Ward County, within North Dakota AQCR 172. As defined in 40 CFR 81.335, Ward County is designated as attainment/unclassifiable for all criteria pollutants (USEPA 2015).

The North Dakota Department of Health (NDDH) regulates air quality for the State of North Dakota. Minot AFB is classified as a major source of emissions and has an Air Pollution Control Title V Permit to Operate (MAFB 2007a). The NDDH requires Minot AFB to calculate annual criteria pollutant emissions from stationary sources and provides this information to the NDDH. There are various sources on the installation that emit criteria pollutants and Hazardous Air Pollutants (HAPs), including generators, boilers, fuel storage tanks, and miscellaneous chemicals used.

3.4 LAND USE

3.4.1 Definition of the Resource

Land use refers to real property classifications that describe the human activity or natural conditions within a property. Land use descriptions are typically codified into local zoning laws. The local control and the lack of a national standard or uniform terminology for describing land use categories leads to definitions that vary for each land use category among jurisdictions. There is a wide variety of land use categories resulting from human activity. USAF installation land use planning commonly uses 12 general land use classifications: Airfield, Aircraft Operations and Maintenance, Industrial, Administrative, Community (Commercial), Community (Service), Medical, Housing (Accompanied), Housing (Unaccompanied), Outdoor Recreation, Open Space, and Water (USAF 1998).

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. The USAF has a comprehensive planning process that uses functional analysis to determine the degree of connectivity among installation land uses and between installation and off-installation land uses (USAF 1998).

It is DoD policy to "promote long-term compatible land use on and in the vicinity of air installations." This is accomplished through the implementation of compatible land use regulations by cooperating state and local governments and partnerships with communities through the use of restrictive land and conservation easements.

When necessary, the location and extent of a Proposed Action must be assessed to determine potential effects on a project site and adjacent land use properties. A Proposed Action must be in compliance with any applicable land use or zoning regulations. Other important factors to consider are the land use of the project site, the proximity and classification of adjacent land use types, and the duration and permanence of the activities associated with an action.

3.4.2 Description of the Affected Environment

Surrounding Off-Installation Land Use. Minot AFB is surrounded by a native prairie grasslands ecosystem that has been highly disturbed by agricultural and ranching activities over the past 100 years. Certain natural resources on Minot AFB, such as vegetation, wildlife, and soils, are an extension of the native prairie and agricultural ecosystem. However, because of the construction and human activities on Minot AFB over the past 50 years, the character of the ecosystem on Minot AFB has been greatly modified, and any remaining native prairie habitats have been mostly replaced with developed uses and some open space.

Minot AFB is in Waterford and Tatman townships in Ward County, North Dakota. It is approximately 2 miles north of Ruthville, an unincorporated community, and approximately

13 miles north of the City of Minot. Access to Minot AFB is via U.S. Highway 83, which forms the installation's eastern boundary. The installation is surrounded by rural agricultural and open space areas with some rural residences. The only land use that is allowed adjacent to Minot AFB is agricultural, and new construction is prohibited within a 3-mile radius of the installation boundary (USAF 2008).

On-Installation Land Use. Minot AFB covers 5,080 acres and has an average population of 12,807 including active duty personnel, family members, DoD civilian employees, non-appropriated fund employees, contract civilians, and private business employees. 41 percent (5,278) of the population live on base. Minot AFB is home to two major USAF units (5th BW and 91st MW) and several major tenants.

The *Minot AFB General Plan* identifies 13 land use categories: Administrative, Aircraft Operations and Maintenance, Airfield and Airfield Pavements, Community (Commercial), Community (Services), Housing (Accompanied), Housing (Unaccompanied), Industrial, Medical, Missile Operations and Maintenance, Open Space, Outdoor Recreation, and Water (USAF 2008) (see **Figure 3-2** for current land use; see **Figure 3-3** for future land use at MAFB which includes Missile Operations and Maintenance).

The remaining primary land uses are scattered throughout the base. In addition to the 13 designated land uses, grazing is permitted in specific areas of Minot AFB through the agricultural lease program.

Future land uses anticipated by Minot AFB account for the continued process of developing Minot AFB to better support current missions, provide flexibility to accept new missions and units, and improve the quality of life for base personnel. The major difference between the current and future land use designations at Minot AFB is the development of Missile Operations and Maintenance and the reduction of Open Space uses by approximately 1,000 acres due to increases of Industrial, Aircraft Operations and Maintenance, Airfield and Airfield Pavement uses (MAFB 1995).

3.5 TOPOGRAPHY AND SOILS

3.5.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic region, these resources typically are described in terms of geology, topography/ physiography, and soils. As indicated in Section 3.1, only topography and soils are described below.

3.5.2 Description of the Affected Environment

Topography/Physiography. Minot AFB lies within the Northern Great Plains Province, which is characterized as a vast plain tilting towards the east (MAFB 2009a). The area surrounding Minot

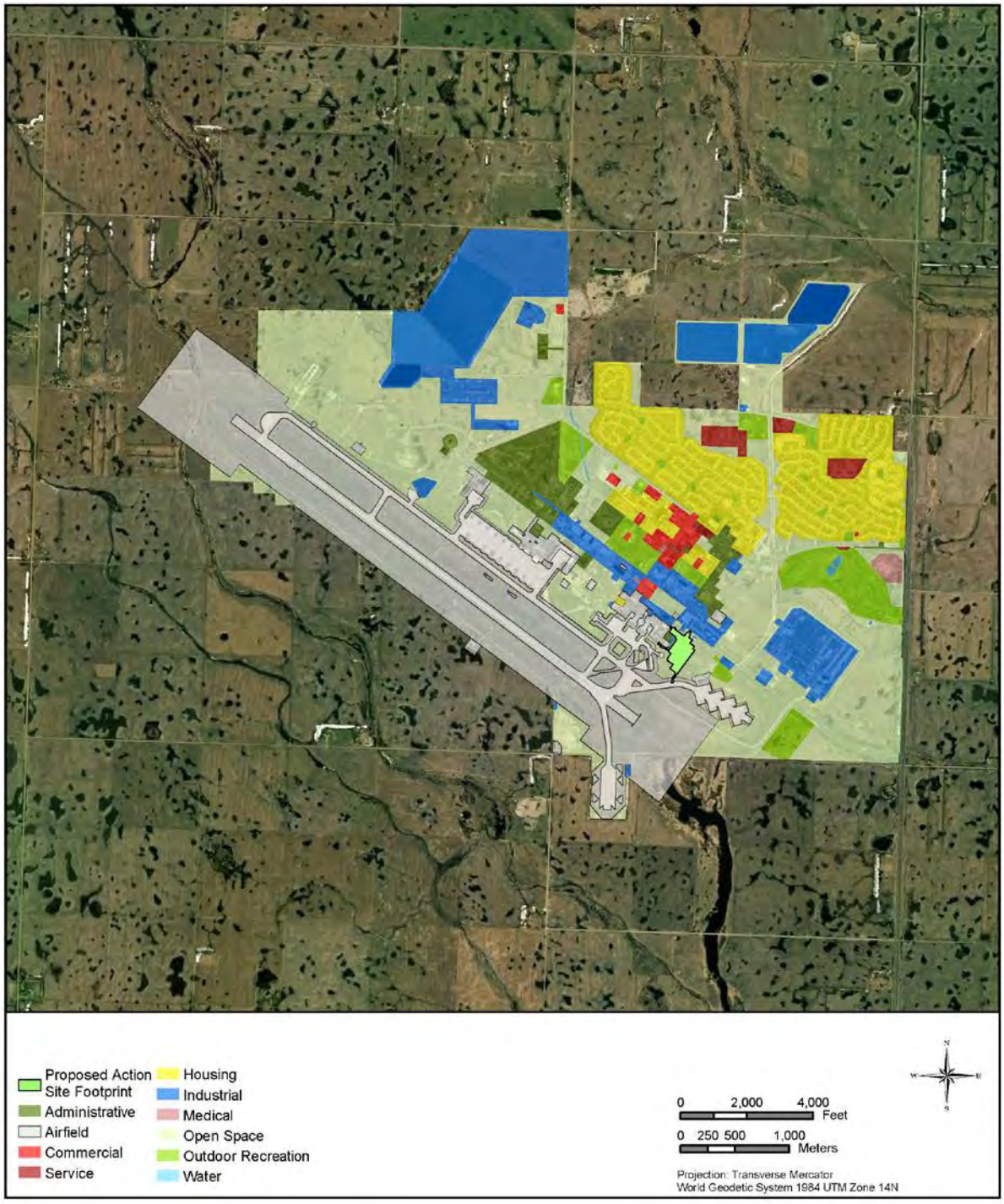

Figure 3-2. Existing Land Use at Minot AFB

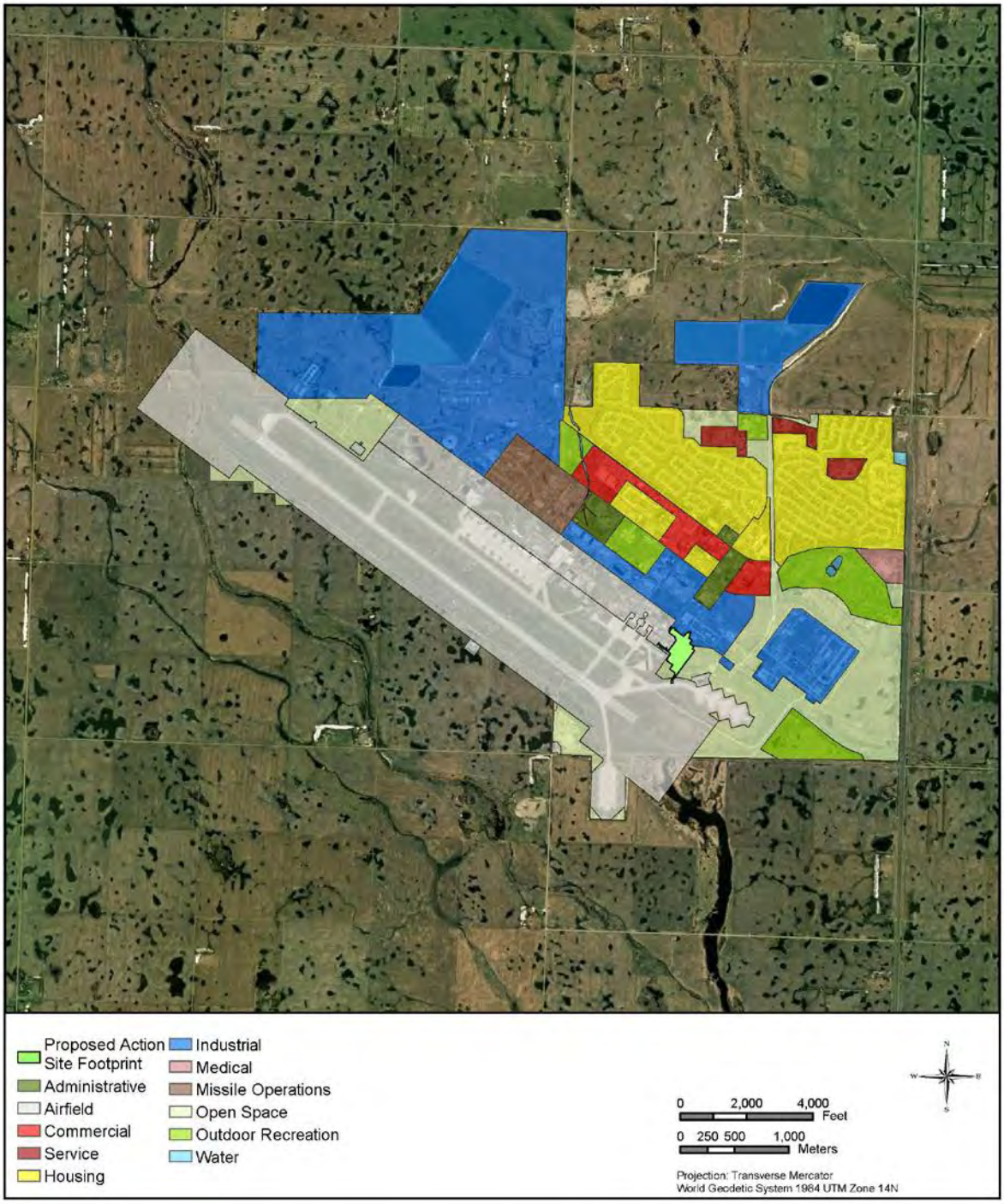

Figure 3-3. Future Land Use at Minot AFB

AFB is relatively flat, with elevations ranging from approximately 1,590 feet above mean sea level (msl) in the northeastern corner of the installation near Egg Creek to about 1,680 feet above msl in the northwestern corner. Thus, the maximum elevation change across the entire installation is approximately 90 feet. Small, poorly drained depressions occur sporadically on the installation, primarily in the northwestern corner. The average slope is less than 1 percent in a northeastern direction (MAFB 2009a).

Soils. Most of the surface soils within the proposed project area belong to the Barnes-Svea Association. They are well-drained, nearly-level, black loamy soils which formed from glacial till (NRCS 2018, MAFB 1995). The average topsoil depth on Minot AFB is approximately eight inches. The entire site has been mapped by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS).

3.6 WATER RESOURCES

3.6.1 Definition of the Resource

Water resources can be natural (e.g., streams, creeks, lakes, groundwater aquifers, etc.) or man-made (ditches, reservoirs, ponds, etc.) that are available for use by, and for the benefit of, humans and the environment. Water resources relevant to Minot AFB's location in North Dakota include groundwater, surface water, floodplains, and wetlands. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.

Groundwater. Groundwater systems are sources of water that result from precipitation infiltrating the ground surface. An aquifer is a permeable geological formation that stores or transmits water to wells and springs. When groundwater is close to the ground surface, it can contribute to inflow to streams, rivers, lakes, ponds, or wetlands. This exchange between surface water and groundwater is an important feature of the hydrologic (water) cycle. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations.

Groundwater quality and quantity are regulated under several programs. The Federal Underground Injection Control regulations, authorized under the Safe Drinking Water Act (SDWA), require a permit for the discharge or disposal of fluids into a well. The Federal Sole Source Aquifer regulations, also authorized under the SDWA, protect aquifers that are critical to water supply.

Surface Water. Surface water is generally classified as streams (ephemeral, intermittent, or perennial), springs, wetlands, natural and artificial impoundments (ponds and lakes), and constructed drainage canals and ditches. Storm water is also an important component of surface water systems because of its potential to introduce sediments and other contaminants that could degrade lakes, rivers, and streams.

Waters of the United States are protected under the Clean Water Act (CWA), Section 404, administered by the USEPA and the U.S. Army Corps of Engineers (USACE). In general, Waters of the United States include navigable waters and tributaries and adjacent wetlands. Other water bodies can be jurisdictional on a case-by-case basis. All encroachment (e.g. excavating, draining or filling) into waters of the United States and wetlands requires a permit from the federal government and/or the state. Section 3.6 provides a discussion of wetland habitat occurring within the action areas and adjacent wetlands that might be affected by the actions being considered.

In addition to Section 404 of the CWA, Section 401 establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES), on the amounts of specific pollutants that are discharged to surface waters to restore and maintain the chemical, physical, and biological integrity of the water. The NPDES program regulates the discharge of point (end of pipe) and nonpoint (storm water) sources of water pollution and requires a permit under Section 402 for any change in the quality or quantity of wastewater discharge or storm water runoff from construction sites where one or more acres would be disturbed.

Floodplains. The Federal Emergency Management Agency (FEMA) defines a floodplain or flood-prone area as "any land area susceptible to being inundated by water from any source" (44 Code of Federal Regulations [CFR] 59.1) (FEMA, 2000). Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters. Floodplains provide a broad area to spread out and temporarily store floodwaters. This reduces flood peaks, velocities and the potential for erosion. In a natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body (FEMA 1986).

Risk of flooding is typically related to local topography, the frequency of precipitation events, the size of the watershed above the floodplain, and upstream development. The flood potential evaluated by FEMA defines 100-year and 500-year floodplains. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year, while 500-year floodplains have a 0.2 percent chance of inundation in a given year. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

EO 11988, Floodplain Management, requires federal agencies to determine whether a Proposed Action would occur within a floodplain. This determination typically involves consultation of FEMA Flood Insurance Rate Maps, which contain enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs federal agencies to avoid floodplains to the maximum extent possible wherever there is a practicable alternative.

Wetlands. Wetlands are a type of surface water and an important natural system and habitat because of their diverse biologic and hydrologic functions. Wetlands have several hydrologic functions, including water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, storm water attenuation and storage, sediment detention, wildlife habitat provision, and erosion protection. As previously discussed, Waters of the United States, which include wetlands, are protected under Section 404 of the CWA.

In addition to requiring issuance of a 404 permit for wetland fills, Section 401 of the CWA also requires that North Dakota provide water quality certification for any 404 permit issued. North Dakota relies on Section 401 water quality certification as its primary form of state-level wetlands regulation. The Section 401 program is administered by the NDDH/Division of Water Quality (DWQ). In making certification decisions, the NDDH/DWQ is primarily concerned with the construction and environmental disturbance requirements pertaining to soils, surface waters, and fill materials. A non-regulatory agency policy document requires that "fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage." If a project does not meet this and other minimum requirements of the NDDH/DWQ, the permit is denied, and necessary conditions are communicated before re-application (ELI 2008).

3.6.2 Description of the Affected Environment

Groundwater. The flow direction of shallow groundwater at Minot AFB is likely influenced by nearby bodies of water and the general surface topography. Therefore, based upon existing topographic contours it is believed that that the direction of groundwater flow on most areas of Minot AFB is to the south-southwest, away from Egg Creek. The direction of groundwater flow on the southern and western ends of the installation is to the south, toward Livingston Creek (MAFB 1995). There are no major sources of groundwater at Minot AFB. The Sundre aquifer runs under the City of Minot, stretches to the north, for approximately 2 miles, and moves southeast to the Ward County line. The Minot aquifer follows the course of the Souris River. Recharge of both aquifers is derived largely from stream infiltration and precipitation.

Surface Water. Minot AFB is located within the Souris River basin. Surface water in and surrounding Minot AFB includes rivers, streams, numerous wetlands, and six sewage lagoons (see **Figure 3-4**). Despite the Souris and Des Lacs rivers being the only perennial streams in Ward County, neither river flows closer than 6 miles of Minot AFB. Surface water runoff from the installation is not impounded but is generally directed to one of two man-made drainage ditches which route the flow northeast toward Egg Creek. The drainage ditches are not used for any purpose other than natural contribution to surface water and overland flow within the Souris River Basin and groundwater recharge. Storm water runoff from open spaces, landscaped areas, runways, hardstands, streets, yards, and developed areas is managed at Minot AFB by a system

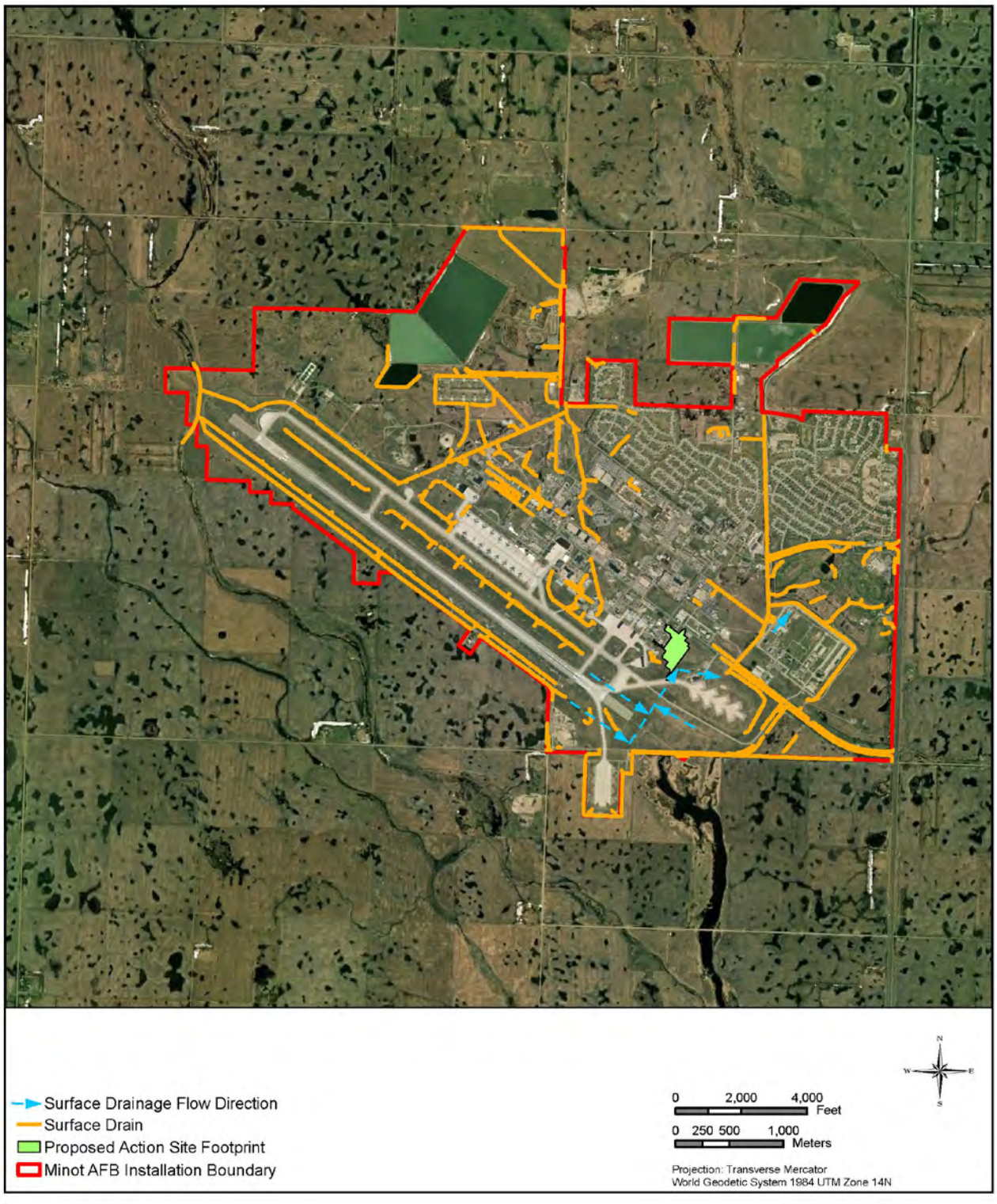

Figure 3-4. Surface Water Drainage at Minot AFB

or network of catch basins, swales, gutters, ditches, inlets, culverts, underground drains, and man-made drainage channels (MAFB 1995).

Intermittent streams in the vicinity of Minot AFB include Little Deep Creek, Livingston Creek, and an unnamed tributary to Livingston Creek that runs through the western edge of Minot AFB. Surface water throughout Minot AFB ultimately flows into Egg Creek (a tributary of the Souris River), north of Minot AFB. Egg Creek ultimately flows into Buffalo Lodge Lake, which is 35 miles east-southeast of Minot AFB (MAFB 1995).Two storm water outfalls drain surface water at Minot AFB. These two permitted outfalls serve areas that contain industrial activities as defined by federal and North Dakota storm water regulations. Storm water from the watershed of a closed former sanitary landfill discharges along the north-central boundary of the Base into a tributary of Egg Creek. A small watershed on the southeast side of Minot AFB drains to the north under the runway through culverts to Channel A. Another small watershed on the west side of Minot AFB drains into a pond and eventually into nearby Livingston Creek (2014 MAFB).

Wetlands. In North Dakota, more than 90 percent of the wetlands in the state are prairie potholes, formed by glaciers (Herman & Johnson, 2008). Prairie potholes, sometimes called sloughs, are palustrine emergent wetlands. Palustrine wetlands are non-tidal wetlands that lack flowing water and contain less than .5 parts per thousand concentration of ocean salt.

A 2010 installation-wide wetlands survey identified approximately 170.5 acres of jurisdictional waters/wetlands, which include both natural and man-made waters (MAFB 2014). Sewage lagoons are not classified as wetlands. See **Figure 3-5** for wetland communities at MAFB.

There is a shallow drainage swale located within the proposed project area. This swale/ditch is part of the installation's stormwater drainage system. This drainage is likely to be considered a non-jurisdictional storm water drainage feature and not waters of the United States.

A formal wetland delineation of the proposed project area has not been conducted, and a jurisdictional determination has not been obtained; however, wetlands are not expected to occur in the area, based on site observations. If it is determined that wetlands or other waters of the United States might be affected as a result of the Proposed Action, then the area would be delineated, a jurisdictional determination would be obtained, and impacts would be avoided or minimized to the maximum extent practicable. All required permitting would be obtained prior to implementation of the Proposed Action. This would minimize the potential for adverse impacts on wetlands or other waters of the United States associated with the Proposed Action.

Floodplains. There are no designated 100-year floodplains contained within the boundaries of Minot AFB or in the surrounding area (MAFB 1995, FEMA 2010).

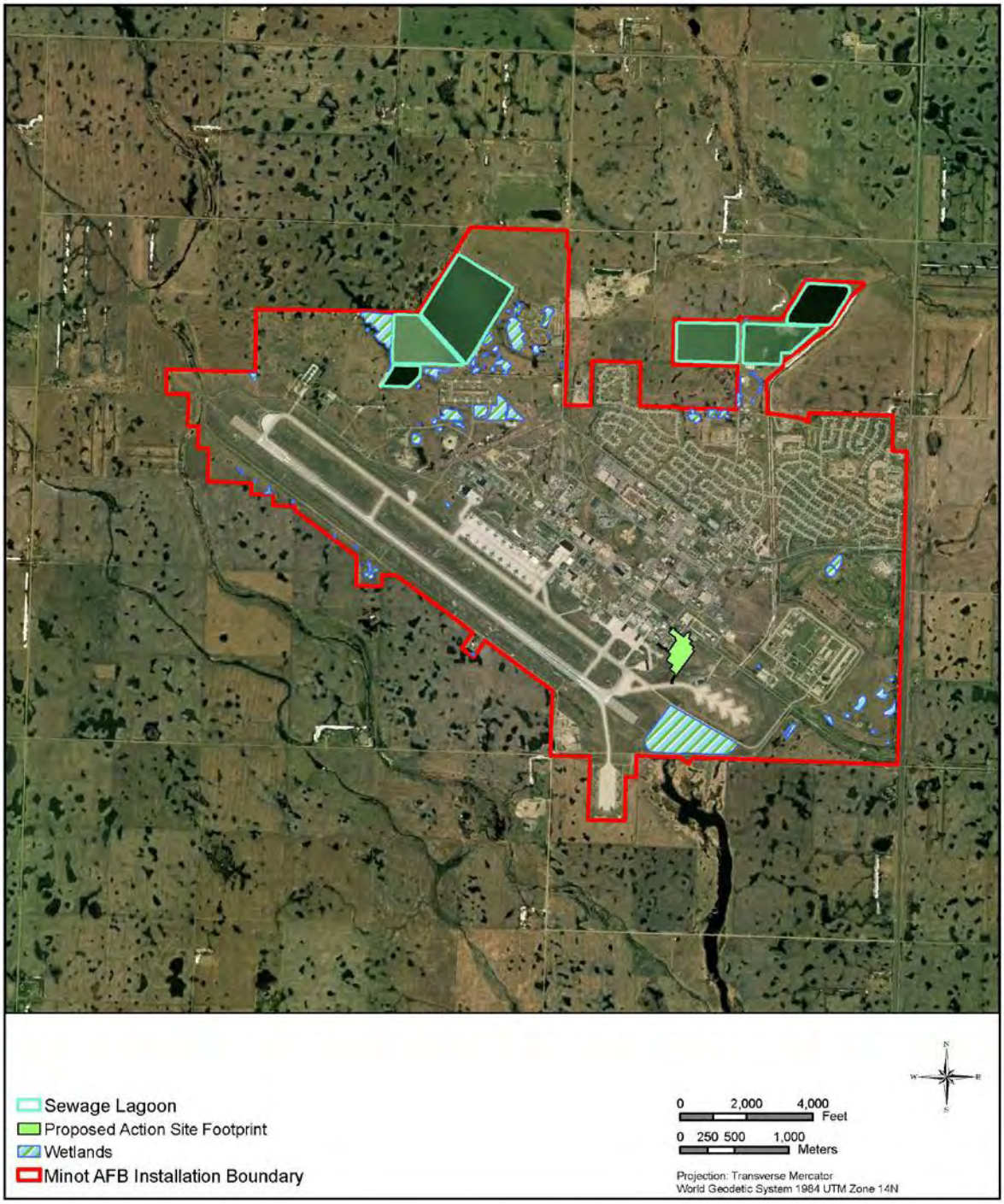

Figure 3-5. Wetland Communities at Minot AFB

3.7 BIOLOGICAL RESOURCES

3.7.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats in which they exist (e.g., grasslands, forests, and wetlands). Protected and sensitive biological resources include listed [threatened or endangered], proposed, and candidate species under the ESA (16 U.S.C. 1536 as designated by the USFWS); state-listed threatened or endangered species; and migratory birds. Sensitive habitats include those areas designated by the USFWS as critical habitats protected by the ESA and sensitive ecological areas as designated by state or federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

The ESA (16 U.S.C. § 1536) requires federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The ESA prohibits any action that causes a "take" of any listed species. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or attempt to engage in any such conduct." An "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. Although candidate species receive no statutory protection under the ESA, USFWS advises government agencies, industry, and the public that these species are at risk and might warrant protection under the ESA in the future.

The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703–712) as amended, and EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, requires Federal agencies to minimize or avoid impacts on migratory birds listed in 50 CFR 10.13.

3.7.2 Description of the Affected Environment

Vegetation. According to the U.S. Fish and Wildlife Service (USFWS), there are no federally-listed threatened, endangered, or candidate plant species that may occur or have historically occurred within Ward County, North Dakota. The Natural Heritage Division of North Dakota's Parks and Recreation Department maintains the official list of state-recognized threatened and endangered plant species. In 2011, their records indicated that three species are known or expected to occur in Ward County, but only one of those species, the Columbia watermeal (*Wolffia Columbiana*) could potentially occur on the Base. This species is aquatic and only found in non-flowing pools (Dirk, 2009).

Most of the remnant northern mixed-grass prairie on Minot AFB has been disturbed by agricultural practices and land development. Approximately 46 acres of remnant northern mixed-grass prairie still exist on Minot AFB, located south of the base golf course in an undisturbed

area. The other vegetation types on Minot AFB include urban, disturbed, wetlands, hayland, groomed (in the vicinity of the runway), and shelterbelts. Most of the land within Minot AFB has been developed for installation facilities, housing, and recreational areas. The native flora at Minot AFB has been mostly replaced, first by agricultural and ranching activities in the first part of the 20th century, and then beginning in the 1950s, by military activities. Nearly all the land was plowed or otherwise disturbed for agricultural purposes before becoming part of Minot AFB.

Minot AFB has planted a large number of trees, mostly in the form of linear shelterbelts that vary from single to multiple rows. The most common shelterbelt shrub and tree species that have been planted include Russian olive (*Elaeagnus angustifolia*), plains cottonwood (*Populus deltoides*), honey locust (*Gleditsia triacanthos*), Chinese elm (*Ulmus pumila*), caragana (*Caragana aborescens*), and blue spruce (*Picea pugens*) (MAFB 1995).

Construction and demolition activities create disturbances that can increase the spread of noxious weeds. The Federal Noxious Weed Act of 1974 (P.L. 93-629) mandates control of noxious weeds by limiting possible weed seed transport from infested areas to non-infested sites. Noxious weeds on Minot AFB include absinth wormwood (*Artemisia absinthium*) around the stables and grazing land, Canada thistle (*Cirsium arvense*) associated with the wetlands, field bindweed (*Convolvulus arvensis*) in maintained lawns and grassy areas, leafy spurge (*Euphorbia esula*) in two areas along the runway, and perennial sowthistle (*Sonchus arvensis*) associated with the wetlands (MAFB 1995). Within the Proposed Action area, some of the invasive species could be present.

Wildlife. A variety of wildlife can be found on Minot AFB. The species are those that are associated with Northern Great Plains as habitat or species adapted to urban environments, such as the urban habitats found throughout much of Minot AFB. White-tailed deer (*Odocoileus virginianus*) is the only big game species known to occur on Minot AFB. Small mammals, including coyote, badger, deer or house mouse, squirrels, etc., can also be found on Minot AFB. Species such as the mice and fox squirrel typically occur within urbanized areas. The remaining species would occur near the runway and in the open spaces or disturbed ground areas.

Several raptor species potentially occur on and near Minot AFB. Swainson's hawks (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), bald eagle (*Haliaeetus leucocephalus*), Northern goshawk (*Accipiter gentilis*), Golden eagle (*Aquila chrysaetos*), and rough-legged hawk (*Buteo lagopus*) have all been observed during the Minot Christmas Bird Count. While these species could occur anywhere on Minot AFB, they would most likely occur in areas away from concentrated human disturbance, such as the northwest portion of the base.

Several waterbird species have been found on the installation, but these species primarily occur within wetlands and near areas of open water, such as the sewage lagoons in the northern portion of Minot AFB.

Upland gamebirds, typically occurring in disturbed habitats such as crop fields and barrens, as well as undisturbed grasslands on the installation, and songbirds are all within all habitat types at Minot AFB.

Reptiles and amphibians known to occur or potentially occur on the installation include the plains garter snake (*Thamnophis sirtalis*), painted turtle (*Chysemys picta*), leopard frog (Rana *pipens*), Great Plains toad (*Bufo cognatus*), and tiger salamander (*Ambystoma tigrinum*). The turtle, toad, and salamander occur within the wetlands (MAFB 1995).

Protected and Sensitive Species. The ESA provides protection for species that have been identified as being in serious decline. According to the USFWS, there are five federally listed threatened, endangered, and candidate wildlife species that may occur or historically occurred within Ward County, North Dakota (USFWS, 2011). **Table 3-4** summarizes the federal and state listing status of each of these species. The USFWS has indicated that all of these species might occur, or have historically occurred, in Ward County; however, none are known to exist on Minot AFB (MAFB 1995). There are no critical habitats on Minot AFB (USAF 2008).

None of the federally-listed species are known to occur on the base, although piping plover, whooping crane, and Sprague's pipit could potentially occur as transients, and the Dakota skipper could occur in the remnant prairie habitat on the base. However, it is unlikely these species could be found within the proposed project area due to the lack of suitable habitat.

Table 3-4

Federally Listed Species Potentially Occurring in Ward County, North Dakota

Common Name	Scientific Name	Federal Status	State status
Whooping crane	*Grus americana*	Endangered	Presumed extirpated (nesting population)
Gray wolf	*Canis lupus*	Endangered	Presumed extirpated
Piping plover	*Charadrius melodus*	Threatened	Imperiled
Dakota skipper	*Hesperia dacotae*	Threatened	Imperiled
Sprague's pipit	*Anthus spragueii*	Candidate	Vulnerable

Sources: USFWS, 2011; Dirk, 2006.

Other listed species known to occur in Ward County that could occur on the base include yellow-breasted chat (*Icteria virens*), Northern mockingbird (*Mymus polyglottus*), Western tanager (*Piranga ludoviciana*), red-necked grebe (*Podiceps grisegena*), aragose skipper (*Atrytone arogos*

iowa), and pygmy shrew (*Sorex hoyi*) (Dirk, 2006). Of these species, only Northern mockingbirds are comparatively cosmopolitan and are probably the most likely state-listed species to occur on the base. They could occur in open space, shelterbelts, and urban/groomed areas with available trees for perching (Dirk, 2006).

The 2015 North Dakota State Wildlife Action Plan (SWAP) replaces the 2005 North Dakota Comprehensive Wildlife Conservation Strategy as the principle document for safeguarding rare and declining fish and wildlife species in North Dakota. This document is not an implementation plan but rather a strategic vision with the goal of preserving the state's wildlife diversity. North Dakota's SWAP is intended to identify species of greatest conservation priority, provide fundamental background information, strategic guidance, input from partners, and a framework for developing and coordinating conservation actions to safeguard all fish and wildlife resources. The SWAP has identified 115 species as Species of Conservation Priority which includes 47 birds, 2 amphibians, 9 reptiles, 21 mammals, 22 fish, 10 freshwater mussels and 4 insects (NDGF 2015). There are six bird species that have been documented on Minot AFB that are included in this priority list and include the Swainson's hawk, willet, lark bunting and other bird species.

Migratory birds, as listed in 50 CFR 10.13, are protected under the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703–712), as amended, and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. The vast majority of birds occurring on Minot AFB are migratory birds. Two major bird migration routes, the Mississippi Flyway and Central Flyway, cross North Dakota. Large spring and fall waterfowl migrations occur in the vicinity. The presence of water on Minot AFB (i.e., wetlands and sewage lagoons) and the Upper Souris Wildlife Refuge, approximately 7 miles west of the installation, attracts migratory waterfowl and other bird species to the vicinity (USAF 2008).

3.8 SAFETY AND OCCUPATIONAL HEALTH

3.8.1 Definition of the Resource

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

Construction Safety. Construction site safety requires adherence to regulatory requirements imposed for the benefit of employees. It includes implementation of engineering and administrative practices that aim to 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 ensure compliance with standards issued by the Federal Occupational Safety and Health Administration (OSHA), USEPA, and state occupational safety

and health agencies. These standards specify health and safety requirements, the amount and type of training required for industrial workers, the use of personal protective equipment, administrative controls, engineering controls, and permissible exposure limits for workplace stressors.

AFI 91-301, Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program, implements AFPD 91-3, Occupational Safety and Health, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet federal safety and health requirements. This instruction applies to all USAF activities.

3.8.2 Description of the Affected Environment

Minot AFB is a secure USAF military installation. Access is limited to military personnel, civilian employees, contractors, and military families. Minot AFB provides emergency services including fire, law enforcement, and other emergency response services and force protection. Therefore, emergency situations are responded to quickly.

North Dakota is characterized by extreme temperature fluctuations between seasons, light to moderate precipitation, and occasional severe weather, all of which presents challenges with respect to site personnel and worker safety. Wildfires occasionally occur in this region during summer (State of North Dakota 2013).

Construction Safety. All contractors performing construction activities are responsible for following safety regulations and worker's compensation programs and are required to conduct construction activities in a manner that does not pose any risk to workers or personnel. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and availability of Safety Data Sheets (SDS). Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operations; to monitor exposure to workplace chemicals (e.g., asbestos, lead, hazardous materials), physical hazards (e.g., noise propagation), and biological agents (e.g., infectious waste); to recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

In 2000, an asbestos containing material (ACM) survey was conducted at Minot AFB that included a visual inspection of identified areas to locate friable ACM and random sampling for asbestos analysis. Comprehensive physical sampling was not conducted during the survey

(AirTech Environmental, Inc. 2000). Results from the survey indicated that most of the ACM was identified in the industrial portions of Minot AFB. In 1994, a lead based paint (LBP) survey was conducted at Minot AFB (MAFB 2009b).

Explosives and Munitions Safety. Minot AFB has several activities that require quantity-distance (QD) explosive safety clearance zones that are established around facilities used for the storage, handling, or maintenance of munitions. QD arcs on Minot AFB are primarily in the southern and western portions of the installation. The Weapons Storage Area, Munitions Storage Area, Hot Cargo Pad, Explosive Ordnance Disposal Area, MPA, APA, Overflow Parking Apron, and Missile Handling Facility all generate significant QD arcs at Minot AFB (USAF 2008).

3.9 UTILITIES AND INFRASTRUCTURE

3.9.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure often includes human-made structures but can also include modified natural facilities (e.g., ditches) as part of the infrastructure system. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. Several utilities and infrastructure components are discussed in this section; the discussion focuses on those in close proximity to the Proposed Action area or that could be potentially affected by any project actions. In particular, the impact analysis focuses on whether impacts on existing utilities would occur as a result of either an interruption in existing service or an increase in demand as a result of the project that would necessitate upgrades to the existing service lines/facilities that accommodate expanded demand.

3.9.2 Description of the Affected Environment

Transportation. U.S. Highway 83 (US 83) serves as the primary access route to Minot AFB. There are three entrances to the installation, two of which are from US 83 and one is from 198th Street to 30th Street NW to Tanker Trail to Bomber Boulevard. The primary entrance is the Minot (South) Gate that accesses Bomber Boulevard in the southeastern corner of the installation (USAF 2008).

The primary vehicular routes on the installation include Bomber Boulevard and Summit Drive. Most of the roadways are oriented in a northeast-southwest rectangular grid pattern. Minot AFB has sufficient parking for all vehicles. The installation does not experience traffic congestion during periods of peak travel (USAF 2008).

Electrical Supply. Electrical power is supplied to Minot AFB by Verendrye Electric Cooperative. Three 41.6-kilovolt electrical feeders deliver electrical power to the installation's two electrical substations (North Substation and South Substation). The larger of the two substations is the South Substation, which is a 30 megavolt-ampere (MVA) transformer that

receives electrical power from two of the electrical feeders. The smaller substation is the North Substation, which is a 15-MVA transformer that receives electrical power from the remaining electrical feeder. Electrical demand at Minot AFB averages approximately 15 MVA and is within the capacity of the installation's electrical system (USAF 2008).

Approximately 70 percent of the installation's electrical system consists of underground lines. Most electrical lines are in good condition; however, some older electrical lines are nearing their life expectancy and have already deteriorated to the point that occasional electrical outages have occurred. Emergency electrical power is supplied to critical facilities on the installation by emergency backup generators (USAF 2008). The overall Minot AFB electrical system was evaluated and found to be in adequate condition during a 2004 system evaluation (USAF 2008).

Natural Gas Supply. Natural gas is supplied to Minot AFB by Montana-Dakota Utilities. The installation is serviced by a 6-inch diameter, steel main that delivers natural gas to the master regulator and meter house. Approximately 41 miles of 2- to 6-inch diameter pipelines extend from the master regulator to the various buildings at Minot AFB. Natural gas is used to power the installation's central heating system. A propane-air mixture system has been installed to serve as a natural gas backup or to augment supply during infrequent periods when demand exceeds supply. The overall Minot AFB natural gas system was evaluated and found to be in adequate condition during a 2004 system evaluation (USAF 2008).

Water Supply. Water is delivered to Minot AFB through a 14-inch cast iron and polyvinyl chloride (PVC) main from the City of Minot. This water main is capable of delivering a maximum of 3.2 million gallons per day (MGD); however, the installation is contractually limited to 2.5 MGD. In 2009, Minot AFB used an average of approximately 717,000 gallons of water per day. Minot AFB stores water in several underground and aboveground reservoirs. Total water storage capacity at the installation is approximately 3.3 million gallons, and includes a 250,000-gallon water storage tank (Facility No. 4046) that stores water for the military family housing areas (USAF 2008, MAFB 2009a).

There are approximately 65 miles of 3- to 14-inch-diameter water supply lines at the installation. Water flow and pressure levels are sufficient for fire protection needs (USAF 2010a). The overall Minot AFB water supply system was evaluated as in adequate condition during a 2008 system evaluation (USAF 2008).

Sanitary Sewer and Wastewater Systems. Minot AFB maintains its own sanitary sewer system and wastewater treatment center. All domestic and industrial wastewater generated at Minot AFB is collected by a network of piping. The collection system consists of collection mains, precast manholes, and sewage lift stations. The collection mains range in size from 1.5 to 24 inches in diameter and are buried at an average depth of approximately 12 feet (USAF 2010b). The wastewater treatment center consists of six treatment lagoons that have total

capacity for 345 million gallons of wastewater. Three are located in the northeast portion of Minot AFB, north of the family housing area. The other three are in the northwest portion of the Base adjoining a former sanitary landfill and open space. Treatment of wastewater is accomplished by biological destruction of organics. Treated effluent is discharged from the lagoons into Egg Creek (USAF 2008).

The overall Minot AFB wastewater system was evaluated as in adequate condition during a 2008 system evaluation (USAF 2008). Minot AFB is authorized to discharge wastewater from its treatment lagoons to surface waters under North Dakota Pollutant Discharge Elimination System (NDPDES) permit number ND-0020486. Effluent limitations for the lagoon discharge are established in the NDPDES permit (NDDH 2010).

Storm Water Drainage System. Minot AFB's storm water drainage system consists of catch basins, inlets, pipes, box culverts, and surface ditches. Storm water collected by the installation's storm water drainage system discharges into either the main, excavated, drainage ditch (Channel A) or into a natural ditch (Channel B). Both drainage ditches discharge into Egg Creek, immediately north of the installation. Localized flooding periodically occurs at several places on the installation including near the airfield control tower, tactical air navigation antenna, and Dakota Elementary School. Flooding is usually minor and is most common during the spring snow melt (USAF 2008).

Section 402(p) of the CWA states that storm water discharges associated with industrial activity to waters of the United States must be authorized by an NPDES permit. Minot AFB currently operates under an NDPDES Industrial Storm Water Permit (permit number NDR05-0315) (USAF 2010b). The permit authorizes the discharge of storm water associated with industrial activity to surface waters, in accordance with effluent limitations, monitoring requirements, and other conditions (MAFB 2005).

Communications Systems. Minot AFB uses fiber optic and copper cables to support the installation's communications system. The installation's telephone switching system has capacity for 29,000 lines, of which 6,800 are currently in service. The installation's computer data transmission system has been upgraded to a 10-gigabit Ethernet system (USAF 2008).

Solid Waste Management. There are no active landfills on Minot AFB (there is one closed landfill on the base). Solid waste generated at the installation is collected by contractors and transported to landfills in or near the City of Minot. The City of Minot landfill has approximately 5 years of permitted capacity remaining and has recently taken steps to secure additional capacity; therefore, future disposal availability is not expected to be a concern (USAF 2008). In 2008, Minot AFB generated and disposed of approximately 3,771 tons of solid waste in landfills (MAFB 2008c). Minot AFB manages a recycling program to reduce the amount of solid waste transported off-installation to landfills. Mandatory recycling has been instituted in all work areas,

and curbside recycling pickup is available in the military family housing areas (USAF 2008). In 2008, Minot AFB recycled approximately 1,387 tons of recyclable materials (MAFB 2008c). Additional recycling efforts are oftentimes included in specific construction and demolition projects.

3.10 HAZARDOUS MATERIALS AND WASTES

3.10.1 Definition of the Resource

"Hazardous materials" are defined by 49 CFR 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions" in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR Parts 105–180.

The Resource Conservation and Recovery Act (RCRA) defines a hazardous waste in 42 U.S.C. Section 6903 as a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:

(A) Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(B) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

3.10.2 Description of the Affected Environment

Hazardous Materials. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards governing procurement, issuance, use, or disposal of hazardous materials and tracking and record-keeping for public safety and for compliance with all laws and regulations. Under AFI 32-7086, the USAF has established roles, responsibilities, and requirements for a hazardous material management program (HMMP). The purpose of the HMMP is to control the procurement and use of hazardous material to support USAF missions, ensure the safety and health of personnel and surrounding communities, and minimize USAF dependence on hazardous materials. The HMMP includes the activities and infrastructure required for ongoing identification, management, tracking, and minimization of hazardous materials. AFI 32-7080, *Pollution Prevention Program*, is compliant with Federal regulations for hazardous materials management.

The Base Civil Engineer, 5th Civil Engineer Squadron is designated as the Office of Primary Responsibility for the management of hazardous materials at Minot AFB. The management of petroleum, oils, and lubricants (POL) is addressed in the Minot AFB *Spill Prevention Control and Countermeasures (SPCC) Plan* (40 CFR Part 112, *Oil Pollution Prevention).* The SPCC Plan details inspection, integrity testing, security, personnel training, spill prevention, and

documentation requirements for affected oil storage facilities on Minot AFB. The Minot AFB *Comprehensive Emergency Management Plan* addresses emergency responses related to accidental or unauthorized releases of hazardous materials. Minot AFB also maintains a SWPPP for the control of hazardous materials and petroleum products (MAFB 2008a) in stormwater associated with the industrial operations at Minot AFB.

Hazardous materials and hazardous waste are managed by Minot AFB Supply. They track all hazardous materials used at Minot AFB from "cradle to grave" using a bar code inventory control system. Authorized users are issued hazardous materials in the quantities required. Unused hazardous materials are returned to the Hazardous Materials Pharmacy (HAZMART) for reissue to other work centers, or for disposal in accordance with the Minot AFB *Hazardous Waste Management Plan*. The HAZMART also maintains the Authorized User's List, which shows all installation-level work areas authorized to use hazardous materials (USAF 2008). Hazardous materials are stored and used at approximately 58 locations throughout the installation (MAFB 2005a).

Hazardous Wastes. Minot AFB maintains a *Hazardous Waste Management Plan*, as directed by AFI 32-7042. This plan establishes the policies and procedures for compliance with applicable federal, state, and local standards for solid waste and hazardous waste management, including RCRA.

No hazardous or petroleum wastes are known to have been generated, stored, or disposed of within the proposed project area.

Environmental Restoration Program. The DoD's Environmental Restoration Program (ERP) requires each installation to identify, investigate, and clean up hazardous waste disposal or release sites. The objectives of the ERP are to identify and fully evaluate any areas suspected to be contaminated with hazardous materials caused by past USAF operations and to eliminate or control any hazards to the public health or welfare, or the environment. The Military Munitions Response Program (MMRP) addresses nonoperational military ranges and other sites that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituents. The ERP and MMRP are subcomponents of the Defense Environmental Restoration Program that became law under The Superfund Amendments and Reauthorization Act.

Minot AFB has 31 ERP sites: 9 active, 13 No Further Remedial Action Planned (NFRAP), and 9 closed. Eight of the Minot AFB active ERP sites are being investigated and cleaned up under RCRA, and one active ERP site is being investigated and cleaned up under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Decision documents, which identify the selected remedial actions, have been approved for six ERP sites, and the other 3 ERP sites are still in the investigation phase. (See **Figure 3-6**)

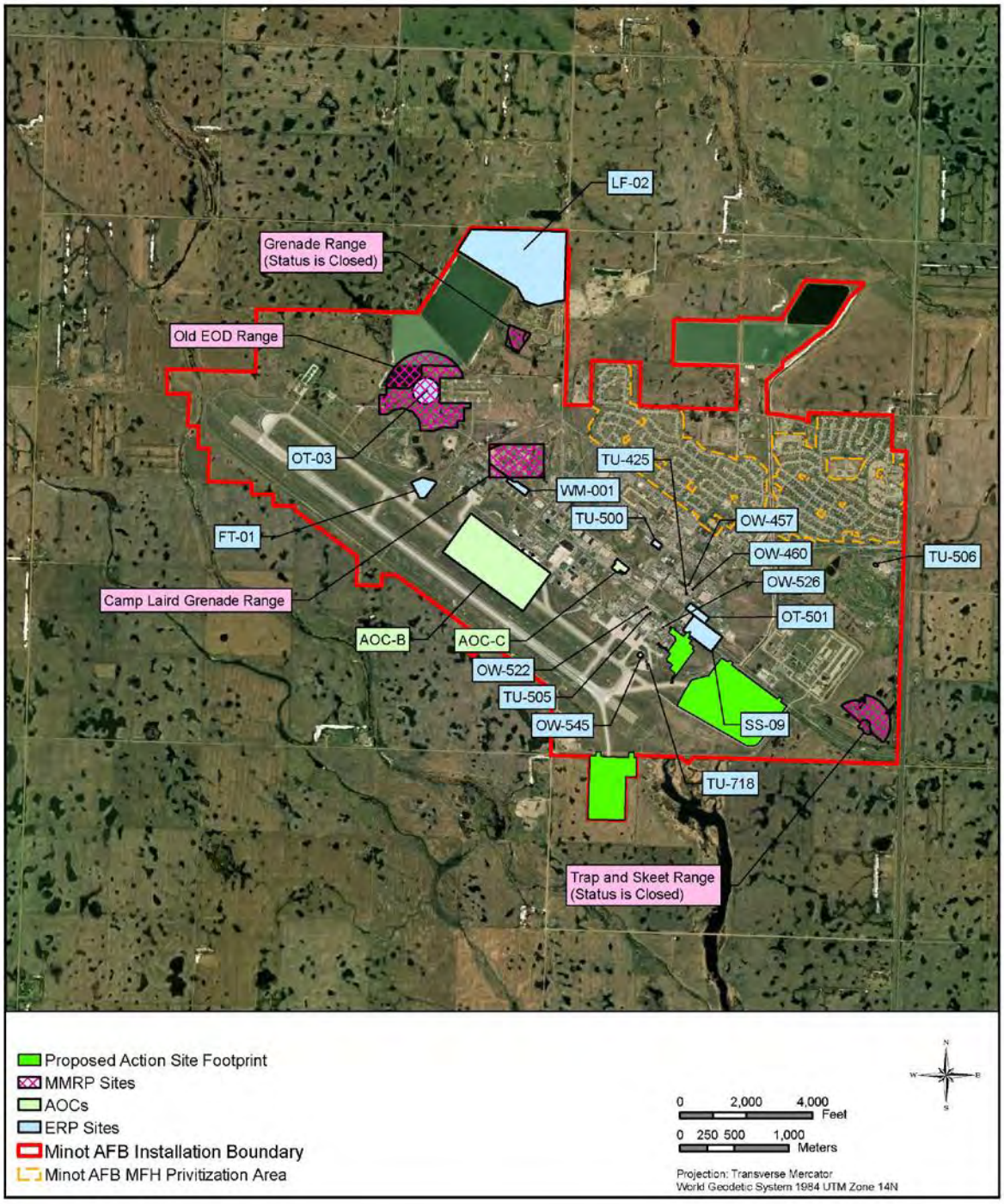

Figure 3-6. ERP Sites, AOCs, and MMRP Sites at Minot AFB

The Minot AFB MMRP includes four munitions response areas (MRAs) (GR320, GR321, TS322 and XU317). The four MRAs were divided into eight munitions response sites (MRSs) (GR320, GR320A, GR321, GR321A, TS322, TS322A, XU317, and XU317A). Two MRSs (XU317 and GR321A) have on going cleanup efforts, and six MRSs are closed.

There are 11 ERP sites and no MMRP sites within 0.5 miles of the proposed project area (**Table 3-5**). **Table 3-5** below presents the Air Force ID, Common Name, Permit ID, and Status for the sites within 0.5 miles of the proposed project area.

Table 3-5

Environmental Restoration Program Sites within 0.5 Miles of the Proposed Project Area

EESOH-MIS ID	Common Name	SWMU/AOC/ Alias	Site Status (Active/NFRAP/Closed)
OT503	Former Building 510/511	AOC C	Active
TU500	Former AAFES Station (B585)	SWMU 4gg, 4hh, 4ii	Active
OT501	Former Heat Plant	--	Active
SS009	Bulk POL Storage Area	SWMU 3	Active
OW545	Building 2038 OWS	SWMU 4s & 7q	Active
OW457	Building 457 OWS	SWMU 7a	NFRAP
OW460	Building 460 OWS	SWMU 7b	NFRAP
TU425	Building 425 UST	SWMU 4d & 4e	NFRAP
OW522	Building 761 OWS 2216	SWMU 4t, 4u, 4dd & 7e	NFRAP
TU505	Tank 2214 (Near B761)	SWMU 4t	NFRAP
OW526	Building 765 OWS	SWMU 7f	NFRAP
TU718	Building 718 UST	SWMU 4f	NFRAP

Aboveground and Underground Storage Tanks. Underground storage tanks (USTs) are subject to regulation under RCRA, 42 U.S.C. 6901, and 40 CFR 280.

Petroleum handled at Minot AFB is stored at a bulk storage facility and numerous smaller storage locations.

Other aboveground storage tanks (ASTs) and USTs at the installation contain gasoline, diesel fuel, used oil, anti-freeze, aqueous film forming foam, cleaner/degreaser, and propylene glycol (MAFB 2005a).

The 5th CES Environmental Flight at Minot AFB has an aggressive fuel storage tank management program for its on-installation USTs and ASTs and off-installation missile complex to ensure compliance with all applicable laws. The Minot AFB strategy is to remove USTs and replace them with ASTs where mission and security considerations permit (USAF 2008).

There are no ASTs or USTs at or adjacent to the proposed project area (MAFB 2009a).

Polychlorinated Biphenyls. Polychlorinated biphenyls (PCBs) are a group of chemical mixtures used as insulators in electrical equipment such as transformers and fluorescent light ballasts. Federal regulations govern items containing 50 to 499 ppm PCBs. Minot AFB maintains a *PCB Management Plan* that establishes operations and management organizational responsibilities and procedures for ensuring that personnel in USAF facilities are not exposed to excessive levels of PCBs.

Radon. Minot AFB is in federal USEPA Radon Zone 1, or the highest priority zone, where the predicted average indoor radon screening level is more than 4 picocuries per liter (USEPA 2010). A radon test conducted in 2008 had no test results above the USEPA recommended action level. In areas where radon test results exceed the USEPA recommended action level, passive radon elimination systems (i.e., sump enclosures) were installed (MAFB 2008e). All newly constructed buildings include provisions for a radon exhaust system to mitigate radon should it become necessary (USAF 2008).

Pests. Minot AFB maintains a *Pest Management Plan* in accordance with AFI 32-1053, *Pest Management Program* and DoD Directive 4150.7, *DoD Pest Management Program*. The 5th Civil Engineering Squadron (CES) Pest Management Shop conducts most pest management activities at Minot AFB. However, this responsibility is also accomplished through a joint effort between contractors and in-house Base personnel. The 5th Medical Group Public Health Office surveys for mosquitoes, other disease vectors, and stored product pests. The Veterinary Clinic assists with pest control through parasite control and preventive vaccinations for animals. The 5th CES maintains a daily record of pest survey and control measures, which are entered in the computer using the Integrated Pest Management Information System Program.

There would be bulk quantities of pesticides, insecticides, or herbicides stored at the proposed project site in the pollutant and hazardous materials storage facility. Additionally, there is no history of soil contamination from the pesticide chlordane on Minot AFB (MAFB 2008b).

3.11 CULTURAL RESOURCES

3.11.1 Definition of the Resource

Cultural resources are subdivided into archaeological resources (i.e., prehistoric or historic sites, where human activity has left physical evidence of that activity but no structures remain standing); architectural resources (i.e., buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); or resources of traditional, religious, or cultural significance to Native American tribes. Depending on the condition and historic use, such resources might provide insight into the cultural practices of previous civilizations or they might retain cultural and religious significance to modern groups.

Several federal laws and regulations govern protection of cultural resources, including the National Historic Preservation Act (NHPA) (1966), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (NAGPRA) (1990).

The EA process and the consultation process prescribed in Section 106 of the NHPA require an assessment of the potential impact of an undertaking on historic properties that are within the proposed project's Area of Potential Effect (APE), which is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Under Section 110 of the NHPA, federal agencies are required to inventory resources under their purview to the National Register of Historical Places (NRHP). In accordance with the NHPA, determinations regarding the potential impacts of an undertaking on historic properties are presented to the State Historic Preservation Officer (SHPO). Federally recognized Native American tribes would be consulted with in accordance with NHPA and EO 13175, *Consultation and Coordination with Indian Tribal Governments*.

3.11.2 Description of the Affected Environment

Regional History. Minot AFB was developed in 1955. Its original mission included offensive capabilities coupled with air defense. The installation hosted a KC-135 Stratotanker and several U-2 surveillance aircraft. In the 1960s, Minot AFB was developed to support nuclear weapon capabilities. The Minuteman I system, established in 1962, consisted of 150 launch facilities and 15 launch control facilities. These missiles were replaced with the Minuteman III system in 1971. In the 1980s Minot added a B-52H fleet which became the spearhead of the Strategic Project Force. In 2009 the 91st MW, which includes the 54th HS, transferred from Air Force Space Command to Air Force Global Strike. Minot AFB and the surrounding missile fields continued to support nuclear capabilities and strategic conventional-weapon bombing operations throughout the Cold War (Minot AFB 2014).

Archaeological Resources. Two archaeological surveys have been performed at and adjacent to Minot AFB. These surveys did not identify any prehistoric or historic archaeological sites in the 1,184 acres surveyed. The remaining acreage at Minot AFB and 450 acres of off-installation active missile emplacements and missile alert facilities (MAFs) were excluded from the archaeological survey due to high levels of disturbance and development (Minot AFB 2014). The North Dakota SHPO concurred that archaeological surveys of the MAFs are unnecessary due to the low potential for archaeological resources to be discovered (Simonson 1996). As such, the Proposed Action areas have not been surveyed, and there are no known archaeological resources in these areas.

Architectural Resources. Several architectural inventories have been completed at Minot AFB, including a Cold War-Era Historic Property Survey in 2009, at which time 8 facilities on Minot AFB were evaluated as eligible for NRHP listing (Minot AFB 2014).

Resources of Traditional, Religious, or Cultural Significance to Native American Tribes. Minot AFB and the missile fields do not contain any known resources of traditional, religious, or cultural importance. Native American tribes who may have historically been affiliated with these areas include the Assiniboine and Sioux Tribes of the Fort Peck Reservation, the Crow Creek Sioux Tribe of the Crow Creek Reservation, the Spirit Lake Dakota Nation, the Standing Rock Sioux Tribe of North and South Dakota, the Three Affiliated Tribes (Mandan, Hidatsa, and Arikara) of the Fort Berthold Reservation, and the Turtle Mountain Band of Chippewa Indians of North Dakota (Minot AFB 2014).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section presents the environmental consequences that may occur from the Proposed Action and No Action Alternatives. The Proposed Action and No Action Alternative were evaluated for their potential effects on physical and cultural resources in accordance with CEQ guidelines at 40 CFR §1508.8.

The Proposed Action is to construct a two-story consolidated facility housing various operational support, maintenance, TRF alert crew living space, and HS operations and alert crew training space within Minot AFB, Flightline District 4A, in order to increase response times and productivity. Under the No Action, AFGSC would not implement the Proposed Action of a consolidated building on Flightline District 4A at Minot AFB, and the 54th HS, 582nd HG and TRF crews would continue to use existing structures scattered throughout base in six different locations.

The impact analysis includes consideration of both short-term and long-term effects and direct and indirect effects of the Proposed Action and No Action Alternative. Some impacts could be considered either adverse (causing harm or unfavorable conditions) or beneficial. Also taken into consideration is the relative intensity of an impact, which takes into account the sensitive or rarity of a resource (such as critical ecological areas or creating a public safety risk).

As discussed in Section 3.1, the resource areas not carried forward for environmental analysis in this EA are visual/aesthetic resources, coastal zone management, geology, socioeconomics/ environmental justice. These resource areas were not analyzed because an initial evaluation determined that no effects, or clearly insignificant effects, would occur.

4.2 NOISE

4.2.1 Environmental Consequences

4.2.1.1 Evaluation Criteria

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from implementation of a Proposed Action compared to baseline (existing) conditions. Potential changes in the acoustical environment can be beneficial, neutral, or adverse. Adverse impacts would occur if there is an increase in ambient noise conditions over baseline conditions, especially if the increase could affect any sensitive receptors (residential area, schools, etc.) Projected noise impacts were evaluated qualitatively for the Proposed Action, Alternatives, and No Action Alternative.

4.2.2 Proposed Action

The sources of noise that could impact populations include construction activities and operational activities (e.g. aircraft operations) associated with the Proposed Action.

The components of the Proposed Action include the construction of a two-story consolidated HELO/TRF OPS/AMU and Alert Facility with aircraft parking, a taxiway, POV and TRF parking, and additional features/structures as discussed in Section 2.1. Noise from construction activities would vary depending on the type of equipment used and the distance from the noise source. To predict how construction activities would impact adjacent populations, noise from the construction activities was estimated. For example, as shown in **Table 3-2**, construction usually involves several pieces of equipment (e.g., trucks and bulldozers) that can be used simultaneously. Under the Proposed Action, the total noise from the equipment during the busiest day, taking into account ambient noise levels, was estimated to determine the total impact of noise from construction activities at a given distance. Examples of expected total construction noise during daytime hours at specified distances are shown in **Table 4-1.**

Table 4-1

Predicted Noise Levels from Construction Activities

Distance from Noise Source	Predicted Noise Level (dBA)
50 feet	83
100 feet	79
150 feet	76
200 feet	74
400 feet	69
800 feet	63
1,600 feet	58

The noise from construction equipment would be localized, short-term, and intermittent during machinery operations. The proposed construction would be expected to result in noise levels comparable to those indicated in **Table 4-1.**

Noise generation would last only for the duration of construction activities. Noise generation could be minimized by restricting construction to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.) and using measures such as equipment exhaust mufflers. It is not anticipated that the short-term increase in ambient noise levels from the Proposed Action would cause significant adverse impacts because the noise would not increase the baseline ambient noise contours.

Consequently, activities under the Proposed Action would result in short-term, minor impacts on the noise environment in the vicinity of construction. Operational impacts would be the same as current baseline noise levels along the flightline because the Proposed Action would not increase aircraft usage within the flightline.

4.2.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action of constructing a consolidated unit for the 54th BW and 91st MW but would continue to utilize the existing structures located in varying locations across MAFB. Existing conditions would remain the same, as described in Section 3.1.2; therefore, no impacts on the ambient noise environment would occur.

4.3 AIR QUALITY

4.3.1 Environmental Consequences

4.3.1.1 Evaluation Criteria

The environmental consequences to local and regional air quality conditions near a proposed federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS "attainment" areas would be considered significant if the net increases in pollutant emissions from the federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory
- Exceed any evaluation criteria established by a SIP or permit limitation

There are no regulatory thresholds of significance for GHG emissions; however, CEQ has released the Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, which suggests that 27,563 tons per year (tpy) (25,000 metric tpy) of CO^2- equivalent is a meaningful reference point for when to consider GHG emissions in NEPA documentation.

4.3.2 Proposed Action

The Proposed Action would generate only temporary air pollutant emissions. Construction of the Proposed Action would generate air pollutant emissions as a result of construction activity. Specifically, construction would result in short-term emissions of criteria pollutants as combustion products from construction equipment and other construction materials (paints,

asphalt, etc.); however, these emissions would be temporary and would not be expected to generate any offsite impacts.

Construction activities would also generate particulate matter emissions as fugitive dust from ground-disturbing activities. Fugitive dust emissions would be greatest during initial site-preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions.

All emissions associated with construction activities would be temporary in nature. There would be negligible new operational emissions associated with the Proposed Action. Per the North Dakota Air Pollution Control Regulations under North Dakota Administrative Code [NDAC 33-15-14-02.13. b], the air construction permit threshold for stationary fuel combustion sources is 10 million British Thermal Units (BTUs) per hour.

It is not expected that emissions from construction of the facilities associated with the Proposed Action would contribute to or affect local or regional attainment status with the NAAQS or NDAAQS. Likewise, it is assumed the temporary emissions from construction of the Proposed Action would have a negligible contribution towards the North Dakota statewide GHG inventory.

Because Minot AFB is located in an area classified as an attainment/unclassifiable area for all criteria pollutants, General Conformity Rule requirements are not applicable. The Proposed Action would generate emissions below *de Minimis* levels. In addition, the Proposed Action would generate emissions well below 10 percent of the emissions inventories for North Dakota AQCR 172, and the emissions would be short-term. Therefore, the construction activities associated with the Proposed Action would not result in significant impacts on air quality at Minot AFB or on regional or local air quality.

4.3.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to provide for the staffing needs of military personnel in varying locations on base. Minot AFB is currently using six different buildings to perform the required tasks of the AFGSC and TRF crews. No impacts on air quality would be expected.

4.4 LAND USE

4.4.1 Environmental Consequences

4.4.1.1 Evaluation Criteria

A Proposed Action's compatibility with existing conditions and the degree of land use sensitivity in areas affected are used to evaluate the effects on land use. The primary effect would be if the proposed land use change would conflict with existing or proposed installation adjacent land uses or is incompatible with the Minot General Plan.

4.4.2 Proposed Action

The Proposed Action would be in compliance with Minot AFB's General Plan, including the goals and the existing installation land use designations. The Proposed Action would be consistent with the 5th BW's and the 91st MW's long-term goals related to improving the living and working conditions and quality of life for Minot AFB personnel. The Proposed Action lies on previously undeveloped land and would occur primarily within the open space land use designation. This location would not require changes to the existing land use designations. Future development in the vicinity of the proposed Consolidated HELO/TRF OPS/AMU and Alert Facility is unknown at this time. Currently, there are no known negative impacts to other master planned facilities in this area.

The Proposed Action would be compatible with surrounding land uses and would not preclude the viability or continued use and occupation of existing land uses at Minot AFB. Therefore, the Proposed Action would not result in any adverse impacts on land uses within Minot AFB, nor would the Proposed Action result in any impacts on the compatibility of adjacent land uses.

4.4.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to provide for the AFGSC and TRF personnel needs in their current locations. Existing land use conditions would remain the same, as described in Section 3.3.2.

The No Action Alternative would be inconsistent with the long-term goals of Minot AFB, including improvement in quality of life for personnel working and living on the installation as well as modernizing facilities and infrastructure to enable mission capability. However, no long-term, adverse impacts on land use would be expected.

4.5 TOPOGRAPHY AND SOILS

4.5.1 Environmental Consequences

4.5.1.1 Evaluation Criteria

Protection of unique topographic features, and minimization of soil/sediment erosion are considered when evaluating potential effects of a Proposed Action on topography and soils. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

4.5.2 Proposed Action

Topography/Physiography. No long term adverse impacts would be expected on the natural topography and physiography of the region as a result of modifications associated with the Proposed Action. Modification of existing microtopography would be expected as a result of grading, excavation, and filling to accommodate building foundation and infrastructure. Impacts would be expected to be negligible because the natural microtopography has been previously disturbed by past development activities and there are no unique topographic features within the proposed project area.

Soils. Minor short- and long-term adverse impacts on soils would be expected. The primary short-term impacts would occur during construction activities when vegetation is cleared and the earth is bare. Impacts would be anticipated to be minor, as the soils within the footprint of the proposed project area have been previously disturbed. Best management practices (BMPs) would be implemented during construction, and approved erosion and sediment control plans (ESCPs) and storm water pollution prevention plans (SWPPPs) would be followed to reduce potential impacts from soil exposure to stormwater during construction.

Minor long-term impacts on soils would be expected upon completion of the Proposed Action. Impervious surfaces would increase as a result of conversion from vegetated field to building and parking areas. An increase in impervious surfaces could increase storm water runoff velocity and volume, both during construction and under a post-construction condition. Soil characteristics and limitations will be taken into consideration during the design and construction phases of the project to address any drainage or soil limitations.

Post-construction BMP, such as velocity dissipation and vegetated stormwater channels, would minimize operational impacts associated with increased stormwater runoff. As of 2009, all federal facilities are required to manage stormwater in accordance with Section 438 of the Energy Independence and Security Act (EISA). Specifically, the Act requires that federal agencies reduce stormwater runoff from federal development and redevelopment projects to

protect water resources. This requires that the pre-and post-development runoff be balanced so that facilities are not increasing the amount of stormwater runoff from their facilities. The design is required to incorporate specified performance criteria to reduce stormwater runoff. The performance criteria can be met through two options: 1) retention of the 95th percentile rainfall event or 2) a site-specific hydrologic analysis that quantifies the site-specific runoff.

4.5.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to provide for the occupational and housing needs of AFGSC and TRF personnel in varying locations on base. Existing conditions would remain the same, as described in Section 3.4.2; therefore, no impacts on soils or topography would be expected.

4.6 WATER RESOURCES

4.6.1 Environmental Consequences

4.6.1.1 Evaluation Criteria

Evaluation criteria for impacts on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. A Proposed Action could have significant effect if it results in modifications that may impair water quality in surface waters, results in modification to surface waters, or increases potential flooding as a result of modifications to the floodplain.

4.6.2 Proposed Action

Groundwater. During construction, installation of underground utilities could increase the risk to shallow groundwater if there is a leak or spill. Implementation of appropriate BMPs during construction activities would minimize potential adverse impacts. In the event of a spill or leak of fuel or other construction-related products, there could be adverse impacts on groundwater. All fuels and other potentially hazardous materials are required to be contained and stored appropriately. In the event of a spill, procedures outlined in the *Installation Pollution Prevention Program Guide* (MAFB 1996) would be followed (see Section 3.10 for a discussion on hazardous materials and wastes).

Surface Water. Short- and long-term, negligible to minor adverse impacts on surface water could be expected. During construction, soil disturbance could result in an increase in turbidity or other pollutants to stormwater during storm events. In the event of a spill or leak of fuel or other construction-related products, there could be adverse impacts on surface water quality. All fuels and other potentially hazardous materials would be contained and stored appropriately. In the event of a spill, procedures outlined in the *Installation Pollution Prevention Program Guide* (MAFB 1996) would be followed to quickly contain and clean up a spill. Overall,

construction activities would have the potential for short-term, adverse impacts on surface water quality; however, the development of a site-specific SWPPP as a component of the NPDES Permit for General Construction Activity would minimize the magnitude of potential adverse impacts. Implementation of BMPs required in the Minot AFB SWPPP and Integrated Natural Resources Management Plan (INRMP) would further minimize potential impacts on surface water resources.

Conversion of the existing vegetative cover to impervious surface would result in an increase in stormwater runoff into the existing stormwater conveyance system. Currently, there is only one surface drain, approximately 300 feet in length and located east of Building 715 near the Proposed Action site, and one underground drain running in a northeast to southwest direction across the airfield on the east side of the Proposed Action site. The site development plan will address onsite drainage and connection with the existing stormwater conveyance system on Minot AFB.

It is anticipated that the construction of the Proposed Action would have permanent but minor impacts associated with increased impervious surfaces resulting from the construction of the Consolidated HELO/TRF OPS/AMU and Alert Facility with aircraft, POV, and TRF parking. Any adverse impacts would be minimized by implementing BMPs required by the EISA and SWPPP, and following an approved ESCP.

Floodplains. No direct or indirect impacts would be expected as there are no floodplains at or within the vicinity of the proposed project site.

Wetlands. No direct, adverse impacts on wetlands would be expected.

4.6.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to have military personal working in varying locations throughout the base. Existing conditions would remain the same, as described in Section 3.5.2; therefore, no impacts on water resources would be expected.

4.7 BIOLOGICAL RESOURCES

4.7.1 Environmental Consequences

4.7.1.1 Evaluation Criteria

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

1. The importance (i.e., 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 the proposed activities
4. The duration of ecological ramifications.

An impact on a biological resource would be considered significant if it was to cause a violation of the laws and regulations pertaining to biological resources, if species or habitats of high concern are adversely affected over relatively large areas, or if disturbances cause reductions in population size or distribution of a species of special concern.

Ground disturbance and noise associated with construction activities might directly or indirectly cause impacts on biological resources. Direct impacts from ground disturbance were evaluated by identifying the level of disturbance and the type of habitat present. Mortality of individuals, habitat removal, and damage or degradation of habitats are impacts that might be associated with ground-disturbing activities. Noise associated with a Proposed Action could be disruptive to wildlife, but given the location of the proposed development adjacent to an existing airfield, a temporary increase in noise during construction would not have any effect.

4.7.2 Proposed Action

Vegetation. Permanent impacts on vegetation would not be expected. The majority of vegetation (herbs and forbs) within the Proposed Action is mowed regularly, and Minot AFB ensures that the vegetation and shelterbelts surrounding the flightline and proposed project site are maintained, meaning that the vegetation in the vicinity of the runway is groomed to a uniform height of 7 to 14 inches (MAFB 2014). The majority of the project area within the Proposed Action would be converted from vegetative cover to impervious surface (paving or buildings). Vegetation at the edges of the construction area may be temporarily disturbed but would either rejuvenate in the following growing season or be replanted (hydroseeded) with noxious free seed mix, thus minimizing the spread of noxious weeds.

Wildlife. The Proposed Action would have short-term, minor, direct, adverse impacts on any wildlife present due to disturbances (e.g., noise and motion) from construction activities and heavy equipment use. A temporary increase in noise levels with the project area from construction equipment would likely not be noticeable given the proximity to the air field. Therefore, no long-term, adverse impacts on wildlife would be expected as a result of temporary construction disturbances. The non-native grassland habitat within the Proposed Action area does not provide significant habitat for wildlife. Small common species, such as mice, voles, and other small mammals and birds, may be present but would leave the area when construction begins.

Protected and Sensitive Species. No federally listed threatened or endangered species are known to occur on Minot AFB; therefore, no impacts on federally listed or state recognized species would be expected. Habitats on the installation do support use by species of conservation priority, as defined in North Dakota's *Sate Wildlife Action Plan* (SWAP). Most of these are migratory bird species that use a variety of habitats on Minot AFB, such as pastures, haylands, wetlands, and open water. There is no critical or significant habitat present on Minot AFB. Short-term, negligible to minor, adverse impacts on species of conservation priority, similar to those discussed for wildlife, would be expected as a result of disturbances from construction activities.

Impacts on migratory birds are not expected to be long term or significantly adverse because of the lack of suitable habitat to support migratory birds within the Proposed Action area and the existing noise sources along the flightline.

The most common migratory bird species likely to occur within the Proposed Action area are song birds. The following BMPs are recommended for reduction or avoidance of impacts on migratory birds that could occur within the project area:

- If demolition or construction is scheduled to start during the period in which migratory bird species are present, any potential nest trees or shrubs that are slated for removal should be removed prior to the nesting season to prevent nesting.
- If tree removal cannot occur until nesting commences in early spring, then two weeks prior to start of construction, a survey should be performed by a qualified biologist to identify any nesting birds. If nesting birds are found during the survey, buffer areas should be established around nests until the young have fledged. Confirmation that all young have fledged should be made by a qualified biologist.

4.7.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to provide for AFGSC and TRF crew needs within varying locations around the base. Some of the older buildings would continue to require maintenance and renovation without the capability to house newer technological systems or future increases in personnel. Therefore, there is a possibility for intermittent, short-term, negligible, adverse impacts on wildlife and protected and sensitive species that could be expected due to disturbances (e.g., noise, motion) during future renovation activities when applicable.

4.8 SAFETY AND OCCUPATIONAL HEALTH

4.8.1 Environmental Consequences

4.8.1.1 Evaluation Criteria

Any increase in safety risks would be considered an adverse effect on safety. A Proposed Action could have a significant effect with respect to health and safety if the following were to occur:

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

4.8.2 Proposed Action

Construction Safety. Construction always increases the risk of a safety related incident because of the type of work performed in a variety of environments (outdoor, below ground, elevated platforms, etc.) Short-term, minor, adverse impacts would be expected. However, all construction contractors would be required to follow and implement OSHA standards to establish and maintain safety procedures. Construction activities associated with the Proposed Action would not pose new or unacceptable safety risks to installation personnel or activities at the installation. Following completion of construction, no long-term, adverse impacts on safety would be expected.

There is a potential to encounter underground utilities that may have ACM wrapping. All ACM discovered would be removed by state-certified individuals prior to construction and disposed of at a USEPA-approved landfill. Contractors would be required to adhere to all federal, state, and local regulations in addition to Minot AFB management plans. The removal of ACM during construction activities would result in long-term, beneficial impacts by reducing potential exposure to military and maintenance personnel.

Explosives and Munitions Safety. Operation of the new facilities would create potentially new QD explosive zones. Any needed zones would be established as part of facility planning and operational review during project planning.

4.8.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to provide for military personnel needs in existing buildings throughout the base. Existing conditions would remain the same, as described in Section 3.7.2.

4.9 UTILITIES AND INFRASTRUCTURE

4.9.1 Environmental Consequences

4.9.1.1 Evaluation Criteria

Impacts on infrastructure are evaluated for their potential to disrupt or improve existing levels of service and create additional needs for airfield and transportation resources, energy (i.e., electric, natural gas, liquid fuels, and central heating and cooling), water, sanitary sewer and wastewater service, storm water drainage, communications, and solid waste management. For example, impacts might arise from physical changes to traffic circulation or energy needs created by either direct or indirect workforce and population changes related to installation activities. An impact could be considered significant if the Proposed Action resulted in any of the following:

- Exceeded capacity of a utility
- A long-term interruption of the utility
- A violation of a permit condition
- A violation of an approved plan for that utility

4.9.2 Proposed Action

Transportation. Short-term, negligible to minor adverse impacts on transportation systems would be expected. The construction of the Proposed Action would result in a slight increase in traffic at the installation from equipment delivery, and contractor's personnel arrival at the work sites. However, construction traffic would compose only a small percentage of the total traffic on the installation. Many of the construction vehicles would be driven to the work sites and kept on site for the duration of work activities, resulting in relatively few additional trips, excluding construction personnel commuting to the site. Any potential increases in traffic volume associated with the proposed construction activities would be temporary.

Long-term, negligible to minor, adverse impacts on transportation would be expected due to the increase in personnel working on the flightline. The workforce would be relocated from other buildings on the base, and there may be minor changes in traffic flow as a result of the relocated work force.

Electrical Supply. Short- and long-term, negligible to minor impacts on electrical supply are expected. The construction processes could result in a slight increase in the demand for electricity as well as the electrical output needed to operate the facilities and parking lot fixtures once construction is complete. However, this change would be offset by removal of the electrical demand from other areas of the base that currently house personnel that will be relocated to the new facility.

Natural Gas Supply. No impacts to natural gas are to be expected. There are no above-ground or underground liquefied natural gas storage tanks in the vicinity of the Proposed Action.

Other Utilities. Construction activities could cause short, minor interruption in some utilities (water, stormwater, sewer, etc.), but these types of service interruptions would be planned and timed to avoid adverse impacts. Construction may also cause a minor increase in demand for these services, but the existing systems are sized to accommodate minor fluctuations in demand during construction. No increased demand in these services above current demand would be expected from operation of the new facility(ies); therefore, no adverse impacts are expected from operation of the new facilities. It is assumed that all permits associated with existing infrastructure (e.g., NPDES permit) would remain in force and there is no anticipated need to modify those permits as a result of the Proposed Action.

4.9.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to provide for military personnel needs in existing buildings throughout the base. Existing conditions would remain the same, as described in Section 3.8.2.

4.10 HAZARDOUS MATERIALS AND WASTES

4.10.1 Environmental Consequences

4.10.1.1 Evaluation Criteria

Impacts on hazardous materials or hazardous waste would be considered significant if a Proposed Action resulted in noncompliance with applicable federal or state regulations, or increased the amounts generated or procured beyond current Minot AFB waste management procedures, permits, and capacities. Impacts on the ERP effects on contaminated sites would be considered significant if a Proposed Action disturbed or created contaminated sites, resulting in negative effects on human health or the environment, or if a Proposed Action made it more difficult or costly to remediate existing contaminated sites.

4.10.2 Proposed Action

Hazardous Materials. The Proposed Action includes the construction of a pollutant and hazardous materials storage within the proposed project area. New state-of-the-art facilities for the management and storage of hazardous materials such as cleaners, solvents, antifreeze, gasoline, motor oil, and pesticides will also be stored in small quantities inside and outside of the proposed project area for domestic use.

Short-term, minor impacts would be expected during construction of the Proposed Action. Construction activities would require the use of certain hazardous materials such as paints,

welding gases, solvents, preservatives, and sealants. It is anticipated that the quantity of products containing hazardous materials used during the Proposed Action would be minimal, and their use would be of short duration. Contractors would be responsible for the management of hazardous materials and petroleum products, which would be handled in accordance with federal, state, and USAF regulations. Hazardous materials associated with operation of the facilities would be tracked in the Environmental, Safety, and Occupational Health Management Information System (ESOHMIS). No long-term, direct or indirect, adverse impacts would be expected.

Hazardous Wastes. The quantity of hazardous wastes generated from proposed construction activities would be minor and would not be expected to exceed the capacities of existing hazardous waste disposal facilities. Hazardous wastes would be handled under the existing DoD RCRA-compliant waste management programs and, therefore, would not be expected to increase the risks of exposure to workers and installation personnel. The contractor would be required to coordinate with CES prior to commencement of construction activities to determine the hazardous waste requirements during construction and maintenance activities.

Environmental Restoration Program. There are no significant adverse impacts associated with construction as it relates to known ERP sites. The nearest ERP site (SS009) is adjacent to the proposed project area (**Figure 3-6**). If contaminated groundwater or soil is inadvertently discovered at the proposed project area during construction or demolition activities, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable federal, state, and local regulations; USAF regulations; and Minot AFB management procedures. Project planning would include avoiding disruption of clean-up activities and minimizing potential impacts on ERP infrastructure.

Operation of the facility would also not result in any adverse impacts to the ERP.

Aboveground and Underground Storage Tanks. No impacts would be expected as there are no ASTs or USTs at or adjacent to the proposed project area. However, if ASTs or USTs are inadvertently discovered at the proposed project area during construction or demolition activities, the contractor would be required to coordinate with 5 CES for their removal and disposal.

Polychlorinated Biphenyls. No impacts would be expected, as there will only be new construction without the use of PCB containing materials.

Radon. Short-term, negligible adverse impacts could be expected. In areas where previous radon test results exceeded the USEPA-recommended action level, there are passive radon elimination systems installed to mitigate radon. In addition, should it become necessary, the new Consolidated HELO/TRF OPS/AMU and Alert Facility will have fans installed to mitigate any potential radon exposure within the Proposed Action area.

Pesticides. No impacts would be expected. The Proposed Action would not significantly alter pesticide or herbicide application areas. In accordance with the Pest Management Plan, the least toxic method for controlling pests encountered within the proposed project area would be used. In addition, future pesticide and herbicide applications within the proposed project area would be conducted according to federal, state, and local regulations and the Pest Management Plan. All pesticides use would be tracked in ESOHMIS.

4.10.3 No Action Alternative

Under the No Action Alternative, Minot AFB would not implement the Proposed Action and would continue to provide for the needs of military personnel in varying location on base. There would be no change in hazardous materials, hazardous wastes, the ERP, ASTs, USTs, PCBs, radon, and pesticides.

4.11 CULTURAL RESOURCES

4.11.1 Environmental Consequences

4.11.1.1 Evaluation Criteria

Effects on cultural resources are actions that change culturally valued elements of a resource or restrict access to cultural resources. Effects might be direct or indirect; short term or long term; and minor, moderate, or major in magnitude. Examples of direct effects include ground disturbance in an archaeological site or the visual effect of new construction on the historic setting of a resource. An example of an indirect effect would be construction of a road that increases public access to an archaeological site, potentially resulting in looting or damage. Minor effects might be noticeable, but are localized and do not affect character-defining features of NRHP-eligible or listed resources. Moderate effects are measurable or perceptible and change one or more character-defining features of a resource; however, the effect does not diminish the resource's overall integrity or jeopardize eligibility for NRHP listing. Major effects are substantial, noticeable, and permanent; these effects change one or more-character defining features and diminish the resource's integrity to the extent it is no longer eligible for NRHP listing.

4.11.2 Proposed Action

The consolidation of operations will vacate one of the eight (8) eligible facilities. Building 879 is currently the administration building for the 54 HS. Demolition is not expected, and it is assumed that the building will have future occupants. The building will likely need modifications; such as new roll up doors, entry doors, interior paint and upgrades to communication systems and bathrooms but the modifications are not a part of the Proposed Action.

The area within the Proposed Action has been previously disturbed during construction of various existing buildings which have been heavily modified since then, and any remaining archaeological sites that may have existed would have been physically impacted or destroyed during construction of the surrounding facilities. These areas have also been documented as having low potential for archaeological resources. New construction would have a relatively low profile compared to existing buildings and structures.

No effects on unknown, buried archaeological resources are likely to occur. Intact, buried cultural resources are unlikely at the Proposed Action areas due to the low potential for archaeological resources. However, should cultural materials or remains be encountered during construction or day-to-day operations associated with the Proposed Action, personnel would follow Minot AFB's Standard Operating Procedures for Cultural Resources (MAFB 2014). Construction or operations would cease immediately, and the materials would be stabilized and protected. All actions would be performed in compliance with all requisite statutes, regulations, and policies and in consultation with the North Dakota SHPO and interested tribes, as applicable.

The State Historic Preservation Officer recommended that any fill material be from an approved source, which includes material from the immediate area surrounding the project sites and small quantities of stockpiled material. If fill material needs to be delivered from offsite, the source location would be surveyed by a permitted archaeologist or come from a certified material pit.

4.11.3 No Action Alternative

Under the No Action Alternative, all current standards would remain in place. TRF personnel will continue to use varying facilities across base. No effects on known archaeological resources, architectural resources, and resources of traditional, religious, or cultural importance would occur because none are present, and ground disturbing activities would not take place.

4.11.4 Definition of Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in considering cumulative effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the Proposed Action and the No Action Alternative. The scope must consider geographic and temporal overlaps among the Proposed Action and the No Action Alternative and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between action alternatives and the No Action Alternative and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with, or in close proximity to, the action alternatives and the No Action Alternative would be expected to have more potential for a relationship than actions that may be geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects. To identify cumulative effects, this EA addresses three questions.

1. Does a relationship exist such that elements of the action alternatives and the No Action Alternative might interact with elements of past, present, or reasonably foreseeable actions?
2. If one or more of the elements of the action alternatives and the No Action Alternative and another action could be expected to interact, would the action alternatives and the No Action Alternative affect or be affected by impacts of the other action?
3. If such a relationship exists, does an assessment reveal any potentially significant impacts not identified when the action alternatives and the No Action Alternative are considered alone?

In this EA, an effort has been made to identify all actions that are being considered and that are in the planning phase at this time. To the extent that details regarding such actions exist and the actions have a potential to interact with the action alternatives and the No Action Alternative in this EA, these actions are included in this cumulative analysis. This approach enables decision makers to have the most current information available so that they can evaluate the environmental consequences of the action alternatives and the No Action Alternative.

4.11.5 Projects Considered Potential Cumulative Effects

Minot AFB is an active military installation that undergoes continuous change in mission and training requirements. This process of change is consistent with the U.S. defense policy that requires the Air Force be ready to respond to threats to American interests throughout the world. These bases, like any other major installation, also require occasional new construction, facility improvements, and infrastructure upgrades.

For purposes of this analysis, the cumulative scenario focuses on buildout of the Flightline District 4A, as planned for and anticipated in the ADP. The Flightline District was part of the ADP and lies along the existing runway. The Flightline District is a planning district for future buildout and modification of this portion of the Air Force base. The ADP was focused on planning for major activities associated with alert and aircraft support functions for both fixed and rotary wing aircraft within the Minot AFB Flightline District.

In addition to buildout of the Flightline District 4A, it is assumed operational changes at Minot will continue and may include minor construction projects and maintenance activities.

4.11.6 Cumulative Effects Analysis

The following analysis examines how the impacts of these other actions might be affected by those resulting from the construction of the consolidated two-story HELO/TRF OPS/AMU and Alert Facilities.

The cumulative effect of the Proposed Action Alternative, combined with buildout of the Flightline District 4A, is not expected to result in any significant cumulative impacts. Buildout of the flightline district has been planned for and anticipated, and has been occurring incrementally, and will continue to occur over several years. This incremental buildout will minimize construction-related impacts since buildout and construction would not occur at the same time. Operational impacts of the Proposed Action combined with buildout of the Flightline District over time will cumulatively relocate personnel to the flightline district and potentially increase or modify traffic patterns on this portion of the district. However, this potential for traffic pattern modification is not expected to be significant.

The Proposed Action, combined with the Flightline District buildout, is also anticipated to potentially increase the demand on infrastructure, but full buildout is not expected to increase the demand to a level that triggers the need to expand the capacity of the existing infrastructure. The infrastructure needs of full buildout of the Flightline District, including the Proposed Action, have been considered and planned for as part of the ADP.

5.0 LIST OF PREPARERS

This EA has been prepared by Spectrum Services Group, Inc., under the direction of the Air Force Civil Engineer Center, USAF, and AFGSC, Minot AFB.

The individuals that contributed to the preparation of this EA are listed below.

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6.0 REFERENCES

AirTech Environmental, Inc., 2000. Asbestos Survey Report. 20 December.

Dirk, 2009. North Dakota Plant Species of Concern. [Unpublished list]. North Dakota Natural Heritage Program, Bismarck. 7 pp.

MAFB, 1995. Integrated Natural Resource Management Plan 1996-2001. (Prepared by Greystone.) December.

MAFB, 1996. Installation Pollution Prevention Program Guide and Sample Pollution Prevention Management Action Plan. July.

MAFB, 2005. North Dakota Pollution Discharge Elimination System (NDPDES) Storm Water Permit. 11 April.

MAFB 2007a MAFB. 2007. State of North Dakota Air Pollution Control Title V Permit. 1 December 2007.

MAFB, 2008a. Minot Air Force Base Polychlorinated Biphenyl (PCB) Management Plan. September.

MAFB, 2008b. Minot Air Force Base 2008 Pest Management Plan.

MAFB, 2008c. Minot Air Force Base Solid Waste Data Spreadsheet for Fiscal Year 2008.

MAFB 2008e MAFB. 2008. Minot Air Force Base Phase 8-13 Radon Tests.

MAFB, 2009a. Final Environmental Baseline Survey Supporting the Privatization of Military Family Housing at Minot Air Force Base, North Dakota. March.

MAFB, 2009b. Lead-Based Paint Operations and Management Plan. August.

NDDH, 2010. North Dakota Pollutant Discharge Elimination System Permit. Permit No. ND-0020486. Effective Date: 1 January 2010. Expiration Date: 31 December 2014.

North Dakota Administrative Code, 2003. Title 33, Article 15, Chapter 14. Designated Air Contaminant Sources, Permit to Construct, Minor Source Permit to Operate, Title V Permit to Operate. March 1.

North Dakota Departments of Transportation (NDDOT), 2011. “Noise Policy and Guidance.” Available online: <https://www.dot.nd.gov/manuals/design/designmanual/wordfiles_design/NDDOT%20Noise%20Policy %20and%20Guidance%20(2011).pdf>. Accessed 13 November 2015. 7 July.

Simonson, Michael, 1996. Correspondence from Mr. Michael Simonson (State Historical Society of North Dakota) to Mr. Kevin Nelson (USAF) regarding archaeological survey needs at the MAFs. 23 July.

USAF 1998. Land Use Planning. Air Force Pamphlet 32-1010 (AFPAM32-1010). November 1.

USAF, 2008. General Plan: Minot Air Force Base, ND. 24 June.

USAF 2010a, USAF. Privatization of Military Family Housing, Northern Group: Minot AFB, ND; Grand Forks AFB, ND; Cavalier AFS, ND; Ellsworth AFB, SD; Mountain Home AFB, ID; and Cannon AFB, NM. Draft One-Step Request for Qualification. 9 February.

USAF, 2010b. Statement of Need for the Privatization of Military Family Housing Northern Group: Minot AFB, ND; Grand Forks AFB, ND; Cavalier AFS, ND; Ellsworth AFB, SD; Mountain Home AFB, ID; and Cannon AFB, NM. 13 December.

USEPA, 2010. EPA Map of Radon Zones. Available online: <http://www.epa.gov/radon/states/northdakota.html>. Accessed 25 March 2010. 10 March.

USEPA, 2015. "Clean Air Act Overview Title IV - Noise Pollution." Last updated 27 October 2015. Available Online. <http://www2.epa.gov/clean-airact-overview/title-iv-noise-pollution>. Accessed on 12 November 2015.

USEPA, 2018. NAAQS Table of Criteria Pollutants. Available online: https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed on 22 September 2018.

APPENDIX A

TRIBAL AND AGENCY COORDINATION AND PUBLIC OUTREACH DOCUMENTATION

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 5TH BOMB WING (AFGSC)
MINOT AIR FORCE BASE NORTH DAKOTA

27 NOV 2018

Colonel Bradley L. Cochran
Commander, 5th Bomb Wing
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Minot AFB ND 58705

Mr. Elgin Crows Breast
Tribal Historic Preservation Officer
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town ND 58763

Dear Mr. Crows Breast

The purpose of this letter is twofold: to give you an opportunity to review and comment on a proposed action in which the Mandan, Hidatsa and Arikara Nation may have an interest; and to invite the Tribe to participate in government-to-government consultation with Minot Air Force Base (AFB) pursuant to Department of Defense (DoD) Instruction 4710.02 and Section 106 of the National Historic Preservation Act (NHPA).[1]

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) to capture the potential environmental consequences associated with the 54th Helicopter Squadron, 582d Helicopter Group and 91st Tactical Response Forces (TRF) Construction of a Consolidated Helicopter/TRF Operations/Aircraft Maintenance Unit and Alert Facility on Minot AFB, 13 miles north of Minot, ND. This EA will, as required by laws and regulations, consider the potential environmental impacts of this construction on approximately 17 acres of the existing flight line.[2]

The goals of constructing a consolidated facility are to provide adequate space for planned manning growth, improve alert response times of coordinated emergency security operations, maximize use of support functions shared between fixed and rotary wing aircraft, and improve mission efficiency while minimizing the impacts on the environment. This need is driven by the requirement from USSTRATCOM mission directives of a 100 percent manned combined arms team that support nuclear weapons movements (convoys) and to have 24/7 Emergency Security Response alert in support of TRF recapture and recovery operations. Both units are currently

[1] 54 U.S.C. § 306108, as implemented by 36 CFR Part 800.
[2] National Environmental Policy Act (NEPA) of 1969 [42 U.S.C. § 4321 *et seq.*]; Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA 40 CFR Parts 1500-1508; and Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989).

increasing their manning; to accommodate the growth, the installation must house them in six different facilities scattered throughout the base.

In addition, the EA includes a No Action Alternative that does not entail construction of the consolidated facility and the continued use of six varying locations positioned throughout Minot AFB. In anticipation of preparation of the EA, Minot AFB has prepared a Draft Final Description of the Proposed Action and Alternatives (DOPAA).

We invite you to submit any comments that you believe would assist us in developing the EA. In order to give your comments, concerns, and suggestions full consideration, we would appreciate receiving your response by December 21, 2018.

Furthermore, please let me know if the Mandan, Hidatsa and Arikara Nation desires to engage in government-to-government consultation on this proposal. In particular, we ask that you share with us any information on properties of religious and cultural significance or any other tribal resource at Minot AFB that may be affected.

If you have any questions or need additional information regarding this action, please feel free to contact me directly at (701) 723-3115. The Minot Installation Tribal Liaison Officer is Ms. Mary Stevenson who can be reached at (701) 723-2205 or via email to 5CES.CENP.NEPA@us.af.mil.

Sincerely

Bradley L Cochran

BRADLEY L. COCHRAN, Colonel, USAF
Commander

Attachment:
DOPAA

Native American Tribes Consulted

The Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) were made available to the tribes listed below during the 30-day review period. A copy of the Tribal Coordination letter is included in this appendix.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 5TH BOMB WING (AFGSC)
MINOT AIR FORCE BASE NORTH DAKOTA

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Ms. Claudia Berg
Director
State Historical Society of North Dakota
612 E Boulevard Avenue
Bismarck ND 58505-0830

Dear Ms. Berg

The purpose of this letter is twofold: to give you an opportunity to review and comment on a proposed action in which the North Dakota State Historic Preservation Office may have an interest; and to invite your agency to participate in government-to-government consultation with Minot Air Force Base (AFB) pursuant to Department of Defense Instruction 4710.02 and Section 106 of the National Historic Preservation Act (NHPA).[1]

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) to capture the potential environmental consequences associated with the 54th Helicopter Squadron, 582nd Helicopter Group and 91st Tactical Response Forces (TRF) Construction of a Consolidated Helicopter / TRF Operations / Aircraft Maintenance Unit and Alert Facility on Minot AFB, 13 miles north of Minot, ND. This EA will, as required by laws and regulations, consider the potential environmental impacts of this construction on approximately 17 acres of the existing flight line.[2]

The goals of constructing a consolidated facility are to provide adequate space for planned manning growth, improve alert response times of coordinated emergency security operations, maximize use of support functions shared between fixed and rotary wing aircrafts, and improve mission efficiency while minimizing the impacts on the environment. This need is driven by the requirement from USSTRATCOM mission directives of a 100% manned combined arms team that support nuclear weapons movements (convoys) and to have 24/7 Emergency Security Response alert in support of TRF recapture/recovery operations. Both units have increased their manning, and to accommodate the growth, the installation must house them in six different facilities scattered throughout the base.

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[1] 54 U.S.C. § 306108, as implemented by 36 CFR Part 800.
[2] National Environmental Policy Act (NEPA) of 1969 [42 U.S.C. § 4321 *et seq.*]; Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA 40 CFR Parts 1500-1508; and Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989).

Building 879, currently the administration building for the 54 HS, would be one of six facilities vacated after construction of the consolidated facility and has been determined eligible for NRHP listing. Demolition is not expected, and it is assumed that the building will have future occupants. However, the building will likely need modifications, such as; new roll up doors, entry doors, interior paint, and upgrades to communication systems and bathrooms to provide a quality workspace for future occupants.

In addition, the EA includes a No Action Alternative that entails no construction of the consolidated facility and the continued use of six varying locations positioned throughout Minot AFB. In anticipation of preparation of the EA, Minot AFB has prepared a Draft Final Description of the Proposed Action and Alternatives (DOPAA).

We invite you to submit any comments that you believe would assist us in developing the EA. In order to give your comments, concerns, and suggestions full consideration, we would appreciate receiving your response by February 15, 2019.

In addition, please let me know if your Agency desires to engage in consultation on this proposal. In particular, we ask that you share with us any information on the property's resources that may be affected.

If you have any questions or need additional information regarding this action, please feel free to contact the Minot AFB Cultural Resource Manager, Mr. Thomas Filkins directly at (701) 723-3436 or via email to 5CES.CENP.NEPA@us.af.mil.

Sincerely

RENETTA J. PEARSON, GS-14, DAF
Deputy Base Civil Engineer

Attachment:
DOPAA

cc:
Ms. Susan Quinnell
Review and Compliance Coordinator
State historical Society of North Dakota
612 E Boulevard Avenue
Bismarck ND 58505-0830

PUBLIC NOTICE

NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL ASSESSMENT AND
PROPOSED FINDING OF NO SIGNIFICANT IMPACT
FOR ESTABLISHMENT OF A NEW CONSOLIDATED HELICOPTER/TACTICAL RESPONSE FORCE AND AIRCRAFT MAINTENANCE UNIT
FOR MINOT AIR FORCE BASE (AFB), NORTH DAKOTA

An Environmental Assessment (EA) has been prepared to analyze the impacts of the establishment of a new consolidated helicopter, Tactical Response Force (TRF) and Aircraft Maintenance Unit at Minot AFB, North Dakota. The purpose of this project is to consolidate all facilities into one location in which the 54th Helicopter Squadron, 582nd Helicopter Group and 91st TRF can improve coordination and efficiencies for the units to perform their mission. The Air Force would utilize an existing portion of the base, Flightline District 4A, located13 miles North of the city of Minot, North Dakota.

The EA, prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations, the Air Force Environmental Impact Assessment Process (EIAP) Regulations in 32 CFR Part 989, and Air Force Instruction (AFI) 32-7061; evaluates potential impacts of the alternative actions on the environment including the No-action Alternative. Based on this analysis, the Air Force has prepared a proposed Finding of No Significant Impact (FONSI).

The Draft EA and proposed FONSI, dated February 2018, are available for review at the following locations:

Minot Public Library (Main Library) 516 2nd Ave SW, Minot, ND 58701 (701)852-1045	Minot AFB Library 156 Missile Ave, Minot AFB, ND 58704 (701) 723-3344
Minot State University Gordon B. Olson Library 700 11th Ave NW, Minot, ND 58703 (701) 858-3201	Ward County Public Library 225 3rd St SE · Minot, ND, 58701 (701) 852-5388

Electronic copies of the documents can also be found on the Minot AFB website at http://www.Minot.AF.Mil/portals....pdf

You are encouraged to submit comments through March 17, 2018.
Comments should be provided via email at 5CES.CENP.NEPA@us.af.mil.

PRIVACY ADVISORY NOTICE

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