Final
Environmental Assessment for Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School
Grand Forks Air Force Base, North Dakota

July 2025

Prepared for:

Grand Forks Air Force Base
Grand Forks Public School District
Grand Forks Air Force Base Public School District No. 140
Office of Local Defense Community Cooperation

Prepared by:

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This study was prepared under contract with Grand Forks Air Force Base Public School District No. 140, with financial support from the Office of Local Defense Community Cooperation, Department of Defense.

The content herein reflects the views of the Grand Forks Air Force Base Public School District No. 140 and does not necessarily reflect the views of the Office of Local Defense Community Cooperation or the Department of Defense.

PRIVACY ADVISORY

This Environmental Assessment (EA) is provided for public comment in accordance with the *National Environmental Policy Act* (NEPA) as amended by the *Fiscal Responsibility Act of 2023* (Public Law 118-5), and United States Department of Defense (DoD) NEPA implementing procedures, which provide an opportunity for public input on DoD decision-making, allow the public to offer inputs on alternative ways for the DoD to accomplish what it is proposing, and solicit comments on the analysis of environmental effects.

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 Personal home addresses and phone numbers will not be published in the EA.

COMPLIANCE

This document has been certified that it does not exceed 75 pages, excluding citations and appendices, in accordance with Paragraph (e)(2) of NEPA (42 USC § 4336a). Generally, a "page" means 500 words and does not include maps, diagrams, graphs, tables, and other means of graphically displaying quantitative or geospatial information.

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)
CONSTRUCTION OF A NEW NATHAN TWINING SCHOOL AND DEMOLITION OF THE EXISTING CARL BEN EIELSON SCHOOL AND EXISTING NATHAN TWINING ELEMENTARY AND MIDDLE SCHOOL – GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

Pursuant to provisions of the *National Environmental Policy Act 1969* (42 *United States Code* § 4321 et seq.) (NEPA), as amended by the *Fiscal Responsibility Act of 2023* (Public Law 118-5), the United States (US) Department of Defense NEPA implementing procedures issued 30 June 2025, and Executive Order (EO) 14154, *Unleashing American Energy* (20 January 2025), the US Department of the Air Force (DAF) and Grand Forks Air Force Base Public School District (GFAFBPSD) assessed the potential impacts on the human environment, including the natural environment, associated with construction of a new Nathan Twining School and demolition of the existing Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School, Grand Forks Air Force Base (GFAFB), North Dakota. Both Carl Ben Eielson School and Nathan Twining Elementary and Middle School are located within GFAFB.

Purpose and Need

The purpose of the Proposed Action is to provide safe and secure school facilities, utilizing funding specifically authorized by Section 8108 of the *Consolidated Appropriations Act of 2023* (Public Law 117-328) that support, rather than detract, from a positive learning environment and that can grow over the next 30 years to support the increase in personnel and their dependents associated with GFAFB's and GrandSKY Business Park's growing missions. Under Public Law 114-328, the Office of Local Defense Community Cooperation (OLDCC) executes assistance on behalf of the US Department of Defense (DoD) to support the design, site preparation, and construction of schools on the Public Schools on Military Installations prioritized list; Nathan Twining Elementary and Middle School is number 70 on this list. Using funds provided by OLDCC, the updated facilities would meet current Unified Facilities Criteria and DoD antiterrorism/force protection (AT/FP) standards, would have the capacity to accommodate approximately 500 students, and would adhere to functional safety standards such as heating, cooling, and facility upgrades and repairs. Since Carl Ben Eielson School was closed in 2014, Nathan Twining Elementary and Middle School has been the sole operational GFAFBPSD school on GFAFB.

The Proposed Action is needed because the current Nathan Twining Elementary and Middle School is not structurally sound, does not meet DoD AT/FP security standards for an educational facility, and does not have the capacity to support an increase in GFAFB personnel and their dependents. In 2018, a facility condition assessment report (FCAR) was conducted to evaluate the existing Nathan Twining Elementary and Middle School. The FCAR determined that the facility had a rating of Q4,[1] the lowest FCAR rating, indicating that the building is in poor condition. The FCAR revealed multiple building systems that were in disrepair beyond the ability to repair and/or renovate.

The Proposed Action is also needed to support GFAFBPSD's objectives to promote a positive learning environment and provide additional facilities to accommodate an increasing number of students beyond the existing facilities' capacity. As of September 2023, the enrollment at Nathan Twining Elementary and Middle School was 294 students from pre-kindergarten through grade 8. Enrollment at installation schools fluctuates, as their primary enrollment is based on the number of active military members residing on the respective military base.

Currently, 145 GFAFB-affiliated students in kindergarten through grade 8 reside in Grand Forks rather than on Base due to the limited available on-Base housing. As a result, these students attend Grand Forks School District (GFSD) #1 schools rather than GFAFBPSD schools. Additionally, there are 30 homeschooled students residing on GFAFB who may choose to enroll part-time or full-time within GFAFBPSD. The district demographer has projected an enrollment increase of 56 students by the 2027/2028 school year. Growth in and around GFAFB, including the expansion of Space Development

[1] The 2018 Facility Condition Assessment Report (FCAR) indicated that the current condition (2018) of Nathan Twining Elementary and Middle School is Q3, with a projected fiscal year 2023 rating of Q4. This report assumes that the facility has continued to degrade as predicted in the FCAR and now has a rating of Q4.

Agency operations and ongoing development at the GrandSKY Business Park, is expected to bring more personnel to the area. GrandSKY Business Park alone anticipates more than 240 additional employees, which may further impact student enrollment at Nathan Twining Elementary and Middle School. Increased school capacity would support the need for increased on-Base housing related to the demands of new and emerging mission objectives.

Description of Proposed Action and Alternatives

The Proposed Action would involve a three-step sequential process: 1) demolition of the unused, vacant Carl Ben Eielson School, 2) construction of a new Nathan Twining School campus, and 3) demolition of the existing Nathan Twining Elementary and Middle School. The new Nathan Twining School campus would include a new school, parking, drop-off lanes, and an athletic field. The new approximately 100,000-square-foot, two-story school would be constructed to accommodate up to 500 students and would incorporate flexibility to support evolving mission requirements and potential growth beyond 30 years. The existing Nathan Twining Elementary and Middle School would remain in use throughout the demolition of Carl Ben Eielson School and construction of the new Nathan Twining School campus. Upon completion of the new campus, the existing Nathan Twining Elementary and Middle School would be demolished.

No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would remain out of compliance with AT/FP security standards. Nathan Twining Elementary and Middle School would continue to operate under unsafe and unsuitable conditions for students and staff.

Further, the No Action Alternative would leave Nathan Twining Elementary and Middle School with enrollment demand beyond its capacity and would not support GFAFBPSD's projected growth over the next 30 years. The additional 145 students in kindergarten through grade 8 that reside in Grand Forks and attend GFSD #1 schools would not have the opportunity to attend a school on GFAFB. The No Action Alternative would not utilize funding available through Section 8108 of the *Consolidated Appropriations Act of 2023* (Public Law 117-328).

Summary of Findings

Potentially affected environmental resources were identified through communications with state and federal agencies and review of past environmental documentation. The attached Environmental Assessment (EA) analyzes potential environmental consequences of the following resource areas: land use; safety and occupational health; air quality and greenhouse gases; biological resources; water resources; geology and soils; cultural resources; hazardous materials and waste, toxic substances, and contaminated sites; infrastructure, including transportation and utilities; noise; socioeconomics; and protection of children.

Land Use

Implementation of the Proposed Action would be consistent with existing land use. No impacts to land use would be expected to occur.

Safety and Occupational Health

Implementation of the Proposed Action would result in no impacts to flight safety, explosives safety, or bird/wildlife aircraft strike hazards would be expected to occur. Short-term, minor, adverse and long-term, minor, beneficial impacts to ground and construction safety would be anticipated to occur from construction and demolition activities that provide necessary upgrades to GFAFBPSD education facilities. Further, long-term, moderate, beneficial impacts to ground safety would occur due to AT/FP compliance; improved traffic signage, traffic markings, crosswalk lighting; and security upgrades at the new Nathan Twining School.

Air Quality and Greenhouse Gases

Implementation of the Proposed Action would result in short-term, minor, adverse impacts to air quality from construction and demolition activities. Impacts to air quality would not be considered significant.

Biological Resources

GFAFBPSD has determined that the Proposed Action would have "no effect" on federally threatened or endangered species or critical habitat. The US Fish and Wildlife Service does not consult on "no effect" determinations. Implementation of the Proposed Action would result in short-term, negligible, adverse impacts and long-term, minor beneficial impacts to vegetation and short-term, minor, adverse impacts to wildlife. Potential impacts resulting from invasive plants and noxious weeds would be minimized through construction best management practices and potential impacts would be localized to the previously developed project sites that would be revegetated with approved plant species reducing the potential for invasive species; therefore, long-term, negligible beneficial impacts to invasive plants and noxious weeds would be expected.

Water Resources

Implementation of the Proposed Action would result in no impacts to surface water, wetlands, or floodplains. Although short-term, minor, adverse impacts to stormwater would be expected to occur. However, the Proposed Action would result in long-term, minor, beneficial impacts to stormwater from improved site drainage. Implementation of the Proposed Action would result in a reduction of overall impervious surfaces within GFAFB. Implementation of the Proposed Action would have the potential to result in long-term, minor, beneficial impacts to groundwater from the removal of abandoned heating fuel underground storage tanks at the project sites, decreased impervious surfaces, and improved groundwater recharge.

Geology and Soils

Implementation of the Proposed Action would result in long-term, minor, adverse impacts to topography, short-term, negligible, adverse and long-term, minor, beneficial impacts to soils, and no impacts to geology. Implementation of the Proposed Action would result in a reduction of overall impervious surfaces within GFAFB, reducing potential erosion and offsite transportation of sediments.

Cultural Resources

The demolition of Carl Ben Eielson School would result in a direct, major, and irreversible adverse effect on historic architectural resources, as it would result in the complete loss of a property eligible for listing in the National Register of Historic Places. The adverse effect would be mitigated through a Memorandum of Agreement among the DAF, the State Historic Preservation Office, and GFAFBPSD. The Memorandum of Agreement was signed by all parties on 18 April 2025. Compliance with the Memorandum of Agreement would result in successful mitigation of historic places, in accordance with 36 CFR § 800.6. There are no archaeological resources or Traditional Cultural Properties within the project area.

Hazardous Materials and Waste, Toxic Substances, and Contaminated Sites

Implementation of the Proposed Action could result in short-term, minor, adverse impacts to hazardous materials and wastes from construction and demolition operations. There would be long-term, moderate, beneficial impacts from the removal of asbestos-containing materials and lead-based paint. Long-term, minor, beneficial impacts to petroleum products would also be anticipated, and short-term, minor, adverse impacts to pesticide management could occur. There would be no impacts to polychlorinated biphenyls, radon, per- and polyfluoroalkyl substances, or environmental restoration sites.

Infrastructure, including Transportation, and Utilities

Implementation of the Proposed Action would result in short-term, negligible, adverse impacts to transportation and communications systems, electricity, natural gas, potable water, and sanitary sewage infrastructure. There would be long-term, negligible, beneficial impacts to transportation systems by locating

the new school closer to the main gate. The Proposed Action would result in short-term, minor, adverse impacts to solid waste management.

Noise

Implementation of the Proposed Action would result in short-term, minor, adverse impacts to noise from intermittent daily construction and demolition activities. The new Nathan Twining School would be located outside of the 65-decibel noise contours associated with the GFAFB airfield.

Socioeconomics

Implementation of the Proposed Action would result in no impacts to population; long-term, minor, beneficial impacts to employment and housing; and short- and long-term, minor, beneficial impacts to employment. Long-term, moderate, beneficial impacts to education would be expected from the improved educational facilities and increased capacity for student enrollment in DoD Education Activity facilities, as well as by potentially freeing up space and resources in GFSD #1 schools.

Protection of Children

Implementation of the Proposed Action would result in long-term, moderate, beneficial impacts related to the protection of children by providing students with a safe and suitable educational facility while removing the risk of potential exposure to asbestos-containing material and lead-based paint. There would be no disproportionate, adverse impacts to children.

Cumulative Impacts

The EA considered cumulative impacts, which are effects on the environment that result from the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions at Grand Forks AFB.

Under the Proposed Action, beneficial cumulative effects to safety and occupational health, water resources, and socioeconomics would be anticipated to occur. When considered in conjunction with the incremental effects of other past, present, and reasonably foreseeable actions at GFAFB, no significant cumulative effects would be anticipated to occur with implementation of the Proposed Action.

Mitigation

The EA analysis concluded that the Proposed Action would result in a direct, major, and irreversible adverse effect on historic architectural resources, as it would result in the complete loss of a property eligible for listing in the National Register of Historic Places. The adverse effect would be mitigated through a Memorandum of Agreement among the DAF, GFAFBPSD, and the State Historic Preservation Office.

Public Review

GFAFBPSD published a notice of availability of the Draft EA and Draft FONSI on 4 and 7 June 2025 in the *Grand Forks Herald* to commence the 30-day public comment period for the Draft EA and Draft FONSI. During the public comment period, the DAF received a comment from the North Dakota Department of Water Resources. **Sections 3.8.2.5** and **3.8.3.2** of the EA were updated to address this comment. This comment as well as all communications to the public are provided in **Appendix A** of the EA.

Conclusion

Finding of No Significant Impact. After review of the attached EA prepared in accordance with the requirements of NEPA, I have determined that with the mitigations and best management practices outlined herein, the Proposed Action would not have a significant impact on the quality of the human environment, including the natural environment. Accordingly, an Environmental Impact Statement will not be prepared.

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MATTHEW T. OLSON, Lt Col, USAF DATE
Chief, Civil Engineer Division
HQ ACC/A4C, JBLE

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COVER SHEET
Final Environmental Assessment for
Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School at Grand Forks Air Force Base, North Dakota

a. *Responsible Agency: Grand Forks Air Force Base Public School District and the United States Department of the Air Force*

b. *Location: Grand Forks Air Force Base, North Dakota*

c. *Designation: Final Environmental Assessment*

d. *Point of Contact:* Jonathan Ellwein, Grand Forks Schools, via email: jellwein180@mygfschools.org or phone: 701.746.2205 ext. 7177

Abstract:

The United States (US) Department of the Air Force (DAF) at Grand Forks Air Force Base (GFAFB) and the Grand Forks Air Force Base Public School District (GFAFBPSD) have prepared this Environmental Assessment (EA) in accordance with the *National Environmental Policy Act* (NEPA) as amended by the *Fiscal Responsibility Act of 2023* (Public Law 118-5), the US Department of Defense NEPA implementing procedures issued 30 June 2025, and Executive Order 14154, *Unleashing American Energy* (20 January 2025). The EA evaluates the potential impacts of its Proposed Action of the construction of a new Nathan Twining Elementary and Middle School and Demolition of the Existing Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School at GFAFB.

Carl Ben Eielson School was decommissioned in 2014 with the student population becoming consolidated to Nathan Twining Elementary and Middle School. The purpose of the Proposed Action in this EA is to provide a safe and secure GFAFBPSD learning environment that supports rather than detracts from a positive learning environment and can grow over the next 30 years to support the increase in personnel and their dependents associated with GFAFB's and GrandSKY Business Park's growing missions. The Proposed Action is needed because the current Nathan Twining Elementary and Middle School is not structurally sound, does not meet Unified Facilities Criteria and Department of Defense antiterrorism/force protection security standards for an educational facility and does not have the capacity to support an increase in GFAFB personnel and their dependents.

Potentially affected environmental resources under the Proposed Action were identified in coordination with local, state, and federal agencies. Specific environmental resources with the potential for environmental consequences include land use; safety and occupational health; air quality and greenhouse gases; biological resources; water resources; geology and soils; cultural resources; hazardous materials and waste, toxic substances, and contaminated sites; infrastructure, including transportation and utilities; noise; socioeconomics; and protection of children.

The analysis of the affected environment and environmental consequences of implementing the Proposed Action concluded that by implementing standing environmental protection measures, best management practices, and implementation of a Memorandum of Agreement, significant, adverse impacts from the Proposed Action on the resource areas analyzed would be reduced to below significant levels. Further, significant cumulative effects would not be anticipated from activities associated with the Proposed Action when considered with past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB.

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ACRONYMS AND ABBREVIATIONS

ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACP	access control point
AFB	Air Force Base
AFFF	aqueous film-forming foam
AFI	Air Force Instruction
AHERA	Asbestos Hazard Emergency Response Act
AMSL	above mean sea level
APE	Area of Potential Effects
APZ	accident potential zone
AQCR	Air Quality Control Region
AST	above-ground storage tank
AT/FP	antiterrorism/force protection
BASH	Bird/Wildlife Aircraft Strike Hazard
BCA	Beaver Creek Archaeology, Inc.
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CVI	commercial vehicle inspection
CWA	Clean Water Act
CZ	clear zone
DAF	Department of the Air Force
DAFI	Department of the Air Force Instruction
DAFMAN	Department of the Air Force Manual
dB	decibel
dBA	A-weighted decibels
DNL	Day-Night Average Sound Level
DoD	Department of Defense
DoDEA	Department of Defense Education Activity
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESQD	explosives safety quantity-distance
°F	degree Fahrenheit
FCAR	Facility Condition Assessment Report
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FRA	Fiscal Responsibility Act
ft^2	square foot/feet
GFAFB	Grand Forks Air Force Base
GFAFBPSD	Grand Forks Air Force Base Public School District
GFPS	Grand Forks Public Schools
GFSD	Grand Forks School District
GHG	greenhouse gases
GIS	geographic information systems
HAZMAT	hazardous materials

HWMP	Hazardous Waste Management Plan
ICRMP	Integrated Cultural Resources Management Plan
IDP	Installation Development Plan
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
ISWMP	Integrated Solid Waste Management Plan
kV	kilovolts
LBP	lead-based paint
$\mu g/m^3$	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NDDH	North Dakota Department of Health
NDDEQ	North Dakota Department of Environmental Quality
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
OLDCC	Office of Local defense Community Cooperation
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyls
pCi/L	picocuries per liter
PFAS	per- and polyfluoroalkyl substances
$PM_{2.5}$	fine particulate matter
PM_{10}	course particulate matter
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SAP	satellite accumulation point
SARA	Superfund Amendments and Reauthorization Act
SCP	Species of Conservation Priority
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SO_2	sulfur dioxide
TCP	Traditional Cultural Property
tpy	tons per year
TSCA	Toxic Substances Control Act
UFC	Unified Facilities Criteria
US-2	United States Highway 2
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound
WOTUS	Waters of the United States

CHAPTER 1 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

Grand Forks Air Force Base Public School District (GFAFBPSD) operates Nathan Twining Elementary and Middle School and Carl Ben Eielson School, both located within the boundaries of Grand Forks Air Force Base (GFAFB) in Grand Forks County, North Dakota (**Figure 1-1**). GFAFBPSD proposes to demolish both schools and construct a new Nathan Twining School campus.

The United States (US) Department of the Air Force (DAF) at GFAFB and GFAFBPSD have prepared this Environmental Assessment (EA) to evaluate the potential environmental impacts of the proposed demolition of the two existing schools and the construction of a new school campus. This document was prepared in accordance with the *National Environmental Policy Act of 1969* (42 *United States Code* [USC] § 4321 et seq.) (NEPA), as amended by the *Fiscal Responsibility Act of 2023* (Public Law 118-5); the US Department of Defense (DoD) NEPA implementing procedures issued 30 June 2025; and Executive Order (EO) 14154, *Unleashing American Energy* (20 January 2025). To render this document more concise, links are provided to online data sources to which the reader can refer for more information.

These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. Demolition of Carl Ben Eielson School and Nathan Twining Elementary and Middle School and construction of the new Nathan Twining School would only commence upon satisfactory completion of this EA and issuance of a Finding of No Significant Impacts (FONSI).

1.2 LOCATION

1.2.1 Carl Ben Eielson and Nathan Twining Elementary and Middle Schools

Both Carl Ben Eielson School and Nathan Twining Elementary and Middle School are located within GFAFB. Prior to its closure in 2014, Carl Ben Eielson School operated on a 17-acre parcel approximately 0.75 miles south of the current site of Nathan Twining Elementary and Middle School, bounded by Louisiana Street to the west, Base housing to the north and south, and 25th Street NE to the east (**Figure 1-2**). The Nathan Twining Elementary and Middle School campus is located on approximately 15 acres of GFAFBPSD-leased property within GFAFB and is bounded by Louisiana Street to the west, Base housing to the north, open land to the south, and 25th Street NE to the east (**Figure 1-3**).

GFAFB is located in Grand Forks County, North Dakota, near the North Dakota-Minnesota state line. According to the United States Census Bureau (USCB), the county has a total area of 1,440 square miles and had a population of 72,764 persons in 2023 (USCB, 2023a, 2024). The City of Grand Forks serves as the county seat and incorporates an area of 19.91 square miles. GFAFB is 15 miles west of the City of Grand Forks, encompassing 5,151 acres in an otherwise rural area. US Highway 2 (US-2) forms the southern edge of GFAFB, separating the Base from the city of Emerado, a small community of 443 people, just south of the eastern boundary of the Base.

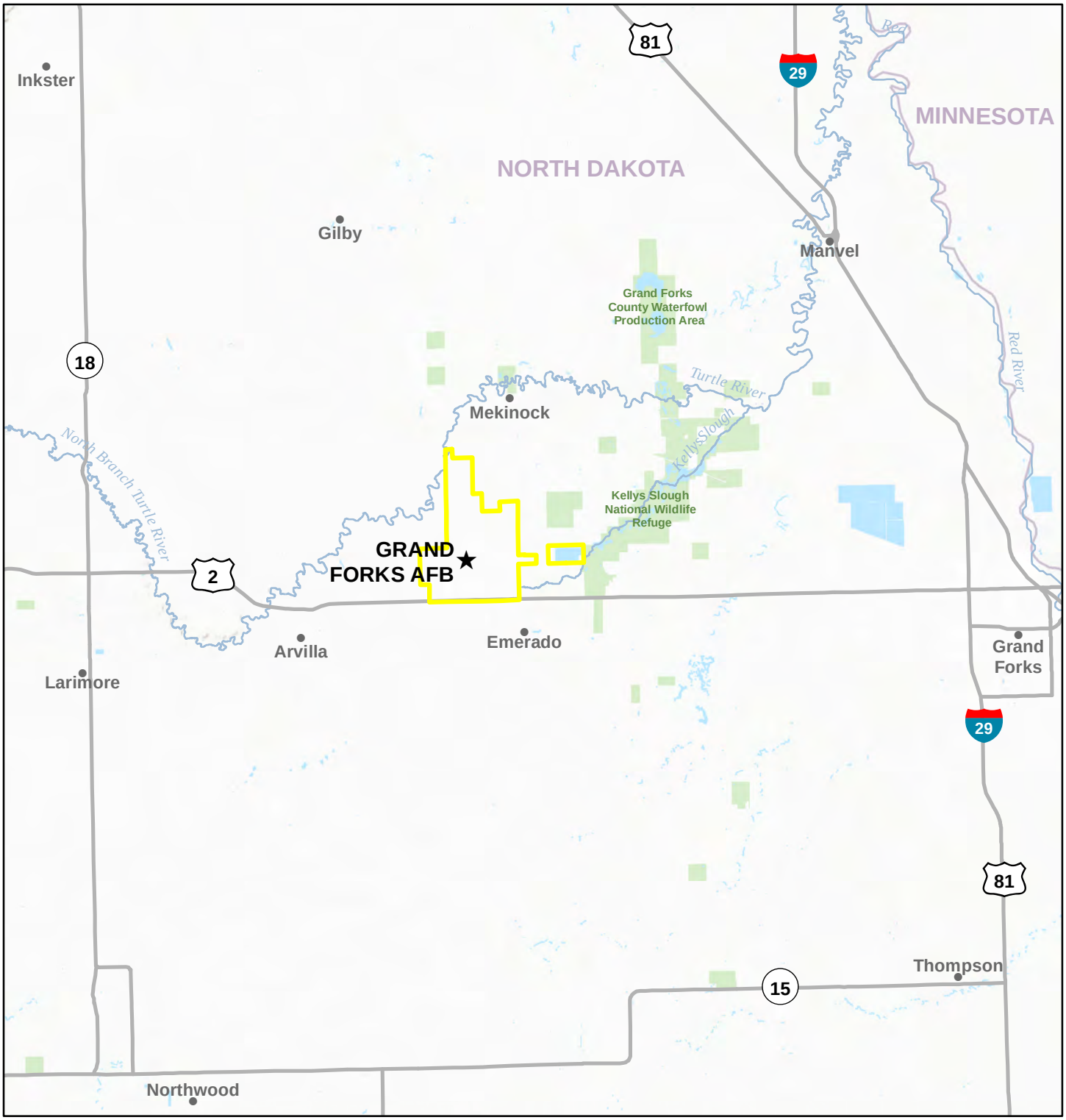


FIGURE 1-1
Regional Location

Installation Boundary

N

0 5 Miles

Imagery: ESRI, 2021
Coordinate System: WGS 1984 UTM Zone 14N

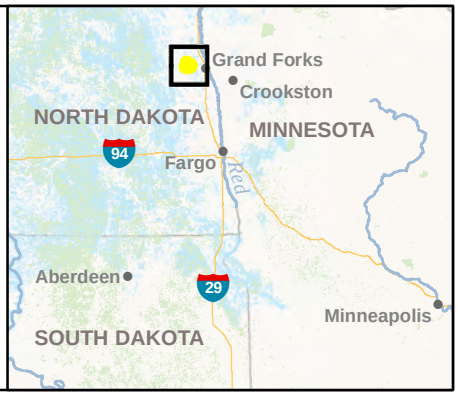


FIGURE 1-2
Carl Ben Eielson School

Installation Boundary

Project Site

N

0 500 Feet

Imagery: Maxar, 2020
Coordinate System: WGS 1984 UTM Zone 14N

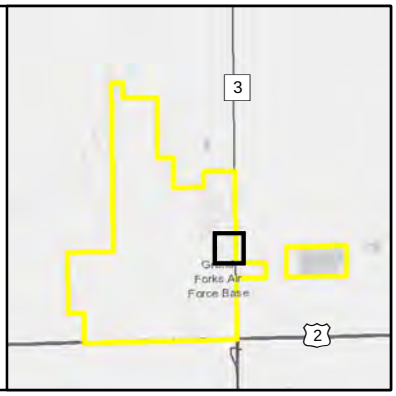


FIGURE 1-3
Existing Nathan Twining Elementary and Middle School

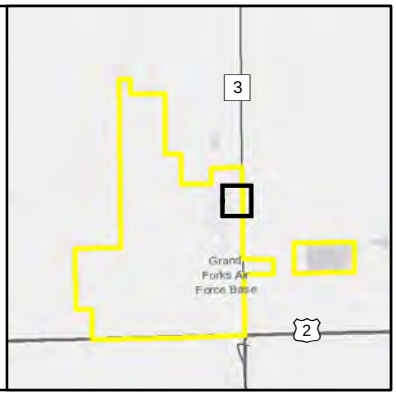
Installation Boundary

Project Site

N

0 500 Feet

Imagery: Maxar 2020, 2021
Coordinate System: WGS 1984 UTM Zone 14N



1.2.2 Background

Nathan Twining Elementary and Middle School has been in continuous operation since 1962. Upon initial construction in 1962, Nathan Twining Elementary and Middle School was a one-story building with 16 classrooms, hosting kindergarten through grade 8 students. A 1964 22-classroom addition included a two-story wing, expanding capacity of the school. A seven-classroom, one-story addition was added to the north side of the school in 1966, followed by the addition of a gymnasium in 2003.

Carl Ben Eielson School was constructed in 1959 with 18 classrooms and hosted kindergarten through grade 8 students. A 1965 addition was added to the east rear of the school and included two octagonal wings. In 1972, increases in enrollment resulted in a transition of Carl Ben Eielson's grade 7 and grade 8 students to Nathan Twining Elementary and Middle School. In 1996, grade 6 was also transitioned to Nathan Twining Elementary and Middle School. By 2001, Carl Ben Eielson housed kindergarten through grade 3 students, and Nathan Twining Elementary and Middle School housed grade 4 through grade 8 students. Carl Ben Eielson School was operational from 1960 through the 2013/2014 school year. At the end of the 2013/2014 school year, Carl Ben Eielson School was closed and the student population was consolidated into Nathan Twining Elementary and Middle School for the start of the 2014/2015 school year (Nathan Twining Elementary & Middle School, 2024).

1.3 Purpose and Need

The purpose of the Proposed Action is to provide safe and secure school facilities, utilizing funding specifically authorized by Public Law 117-328, Section 8108, *Consolidated Appropriations Act of 2023*, that support, rather than detract, from a positive learning environment and that can grow over the next 30 years to support the increase in personnel and their dependents associated with GFAFB's and GrandSKY Business Park's growing missions. Under Public Law 114-328, the Office of Local Defense Community Cooperation (OLDCC) executes assistance on behalf of the US Department of Defense (DoD) to support the design, site preparation, and construction of schools on the Public Schools on Military Installations prioritized list; Nathan Twining Elementary and Middle School is number 70 on this list. Using funds provided by OLDCC, the updated facilities would meet current antiterrorism/force protection (AT/FP) standards per Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*, and DoD Instruction (DoDI) 2000.16, *DoD Antiterrorism Standards*, would have the capacity to accommodate approximately 500 students, and would adhere to functional safety standards such as heating, cooling, and facility upgrades and repairs (GFAFBPSD, 2024a, 2024b). Since Carl Ben Eielson School was closed in 2014, Nathan Twining Elementary and Middle School has been the sole operational GFAFBPSD school on GFAFB.

The Proposed Action is needed because the current Nathan Twining Elementary and Middle School is not structurally sound, does not meet GFAFB AT/FP security standards for an educational facility, and does not have the capacity to support an increase in GFAFB personnel and their dependents. In 2018, a facility condition assessment report (FCAR) was conducted to evaluate the existing Nathan Twining Elementary and Middle School. The FCAR determined that the facility had a rating of Q4,[1] the lowest FCAR rating, indicating that the building is in poor condition. The FCAR revealed multiple building systems that were in disrepair beyond the ability to repair and/or renovate (GFAFBPSD, 2018a).

The Proposed Action is also needed to support GFAFBPSD's objectives to promote a positive learning environment and provide additional facilities to accommodate an increasing number of students beyond the existing facilities' capacity. As of September 2023, the enrollment at Nathan Twining Elementary and Middle School was 294 students from pre-kindergarten through grade 8 (GFAFBPSD, 2024b). Enrollment at Installation schools fluctuates, as their primary enrollment is based on the number of active military members residing on the respective military base.

Currently, 145 GFAFB-affiliated students in kindergarten through grade 8 reside in Grand Forks rather than on Base due to the limited available on-Base housing. As a result, these students attend GFSD #1 schools

[1] The 2018 Facility Condition Assessment Report (FCAR) indicated that the current condition (2018) of Nathan Twining Elementary and Middle School is Q3, with a projected fiscal year 2023 rating of Q4. This report assumes that the facility has continued to degrade as predicted in the FCAR and now has a rating of Q4.

rather than GFAFBPSD schools. Additionally, there are 30 homeschooled students residing on GFAFB who may choose to enroll part-time or full-time within GFAFBPSD. The district demographer has projected an enrollment increase of 56 students by the 2027/2028 school year. Growth in and around GFAFB, including the expansion of Space Development Agency operations and ongoing development at the GrandSKY Business Park, is expected to bring more personnel to the area. GrandSKY Business Park alone anticipates more than 240 additional employees, which may further impact student enrollment at Nathan Twining Elementary and Middle School. Increased school capacity would support the need for increased on-Base housing related to the demands of new and emerging mission objectives.

1.4 INTERGOVERNMENTAL COORDINATION, PUBLIC AND AGENCY PARTICIPATION

NEPA guidance includes public and agency review of information pertinent to proposed actions and alternatives. As part of the scoping process, the DAF notified federal, state, and local agencies and tribal governments with jurisdiction that could potentially be affected by the Proposed Action and Alternatives via written correspondence during the development of this EA. A mailing list of the recipients of this correspondence as well as a sample of the outgoing letters and all responses are included in **Appendix A**.

1.4.1 Government-to-Government Consultation

The *National Historic Preservation Act* (54 USC § 300101 et seq.) (NHPA) and implementing regulations at 36 *Code of Federal Regulations* (CFR) Part 800 direct federal agencies to consult with federally recognized Native American Tribes when a Proposed Action or Alternatives may have an effect on tribal lands or on properties of religious and cultural significance to a tribe. Consistent with the NHPA, the *Native American Graves Protection and Repatriation Act* (25 USC § 3001 et seq.) (NAGPRA), DoDI 4710.02, *DoD Interactions with Federally Recognized Tribes*, and DAF Instruction (DAFI) 90-2002, *Interactions with Federally Recognized Tribes*, the DAF invited federally recognized tribes that are historically affiliated with lands in the vicinity of the Proposed Action and Alternatives to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation and requires separate notification to all relevant tribes. The timelines for tribal consultation are also distinct from those of NEPA consultation. The GFAFB point of contact for Native American Tribes is the Base Commander. The point of contact for consultation with the Tribal Historic Preservation Officer and the State Historic Preservation Officer (SHPO) is the GFAFB Cultural Resources Manager.

NHPA Section 106, DAF Manual (DAFMAN) 32-7003, *Environmental Conservation*, and DAFI 90-2002 require that GFAFB engage in government-to-government consultation between the DAF and federally listed or affiliated tribes if requested and agreed to by the pertinent tribe(s) and that the consultation process be completed prior to fully finalizing the EA.

1.4.2 Agency Consultations and Coordination

Implementation of the Proposed Action involves coordination with several organizations and agencies. Compliance with Section 7 of the *Endangered Species Act of 1973*, as amended (16 USC § 1531 et seq.) (ESA), and implementing regulations (50 CFR Part 402) requires communication with the US Fish and Wildlife Service (USFWS) and/or National Oceanic and Atmospheric Administration National Marine Fisheries Service. On 6 March 2025, the DAF initiated Section 7 consultation under the ESA for the Proposed Action using the USFWS's Information for Planning and Consultation (IPaC) tool. Basic information concerning the location and nature of the projects included in the Proposed Action was input into IPaC to obtain an official species list from the USFWS. The list identifies threatened and endangered species and other protected species (e.g., migratory birds) with the potential to be affected by the Proposed Action. This information is included in **Appendix A** and incorporated into this EA where applicable. Analysis of the Proposed Action resulted in a DAF determination of "no effect" for threatened and endangered species. The USFWS does not consult on "no effect" determinations.

The DAF also coordinated with state agencies regarding potential effects from the Proposed Action and Alternatives. Compliance with Section 106 of the NHPA and implementing regulations (36 CFR Part 800) requires that the SHPO be given the opportunity to concur on determinations of eligibility and effects. The

GFAFB Cultural Resources Program is responsible for consultation with the SHPO on the Proposed Action. On 7 November 2024, GFAFB received concurrence from the SHPO that Carl Ben Eielson School is eligible for listing in the National Register of Historic Places (NRHP) and Nathan Twining Elementary and Middle School is not eligible for listing in the NRHP. A Memorandum of Agreement (MOA) for the proposed demolition of Carl Ben Eielson School was signed by all parties on 18 April 2025 (**Appendix B**).

1.5 Public and Agency Review

GFAFBPSD invited the public and other interested stakeholders to review and comment on the Draft EA and the Draft FONSI. Accordingly, a notice of availability of the Draft EA and Draft FONSI was published in the *Grand Forks Herald* on 4 and 7 June 2025 to commence a 30-day public comment period (**Appendix C**).

During the public comment period, the Draft EA and Draft FONSI were made available online for view or download at http://www.grandforks.af.mil/. Additionally, printed copies of the Draft EA and Draft FONSI were available at the following area libraries for review:

- Grand Forks Public Library, 2110 Library Circle, Grand Forks
- University of North Dakota Chester Fritz Library, 3051 University Ave, Grand Forks
- University of North Dakota Legal Library (Thormodsgard Law Library), 2968 2nd Ave., Grand Forks
- North Dakota State University Library, 1201 Albrecht Boulevard, Fargo

Public comment opportunities were supplemented by GFAFBPSD's direct outreach to stakeholders, including parents and local officials, as necessary. During the public comment period, the DAF received a comment from the North Dakota Department of Water Resources (**Appendix A**). **Sections 3.8.2.5** and **3.8.3.2** of the EA were updated to address the comment.

1.6 Decision to be Made

This EA analyzes the potential environmental consequences of the Proposed Action and Alternatives. The Proposed Action involves new facility construction; new pavements construction; and demolition of an NRHP-eligible facility. Should GFAFBPSD choose to implement the Proposed Action, this EA will assist in determining an appropriate scope of action to minimize potential adverse environmental impacts and allow for additional environmental review in compliance with NEPA.

Based on the analysis in this EA, GFAFBPSD will make one of three decisions regarding the Proposed Action:

1. Choose to implement one of the alternatives and sign a mitigated FONSI, allowing implementation of the Proposed Action;
2. Initiate preparation of an Environmental Impact Statement (EIS) if it is determined that implementation of the Proposed Action and Alternatives would cause significant impacts to the human environment, including the natural environment; or
3. Select the No Action Alternative, whereby the Proposed Action would not be implemented.

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

Should GFAFBPSD decide to implement the Proposed Action as noted above, this EA will identify any actions that GFAFBPSD will commit to undertake to minimize environmental effects and comply with NEPA.

1.7 Scope of the Environmental Assessment

This EA evaluates the potential environmental consequences of implementing the Proposed Action and Alternatives for construction and demolition at GFAFB. This EA has been prepared in accordance with

NEPA and DoD NEPA implementing procedures. NEPA is the basic national requirement for identifying environmental consequences of federal decisions. NEPA ensures that environmental information, including the anticipated environmental consequences of a proposed action, is available to the public, federal and state agencies, and the decision-maker before decisions are made and before actions are taken.

This EA is organized into the following sections:

- Chapter 1, Purpose and Need for Action, includes an introduction and background on the project, location, purpose and need statements, intergovernmental coordination and public and agency participation, decision to be made, and scope of the EA.
- Chapter 2, Description of the Proposed Action and Alternatives, includes a description of the Proposed Action, selection standards for alternatives, a description of the selected alternatives, application of selection standards, alternatives considered but eliminated from detailed analysis, a summary of potential environmental consequences, and any mitigation and environmental commitments.
- Chapter 3, Affected Environment and Environmental Consequences, includes a description of the natural and built environments within and surrounding the proposed project activities that may be affected by the Proposed Action and Alternatives. This chapter also includes a discussion of direct, indirect, and cumulative effects.
- Chapter 4, List of Preparers, provides a list of the preparers of this EA.
- Chapter 5, References, contains references for studies, data, and other resources used in the preparation of this EA.
- Appendices, as required, provide relevant correspondence, studies, modeling results, and public review information.

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action would involve a three-step sequential process: 1) demolition of the unused, vacant Carl Ben Eielson School, 2) construction of a new Nathan Twining School campus (**Figure 2-1**), and 3) demolition of the existing Nathan Twining Elementary and Middle School. As described in Air Force Form 813, *Request for Environmental Impact Analysis*, the new Nathan Twining School campus would include a new school, parking, drop-off lanes, and an athletic field. The new approximately 100,000 square foot (ft^2), two-story school would be constructed to accommodate up to 500 students and would incorporate flexibility to support evolving mission requirements and potential growth beyond 30 years (**Appendix D**). The existing Nathan Twining Elementary and Middle School would remain in use throughout the demolition of Carl Ben Eielson School and construction of the new Nathan Twining School campus. Upon completion of the new campus, the existing Nathan Twining Elementary and Middle School would be demolished.

Final designs for the new Nathan Twining School would be determined by GFAFBPSD, GFAFB, and their funding partners. At a maximum, the new Nathan Twining School would feature learning neighborhoods grouped as early childhood learning (ages 3–5 that have not yet entered kindergarten), kindergarten through grade 5, and grade 6 through grade 8. The school also would feature new gymnasiums for both elementary and middle school students and a dedicated administrative area. The new campus would be designed to address FCAR deficiencies and meet federal and DoD AT/FP compliancy standards as well as meet energy and environmental requirements set forth by the DoD for construction of new military buildings (US Army Corps of Engineers [USACE], 2023) and in accordance with EO 14154.

Compliance with AT/FP regulations would be achieved through the addition of a secure vestibule for visitor control, secure entryways, an updated security system, a video surveillance system, and an intrusion-detection system. Impact barriers would be constructed at the new Nathan Twining School at locations identified by Security Forces. Empty, abandoned underground heating fuel tanks are located adjacent to each school. Demolition under the Proposed Action would involve the removal of these tanks (GFAFBPSD, 2024b).

2.2 SELECTION STANDARDS FOR ALTERNATIVE SCREENING

Consistent with NEPA and DoD NEPA implementing procedures, selection standards were developed to establish a means for determining the reasonableness of an alternative to the Proposed Action and whether an alternative should be carried forward for further analysis in this EA. Potential alternatives to the Proposed Action were evaluated based on universal selection standards, which were applied to all alternatives. The following selection standards meet the purpose of and need for the Proposed Action and were used to identify reasonable alternatives for analysis in the EA. Each alternative must:

1. meet current AT/FP safety and security standards;
2. provide capacity for up to 500 students;
3. provide a safe learning environment with modern, up-to-date facilities that facilitate a positive learning environment;
4. provide undisrupted education for students attending Nathan Twining Elementary and Middle School;
5. provide a walkable and accessible school for on-Base students; and
6. utilize funding specifically authorized by Public Law 117-328, Section 8108, *Consolidated Appropriations Act of 2023*.

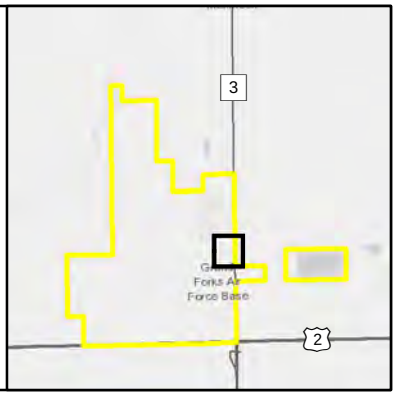
Based on the selection standards, two alternatives for the Proposed Action were considered. A discussion of alternatives retained for detailed analysis is provided in **Section 2.4** and discussion of alternatives considered but eliminated from further analysis is provided in **Section 2.5.**

FIGURE 2-1
Proposed Nathan Twining School Location

Installation Boundary
Proposed Nathan Twining School
Project Site

N
0 500 Feet

Imagery: Maxar, 2020
Coordinate System: WGS 1984 UTM Zone 14N



All components of the new Nathan Twining School would be located within the Project Site as shown in Figure 2-1 (above). Data provided by JLG Architects.

2.3 DESCRIPTION OF ALTERNATIVES

NEPA and DoD NEPA implementing procedures mandate the consideration of reasonable alternatives to the Proposed Action. "Reasonable alternatives" are those that meet the underlying purpose of and need for the Proposed Action and that would cause a reasonable person to inquire further before choosing a particular course of action. The DAF uses several guidelines and instructions in determining the best approach for construction, renovation, and demolition. Air Force Instruction (AFI) 32-1023, *Designing and Constructing Military Construction Projects*, implements Air Force Policy Directive 32-10, *Installations and Facilities*, and Military Standard 3007F, *Standard Practice for Unified Facilities Criteria and Unified Facilities Guide Specifications*. AFI 32-1023 provides general design criteria and standards and information on design and construction management. This document provides guidance governing DAF military construction projects. DAFMAN 32-1084, *Standard Facility Requirements*, provides guidance for determining space allocations for DAF facilities and may be used for new facilities or evaluate existing spaces.

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

2.3.1 Alternative 1 – Proposed Action

The components of Alternative 1, the Proposed Action, are described in detail in **Section 2.1**. Under Alternative 1, the proposed new Nathan Twining School would be constructed on the grounds of the demolished Carl Ben Eielson School. Alternative 1, the Proposed Action, meets the selection standards described in **Section 2.2**.

2.3.2 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would remain out of compliance with AT/FP security standards. Nathan Twining Elementary and Middle School would continue to operate under unsafe and unsuitable conditions for students and would continue to degrade as described in the 2018 FCAR report.

Further, the No Action Alternative would leave Nathan Twining Elementary and Middle School with enrollment demand beyond its capacity and would not support GFAFBPSD's projected growth over the next 30 years. The additional 145 students in kindergarten through grade 8 that reside in Grand Forks and attend GFSD #1 schools would not have the opportunity to attend a school on GFAFB. The No Action Alternative would not utilize funding available through Public Law 117-328, Section 8108, *Consolidated Appropriations Act of 2023*.

While the No Action Alternative would not satisfy the purpose of and need for the Proposed Action, this alternative is retained to provide a comparative baseline against which to analyze the effects of the Proposed Action.

2.4 ALTERNATIVES RETAINED FOR DETAILED ANALYSIS

Alternative 1 and the No Action Alternative, as described above, are retained in this EA for detailed analysis. Each component of the Proposed Action, as Alternative 1, are evaluated in detail in **Chapter 3**.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

GFAFBPSD considered renovating the existing Carl Ben Eielson and Nathan Twining Elementary and Middle Schools. This alternative ultimately was eliminated because GFAFBPSD determined that renovation would not address the structural or safety concerns associated with the existing structures. In addition, conducting renovation when the schools are occupied would disrupt learning.

Further, a 2018 FCAR evaluated both Nathan Twining Elementary and Middle School and Carl Ben Eielson School for the possibility of renovation. The facility assessment determined that both Nathan Twining Elementary and Middle School and Carl Ben Eielson School had a quality and condition rating of Q4. A rating of Q4 is the lowest score and indicates that a facility is beyond the ability of renovation or repair and is recommended for complete demolition (GFAFBPSD, 2018a, 2018b).

GFAFBPSD also considered siting the new Nathan Twining School east of County Road B-3 (25th Street NE) in an area previously used for a housing development called Sunflake Housing. GFAFBPSD eliminated this alternative due to safety concerns. Under this alternative, the new school campus would be located outside of the GFAFB gates, which would require on-Base students to leave the Base to access school property and cross a county road, presenting a safety concern. Based on these conclusions, renovation would not address Selection Standards 1, 3, and 4 and siting the new Nathan Twining School at the previous Sunflake Housing development would not satisfy Selection Standards 3 and 5, as described in **Section 2.3**. Therefore, both considered alternatives were eliminated from detailed analysis.

2.6 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 2-1 summarizes the potential impacts that could result with implementation of the Proposed Action and the No Action Alternative. The summary is based on the analysis described in detail in **Chapter 3** of this EA and includes a concise definition of the issues addressed and the potential environmental impacts that could result from the Proposed Action or No Action Alternative.

Table 2-1
Summary of Environmental Consequences

Resource Area	Alternative 1 – Proposed Action	No Action Alternative
Land Use	Implementation of the Proposed Action would be consistent with existing land use. No impacts to land use would be expected to occur.	No impacts to land use would be expected to occur.
Safety	Implementation of the Proposed Action would result in no impacts to flight safety, explosives safety, or BASH. Short-term, minor, adverse and long-term, minor, beneficial impacts to ground and construction safety would be anticipated to occur from construction and demolition activities. Further, long-term, moderate, beneficial impacts to ground safety would occur due to antiterrorism/ force protection compliance; traffic signage, traffic markings, and crosswalk lighting improvements; and security upgrades at the new Nathan Twining School.	Long-term, moderate adverse impacts to ground and construction safety would be expected to occur due to the continued deterioration of both Carl Ben Eielson School and the existing Nathan Twining Elementary and Middle School. There would be no impacts to flight safety, explosives safety, BASH.

Resource Area	Alternative 1 – Proposed Action	No Action Alternative
Air Quality	Implementation of the Proposed Action would result in short-term, minor, adverse impacts to air quality from construction and demolition activities. Impacts to air quality would not be considered significant.	No impacts to regional air quality would be expected to occur.
Biological Resources	Implementation of the Proposed Action would result in short-term, negligible, adverse and long-term, minor beneficial impacts to vegetation and short-term, minor, adverse impacts to wildlife. There would be no effects to threatened, endangered, and other protected species. Potential impacts from invasive plants and noxious weeds would be minimized through the use of construction best management practices; potential impacts would be localized to the previously developed project sites, which would be revegetated with approved plant species, reducing the potential for invasive species; therefore, long-term, negligible beneficial impacts to invasive plants and noxious weeds would be expected.	No impacts to biological resources would be expected to occur.
Water Resources	Implementation of the Proposed Action would result in no impacts to surface water, wetlands, or floodplains. Although short-term, minor, adverse impacts to stormwater would be expected to occur, the Proposed Action would result in long-term, minor, beneficial impacts to stormwater from improved site drainage. Implementation of the Proposed Action would result in a reduction of overall impervious surfaces within GFAFB. Implementation of the Proposed Action would have the potential to result in long-term, minor, beneficial impacts to groundwater from the removal of abandoned heating fuel tanks at the project sites, decreased impervious surfaces, and improved groundwater recharge.	No impacts to water resources would be expected to occur.

Resource Area	Alternative 1 – Proposed Action	No Action Alternative
Geology and Soils	Implementation of the Proposed Action would result in long-term, minor, adverse impacts to topography and short-term, negligible, adverse and long-term, minor, beneficial impacts to soils; there would be no impacts to geology. Implementation of the Proposed Action would result in a reduction of overall impervious surfaces within GFAFB, reducing potential erosion and offsite transportation of sediments.	No impacts to geological resources would be expected to occur.
Cultural Resources	The demolition of Carl Ben Eielson School would result in a direct, major, and irreversible adverse effect to historic architectural resources, as it would result in the complete loss of a property eligible for listing in the NRHP. The adverse effect would be mitigated through a MOA among the DAF, the State Historic Preservation Office, and the GFAFBPSD. There would be no adverse effects to archaeological resources or traditional cultural properties.	Long-term, indirect, moderate, adverse effects to Carl Ben Eielson School would occur. Carl Ben Eielson School, which is eligible for listing in the NRHP, would not be demolished but would remain vacant and unmaintained. Over time, exposure to the elements, lack of maintenance, and potential vandalism would result in the gradual deterioration of the building's structural integrity and character-defining features. This process, commonly referred to as "demolition by neglect," would lead to a progressive loss of the property's historic integrity, including aspects of design, materials, and workmanship. As a result, the school building could eventually lose its eligibility for NRHP listing.
Hazardous Materials and Wastes, Toxic Substances, and Contaminated Sites	Construction and demolition activities under the Proposed Action could result in short-term, minor, adverse impacts to hazardous materials and wastes from construction and demolition operations; there would be long-term, moderate beneficial, impacts from the removal of ACM and LBP. Long-term, minor beneficial impacts to petroleum products would be anticipated and short-term, minor, adverse impacts to pesticide management could occur. There would be no impacts to polychlorinated biphenyls, radon, per- and polyfluoroalkyl substances, and environmental restoration sites.	Long-term, moderate, adverse impacts would be expected to occur, as ACM and LBP would remain present in the school facilities and the risk of exposure would not be abated. Further, abandoned heating fuel USTs would remain in place and pose a future leak risk.

Resource Area	Alternative 1 – Proposed Action	No Action Alternative
Infrastructure, including Transportation and Utilities	Implementation of the Proposed Action would result in short-term, negligible, adverse impacts to transportation and communications systems, electricity, natural gas, potable water, and sanitary sewage infrastructure; there would be short-term, minor, adverse impacts to solid waste management. There would be long-term, minor beneficial impacts to transportation systems by locating the new school closer to the main gate. The Proposed Action would result in short-term, minor, adverse impacts to solid waste management.	No impacts to infrastructure, transportation, and utilities would be expected to occur.
Noise	Implementation of the Proposed Action would result in short-term, minor, adverse impacts to noise from intermittent daily construction and demolition activities. The new Nathan Twining School would be located outside of the 65-decibel noise contours associated with the GFAFB airfield.	No impacts to noise would be expected to occur.
Socioeconomics	Implementation of the Proposed Action would result in long-term, minor, beneficial impacts to population, employment, and housing, and short- and long-term, minor, beneficial impacts to employment. Long-term, moderate, beneficial impacts to education would be expected to occur by improving educational facilities and increasing capacity for student enrollment in DoD Education Activity facilities, and by potentially making additional space and resources available in GFSD #1 schools.	Long-term, moderate, adverse impacts to DoD Education Activity resources would be expected to occur due to the sub-par physical conditions of the existing Nathan Twining Elementary and Middle School. Long-term, minor, adverse impacts also would be expected to occur due to the limited capacity at the existing Nathan Twining Elementary and Middle School. There would be no impacts to non-DoD Education Activity resources.
Protection of Children	Implementation of the Proposed Action would result in long-term, moderate, beneficial impacts to the protection of children by providing students with a safe and suitable educational facility while removing the risk of potential exposure to ACM and/or LBP. There would be no disproportionate adverse impacts to children.	Long-term, moderate, adverse impacts to the protection of children would be expected to occur due to continued deterioration of the existing Nathan Twining Elementary and Middle School and the attractive nuisance of the closed Carl Ben Eielson School. This adverse impact would be disproportionate, as youth populations would bear the primary burden of the associated environmental health and safety risks.

ACM = asbestos-containing material; BASH = bird/wildlife aircraft strike hazards; DAF = Department of the Air Forc; DoD = United States Department of Defense; GFAFB = Grand Forks Air Force Base; GFAFBPSD = Grand Forks Air Force Base Public School District; GFSD = Grand Forks School District; LBP = lead-based paint; MOA = Memorandum of Agreement; NRHP = National Register of Historic Places ; UST = underground storage tank

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CHAPTER 3 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

3.1 FRAMEWORK FOR ANALYSIS

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

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

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

Based upon the nature of the Proposed Action and the affected environment, both qualitative and quantitative thresholds were used as benchmarks to qualify effects. Further, each resource analysis section (i.e., **Sections 3.4–3.15**) concludes with a cumulative effects analysis considering the effects on the environment that result from the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB.

Table 3-1 briefly describes the proposed or planned projects identified for consideration of potential cumulative effects when combined with the effects of the Proposed Action at GFAFB and on a regional scale. All projects associated with the Proposed Action would be located within the boundaries of GFAFB. The area surrounding GFAFB is rural and agricultural in nature and development is minimal. Projects approved by the City of Grand Forks primarily occur within the city boundaries, located approximately 12 miles east of GFAFB. It is therefore unlikely that potential impacts associated with such projects would result in cumulative effects when combined with the effects of the Proposed Action.

3.2 RESOURCES ELIMINATED FROM DETAILED ANALYSIS

GFAFBPSD considered but eliminated from further analysis visual resources. The Proposed Action would occur entirely within GFAFB and would be consistent with existing visual landscapes.

3.3 RESOURCES CARRIED FORWARD FOR DETAILED ANALYSIS

GFAFBPSD considered GFAFB and its environs as the ROI for each environmental resource. None of the projects under the Proposed Action or No Action Alternative would occur outside the boundaries of GFAFB. Based on the results of internal and external scoping (see **Section 1.4**), the following resources were carried forward for analysis: land use; safety and occupational health; air quality and greenhouse gases; biological resources; water resources; geology and soils; cultural resources; hazardous materials and waste, toxic substances, and contaminated sites; infrastructure, including transportation and utilities; noise; socioeconomics; and protection of children.

Table 3-1
Past, Present, and Reasonably Foreseeable Environmental Actions

Name	Description	Timeframe	Approximate Distance from Base
Federal Projects			
Multiple projects at GFAFB as part of the Installation Development Plan	Multiple different demolition, renovation, and construction projects are planned for GFAFB. These projects include up to 216,469 ft^2 of new construction, 105,633 ft^2 of demolition, 17,605 ft^2 of renovation, 0.59 mile of fence repair, and 0.11 mile of new fencing. Individual project development is ongoing with estimated work continuing through 2028.	NEPA complete, ongoing construction	On Base
GFAFB BASH EA	Ground maintenance accessibility and operations improvements that will bring GFAFB's airfield into compliance under DAFI 91-202, and DAFI 91-212. This EA evaluates reconstruction of the ground topography and the natural and man-made water features within the project area totaling 1,291 acres, including the proposed clearing, filling, and grading of approximately 93 acres of existing wetlands on GFAFB.	NEPA complete	On Base
Nodak Electric Cooperative Facility on GFAFB	Construction of a 5,000 ft^2 building.	NEPA complete, ongoing construction	On Base
GrandSKY Business Park EA	Development of up to approximately 7,130,000 ft^2 of new impervious surfaces across eight functional land use categories within the GrandSKY Business Park.	NEPA complete	Leased GFAFB property
Temporary Beddown for the B-1B	Involves the temporary movement of 17 B-1B Lancers and 800 Airmen from Ellsworth Air Force Base, South Dakota, to GFAFB. The temporary beddown is expected to be completed by Fall 2025.	December 2024 – Fall 2025	On Base
Non-Federal Projects			
Various City of Grand Forks Housing Developments	Six multi-family housing developments are scheduled to occur within the City of Grand Forks. These projects have been approved between 2018 and 2023.	Ongoing	Approximately 10 miles

BASH = bird/wildlife aircraft strike hazard; EA = Environmental Assessment; GFAFB = Grand Forks Air Force Base; DAFI = Department of the Air Force Instruction; NEPA = National Environmental Policy Act; ft^2 = square feet

3.4 LAND USE

3.4.1 Definition of the Resource

The term "land use" refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws; however, no nationally recognized convention or uniform terminology has been adopted for describing land use categories. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions. The Installation Development Plan (IDP) is GFAFB's planning tool to guide future development on the Installation to be aligned with current and programmed mission requirements. The IDP

has further divided GFAFB into seven planning districts: Administration and Community Support, Accompanied Housing, Airfield and Operations, Industrial, Munitions, Enhanced Use Lease (GrandSKY), and Future (East and West). Carl Ben Eielson School and Nathan Twining Elementary and Middle School are located within the Accompanied Housing District (GFAFB, 2017, 2024).

The ROI for land use is the Accompanied Housing District within GFAFB.

3.4.2 Affected Environment

The ROI is located in the northeastern portion of GFAFB (**Figure 3-1**). The approximately 520-acre district is permitted for community services, accompanied housing, outdoor recreation, and open space. The district contains privatized on-Base housing, a community center, and two schools: the existing Nathan Twining Elementary and Middle School and the decommissioned Carl Ben Eielson School. The district forms a portion of both the northern and eastern boundaries of GFAFB and is bound within the Installation by Steen Boulevard to the south and J Street to the west. The main gate for GFAFB is located at the southeast corner of the Accompanied Housing District. A portion of the district extends beyond the eastern GFAFB perimeter security fence and is known as Sunflake. Sunflake is retained for future development at GFAFB (GFAFB, 2024a).

3.4.3 Environmental Consequences

3.4.3.1 Evaluation Criteria

Potential impacts to land use are based on the level of land use sensitivity in areas potentially affected by a proposed action as well as compatibility of the action with existing conditions. Adverse land use impacts would occur if the Proposed Action:

- is inconsistent or noncompliant with existing land use plans or policies,
- precludes the viability of existing land use,
- precludes continued use or occupation of an area,
- is incompatible with adjacent land use to the extent that public health or safety is threatened, or
- conflicts with planning criteria established to ensure the safety and protection of human life and property.

3.4.3.2 Proposed Action

Under the Proposed Action, demolition of the closed Carl Ben Eielson School, construction of a new Nathan Twining School, and the subsequent demolition of the existing Nathan Twining Elementary and Middle School would support community services and would be consistent with permitted land use within the Accompanied Housing District at GFAFB. As described in **Section 3.13**, the new Nathan Twining School would be located outside of the 65 decibel (dB) noise contour and on the land previously developed and used for Carl Ben Eielson School. No changes to land use within the ROI would be anticipated to occur. The existing Nathan Twining Elementary and Middle School would be demolished once the student population was transferred to the new Nathan Twining School. The demolished land would be utilized consistent with permitted land uses for the Accompanied Housing District at GFAFB. Therefore, no impacts to land use would be anticipated to occur under the Proposed Action.

3.4.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under current conditions. There would be no change to overall land use within the ROI beyond baseline conditions.

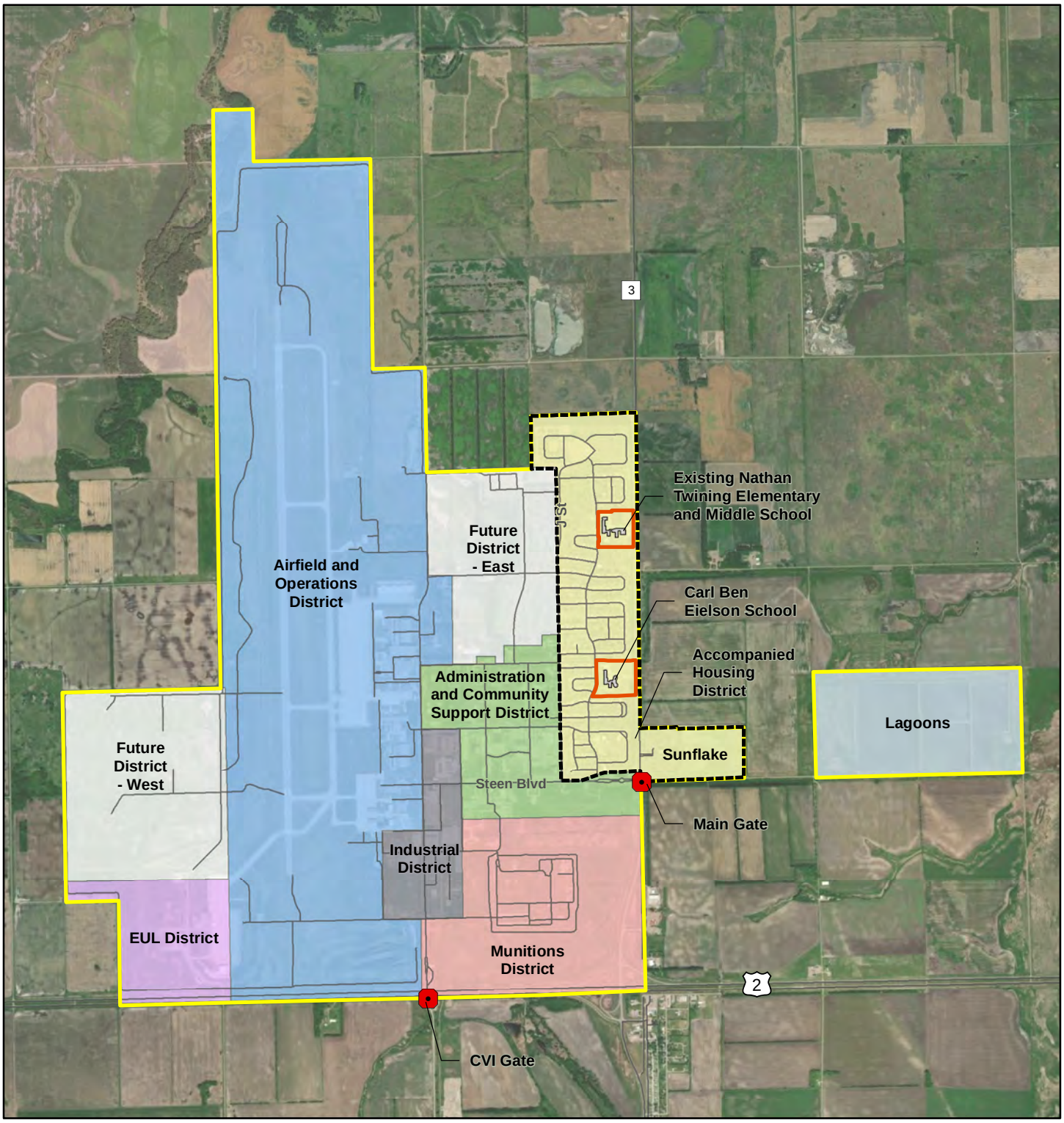


FIGURE 3-1
Land Use Districts

- ACP
- ROI
- Installation Boundary
- Project Site
- Current School Building
- Accompanied Housing
- Administration and Community Support
- Airfield and Operations
- EUL
- Future
- Industrial
- Lagoons
- Munitions

N

0 1 Mile

Imagery: Maxar 2020, 2021
Coordinate System: WGS 1984 UTM Zone 14N

ACP = Access Control Point; CVI = Commercial Vehicle Inspection; EUL = Enhanced Use Lease; ROI = Region of Influence

3.4.3.4 Cumulative Effects

The Proposed Action at GFAFB would be consistent with permitted land uses within the ROI and would result in no impacts to land use. None of the projects listed in **Table 3-1** would result in a change to land use within the ROI. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to land use would be anticipated to occur with implementation of the Proposed Action.

3.5 SAFETY AND OCCUPATIONAL HEALTH

3.5.1 Definition of the Resource

This section discusses safety concerns associated with ground, explosives, and flight activities. Ground safety considers issues associated with ground operations and maintenance activities that support unit operations including arresting gear capability, jet blast/maintenance testing, and safety danger. Aircraft maintenance testing occurs in designated safety zones. Ground safety also considers the safety of personnel and facilities on the ground that may be placed at risk from flight operations in the vicinity of the airfield. Clear zones (CZs) and accident potential zones (APZs) around the airfield restrict the public's exposure to areas where there is a higher accident potential. Although ground and flight safety are addressed separately, in the immediate vicinity of the runway, risks associated with safety-of-flight issues are interrelated with ground safety concerns. Explosives safety relates to the management and safe use of ordnance and munitions. Flight safety considers aircraft flight risks such as midair collision, bird/wildlife aircraft strike hazard (BASH), and in-flight emergencies.

The primary federal statute addressing occupational hazards is the *Occupational Safety and Health Act* (29 USC §§ 651–678), which created the Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health. GFAFBPSD would be required to ensure the occupational health and safety of all personnel in compliance with applicable federal, state, and local regulations.

The ROI for safety is the Accompanied Housing District within GFAFB.

3.5.2 Affected Environment

3.5.2.1 Ground and Construction Safety

Construction contractors are responsible for reviewing potentially hazardous workplace operations, monitoring exposure to workplace chemicals (e.g., asbestos, lead, hazardous materials), physical hazards (e.g., noise propagation, slips, trips, falls), and biological agents (e.g., infectious waste, wildlife, poisonous plants). Construction contractors are required to recommend and evaluate controls (e.g., preventative, administrative, engineering) to ensure that personnel are properly protected and to implement a medical surveillance program to perform occupational health physicals for those workers subject to any accidental chemical exposures.

The existing Nathan Twining Elementary and Middle School is not in compliance with federal and DoD AT/FP security standards and regulations for an educational facility as defined by UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, putting both students and staff utilizing the school at risk. Additionally, a safety assessment of the existing safe routes to school pathways associated with the existing school showed that drivers could not see pedestrians at the crosswalks far enough in advance to enable them to safely stop their vehicle. Other safety concerns include intersection sight distance, sign placement, crosswalk lighting and placement, and marking of mid-block crosswalks and crosswalks on uncontrolled approaches (GFAFBPSD, 2024b).

3.5.2.2 Flight Safety

The primary safety concern for military aircraft activity is the potential for aircraft accidents. Research in accident potential conducted by the DAF found that most aircraft accidents occurred during takeoff or

landing and were clustered along the runway and its extended centerline. This resulted in the designation of safety zones around airfields and restriction of incompatible land uses within those safety zones to reduce the public's exposure to safety hazards. CZs and APZs are designated rectangular safety zones extending outward from the ends of active military airfields that delineate areas recognized as having the greatest risk of aircraft accidents. APZs are further defined as APZ I, APZ II, and APZ III depending on their level of accident potential, with APZ III being the least restrictive.

The ROI is located outside of all CZs and APZs and is located outside of the 65 dB noise contour for the airfield; flight safety is not anticipated to be a factor for development of the Proposed Action. Therefore, flight safety is not carried forward for analysis in this EA.

3.5.2.3 Explosives Safety

Defense Explosives Safety Regulation 6055.09_AFMAN 91-201, *Explosives Safety Standards,* establishes the size of the safety zones around facilities used to store, handle, and maintain munitions based on the quantity-distance criteria. Defined distances are maintained between munitions storage areas and a variety of other types of facilities. Within these distances, called explosives safety quantity-distance (ESQD) arcs, development is either restricted or prohibited. The ESQD arcs on GFAFB are associated with munitions storage and hot cargo pads and create defined distances between those facilities and the CZs and noise zones associated with the runway and airfield operations (GFAFB, 2017).

The ROI does not intersect with or contain any ESQD arcs; the nearest ESQD arc is more than 0.5 mile from the project sites. ESQD arcs are not anticipated to be a factor for development of the Proposed Action. Therefore, explosives safety is not carried forward for analysis in this EA.

3.5.2.4 Bird/Wildlife Aircraft Strike Hazards

BASH constitutes a safety concern because of the potential for damage to aircraft or injury to aircrews or local populations should an aircraft crash occur in a populated area. Strikes tend to peak at certain times of year, particularly in the spring and summer months. This can be attributed to bird migration and peaks in overall populations due to natural reproduction (GFAFB, 2023a).

The ROI is located more than 1 mile east of the GFAFB runway and is located outside of all CZs and APZs where BASH typically occur. Therefore, BASH safety is not carried forward for analysis in this EA.

3.5.3 Environmental Consequences

3.5.3.1 Evaluation Criteria

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

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

3.5.3.2 Proposed Action

Ground and Construction Safety

Construction activities can potentially expose personnel to health and safety hazards from heavy-equipment operation, construction safety, hazardous materials and chemicals use, and working in noisy

environments. To minimize health and safety risks, contractors would be required to use appropriate personal protective equipment and establish and maintain site-specific health and safety programs that follow all applicable OSHA regulations for their employees. Additionally, all construction contractors for this project would be required to follow ground safety regulations and worker's compensation programs to avoid posing any risks to workers or personnel.

Carl Ben Eielson School is not operational, and all demolition and construction activities would be confined to the project site. No GFAFBPSD students or staff use Carl Ben Eielson School and access to the project site would be restricted to approved contractors. Demolition of the existing Nathan Twining Elementary and Middle School would occur after the existing student and faculty population had been transitioned to the newly constructed Nathan Twining School. As with the Carl Ben Eielson School demolition, all demolition activities at the existing Nathan Twining Elementary and Middle School would be confined to the project site and restricted to approved contractors.

The existing Nathan Twining Elementary and Middle School and Carl Ben Eielson School both have an FCAR rating of Q4, indicating that the facilities are beyond the ability of renovation or repair and are recommended for complete demolition (GFAFBPSD, 2018a, 2018b). The demolition of the existing Nathan Twining Elementary and Middle School and Carl Ben Eielson School with construction of the new Nathan Twining School would allow for necessary upgrades to GFAFBPSD's education facilities, improving overall safety conditions and meeting DAF and OSHA safety and security requirements. Therefore, short-term, minor, adverse impacts to construction contractor health and safety and long-term, minor, beneficial impacts to ground and construction safety would be anticipated to occur under the Proposed Action.

The addition of a secure vestibule for visitor control, secure entryways, an updated security system, a video surveillance system, and an intrusion-detection system for the new Nathan Twining School campus would bring GFAFBPSD into compliance with federal and DoD AT/FP security standards and regulations. The construction of impact barriers at locations identified by Security Forces would add to the ground safety for students and staff at the new Nathan Twining School by restricting vehicles to a safe distance from the school. Additionally, deficiencies in traffic signs, traffic markings, and crosswalk lighting would be resolved (GFAFBPSD, 2024a, 2024b). Therefore, long-term, moderate, beneficial impacts to ground safety with respect to AT/FP and the safety of individuals that utilize the school would be anticipated to occur under the Proposed Action.

3.5.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. No changes to flight safety, explosives safety, or BASH safety would occur beyond baseline conditions. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would remain out of compliance with AT/FP security standards. Nathan Twining Elementary and Middle School would continue to operate under current conditions. Both existing school buildings, which currently have the lowest FCAR rating of Q4 and are recommended for complete demolition, would continue to deteriorate. Therefore, the No Action Alternative would result in long-term, moderate, adverse ground and construction safety impacts.

3.5.3.4 Cumulative Effects

Of the projects listed in **Table 3-1**, the GFAFB BASH EA would result in indirect beneficial impacts to safety through the reduction of BASH risk. All construction activities that would occur under the projects in **Table 3-1** would follow appropriate guidelines for the safety of construction workers and the public. The temporary beddown for the B-1B aircraft started in December 2024; however, by the time the new school is constructed and operational in 2026, the B-1B aircraft will no longer be located at GFAFB, resulting in no cumulative effects. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, indirect, beneficial cumulative effects to safety would be anticipated to occur with implementation of the Proposed Action.

3.6 AIR QUALITY AND GREENHOUSE GASES

3.6.1 Definition of the Resource

Ambient air quality refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) that occurs at a particular geographic location. The ambient air quality levels measured at a particular location are determined by the interaction of emissions, meteorology, and chemistry. Meteorological considerations include wind and precipitation patterns affecting the distribution, dilution, and removal of pollutant emissions. Chemical reactions can transform pollutant emissions into other chemical substances.

Air pollution is a threat to human health and damages trees, crops, other plants, lakes, and animals. It creates haze or smog that reduces visibility and interferes with aviation. To improve air quality and reduce air pollution, Congress passed the *Clean Air Act* (42 USC § 7401) and its amendments in 1970 and 1990 (CAA), which set regulatory limits on air pollutants and help to ensure basic health and environmental protection from air pollution.

The ROI for air quality includes GFAFB and its surrounding areas within the North Dakota Air Quality Control Region (AQCR).

3.6.1.1 Criteria Pollutants

In accordance with CAA requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. Measurements of these "criteria pollutants" in ambient air are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter. Regional air quality is a result of the types and quantities of atmospheric pollutants and pollutant sources in an area as well as surface topography and prevailing meteorological conditions.

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

The criteria pollutant ozone is not usually emitted directly into the air but is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants, or "ozone precursors." These ozone precursors primarily consist of nitrogen oxides and volatile organic compounds (VOC) that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies limit atmospheric ozone concentrations by controlling VOCs pollutants (also identified as reactive organic gases) and nitrogen oxides.

The USEPA has recognized that particulate matter emissions can have different health effects depending on particle size and, therefore, developed separate NAAQS for PM_{10} and $PM_{2.5}$. $PM_{2.5}$ can be released from emission sources directly as very fine dust and/or liquid mist or formed secondarily in the atmosphere as condensable particulate matter, typically forming nitrate and sulfate compounds. Secondary (indirect) emissions vary by region depending upon the predominant emission sources located there and thus which precursors are considered significant for $PM_{2.5}$ formation and identified for ultimate control.

Table 3-2
National Ambient Air Quality Standards for Criteria Pollutants

Pollutant		Primary/ Secondary[a, b]	Averaging Time	Level[c]	Form
CO		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead		Primary and Secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
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	Annual mean
Ozone		Primary and Secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution	$PM_{2.5}$	Primary	1 year	12.0 µg/m^3	Annual mean, averaged over 3 years
		Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
		Primary and Secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year onaverage over 3 years
SO_2		Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: NAAQS table

µg/m^3 = micrograms per cubic meter; CFR = *Code of Federal Regulations*; CO = carbon monoxide; NAAQS = National Ambient Air Quality Standards; NO_2 = nitrogen dioxide; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide; USEPA = US Environmental Protection Agency

Notes:

a. Primary Standards: the levels of air quality necessary, with an adequate margin of safety to protect public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the USEPA.

b. Secondary Standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

c. Concentrations are expressed first in the units in which they were promulgated.
   (1) In areas designated nonattainment for the lead standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m^3 as a calendar quarter average) also remain in effect.
   (2) The level of the annual nitrogen dioxide standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
   (3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) ozone standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) ozone standards.
   (4) The previous sulfur dioxide standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous sulfur dioxide standards or is not meeting the requirements of a state implementation plan call under the previous sulfur dioxide standards (40 CFR § 50.4(3)). A state implementation plan call is a USEPA action requiring a state to resubmit all or part of its state implementation plan to demonstrate attainment of the required NAAQS.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. As such, each state must develop air pollutant control programs and declare regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels.

3.6.1.2 General Conformity

When a region or area meets NAAQS for a criteria pollutant, that region or area is classified as in "attainment" for that pollutant. When a region or area fails to meet NAAQS for a criteria pollutant, that region or area is classified as "nonattainment" for that pollutant. In cases of nonattainment, the affected state, territory, or local agency must develop a state implementation plan (SIP) for USEPA review and approval. The SIP is an enforceable plan developed at the state level that lays out a pathway for how the state will comply with air quality standards. If air quality improves in a region that is classified as nonattainment, and the improvement results in the region meeting the criteria for classification as attainment, then that region is reclassified as a "maintenance" area.

Federal actions are required to conform with the approved SIP for those areas of the US designated as nonattainment or maintenance areas for any criteria air pollutant under the CAA (40 CFR § 93.158). The purpose of the General Conformity Rule is to ensure that applicable federal actions, such as the Proposed Action, would not cause or contribute to a violation of an air quality standard and that the Proposed Action would not adversely affect the attainment and maintenance of any NAAQS. A conformity applicability analysis must be completed to determine and document whether the Proposed Action complies with the General Conformity Rule for every DAF action that would be located in or include a nonattainment or maintenance area and that generates emissions. The analysis must consider the total direct and indirect emissions, including all emission increases and decreases that are practicably controllable through an agency's continuing program responsibility and that are reasonably foreseeable at the time that the conformity applicability analysis is conducted.

The first step in a conformity applicability analysis involves evaluating the total direct and indirect emissions caused by the Proposed Action. Such evaluation must assess future emissions with the action versus future emissions without the action. The total direct and indirect emissions are the net emissions, which must be reasonably foreseeable and practically controllable through an agency's continuing program responsibility. In the conformity applicability analysis, the emissions thresholds that trigger the conformity requirements are called *de minimis* thresholds. The net change in emissions calculated for direct and indirect emissions are compared to these thresholds. If the emissions are below *de minimis* thresholds, the Proposed Action is presumed to conform to the SIP. If the net change in emissions equals or exceeds the *de minimis* conformity applicability threshold values, then a formal Conformity Determination must be prepared to demonstrate conformity with the approved SIP. *De minimis* levels as measured in tons per year (tpy) are shown in **Table 3-3.**

3.6.1.3 Greenhouse Gases

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere helps regulate the earth's temperature. GHGs include water vapor, carbon dioxide, methane, nitrous oxide, and ozone, as well as several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. The global warming potential of a particular gas provides a relative basis for calculating its carbon dioxide equivalent (CO_2e) or the amount of CO_2e to the emissions of that gas. Carbon dioxide has a global warming potential of one and is therefore the standard by which all other GHGs are measured. The GHGs are multiplied by their global warming potential, and the resulting values are added together to estimate the total CO_2e.

Table 3-3
***De Minimis* Thresholds for Conformity Determinations**

Pollutant	Nonattainment or Maintenance Area Type	*De Minimis* Threshold (tpy)
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
Ozone (NO_x)	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
CO, SO_2, and NO_2	All nonattainment and maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$	All nonattainment and maintenance	100
Lead	All nonattainment and maintenance	25

Source: 40 CFR 93.153
CFR = *Code of Federal Regulations*; CO = carbon monoxide; NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

The USEPA regulates GHG primarily through a permitting program known as the GHG Tailoring Rule. This rule applies to GHG emissions from larger stationary sources. Additionally, the USEPA promulgated a rule for large GHG emission stationary sources, fuel and industrial gas suppliers, and carbon dioxide injection sites if they emit 25,000 metric tons or more of CO_2e per year (40 CFR § 98.2(a)(2)). The DAF, however, has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 tpy of CO_2e as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator provides a threshold to identify actions that are insignificant or too trivial or minor to merit consideration. Actions with a net change in GHG (CO_2e) emissions below the PSD threshold are considered too insignificant on a global scale to warrant any further analysis. Actions with a net change in GHG (CO_2e) emissions above the PSD threshold are considered potentially significant and require further assessment to determine if the action poses a significant impact (Air Force Civil Engineer Center, 2024).

3.6.2 Affected Environment

The Proposed Action would take place at GFAFBPSD-owned schools located within GFAFB in Grand Forks County, North Dakota, which is situated within the North Dakota AQCR. This region is designated by USEPA as in attainment/unclassifiable for all criteria pollutants (40 CFR § 81.335). As a result, the General Conformity Rule does not apply to the Proposed Action and no conformity analysis is required.

GFAFB is in the northeastern part of North Dakota and its climate is representative of the Northern Great Plains. Its regional climate is characterized by cold winters and warm-to-hot summers, with wide extremes in temperatures. The warmest month in the region is July, with average high and low temperatures of 81 degrees Fahrenheit (°F) and 56°F, respectively. January is the coldest month, with an average high temperature of 17°F and average low temperature of -3°F. The wettest month by average precipitation is July, with an average of 3.48 inches of rain. The driest month is February, with an average of 0.52 inch of precipitation. December and January have the highest average snowfall of 11 inches (US Climate Data, 2019).

3.6.3 Environmental Consequences

3.6.3.1 Evaluation Criteria

Because the North Dakota AQCR is in an attainment/unclassifiable area for all NAAQS (40 CFR §81.335); the General Conformity Rule does not apply to the Proposed Action.

When the ROI is in attainment for all NAAQS, the PSD value is used as a threshold for all criteria pollutants other than lead. Due to the toxicity of lead, the use of the PSD threshold as an indicator of potential air quality impact insignificance is not protective of human health or the environment. Therefore, the *de minimis* value is used instead. Proposed project emissions are compared against the insignificance indicator of 250 tpy (25 tpy for lead). Insignificance indicators were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the NAAQS. These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action would not cause or contribute to an exceedance of one or more NAAQS.

3.6.3.2 Methodology

The environmental impact methodology for air quality impacts presented in this EA is derived from AFMAN 32-7002, *Environmental Compliance and Pollution Prevention* (February 2020). The Proposed Action is broken down into basic units. For example, a basic development project that consists of replacing a building with a new building could be broken down into demolition (square feet [ft^2]), grading (ft^2), building construction (ft^2 and height), architectural coatings (ft^2), and paving (ft^2). These data are then input into the DAF's Air Conformity Applicability Model (ACAM), which models emissions based on the inputs and estimates air emissions for each specific criteria and precursor pollutant, as defined in the NAAQS. The calculated emissions are then compared against the applicable threshold based on the attainment status of the ROI. If the annual net increase in emissions from the project are below the applicable thresholds, then the Proposed Action would not be considered significant and would not be subject to any further Conformity Determination. Assumptions of the model, methods, and detailed summary results are provided in **Appendix E** of this EA.

The following thresholds are applicable for the Proposed Action:

- 250 tpy PSD value for VOCs, nitrogen oxides, carbon monoxide, ammonia, $PM_{2.5}$, and PM_{10};
- 25 tpy *de minimis* value for lead; and
- 75,000 tpy PSD value for CO_2e.

3.6.3.3 Proposed Action

Emissions from the Proposed Action would primarily result from project activities associated with demolition of the existing Nathan Twining Elementary and Middle School and Carl Ben Eielson School, site grading, and construction of the new Nathan Twining School. Emissions would also occur from the operation of construction vehicles off Base, such as hauling fill material. **Table 3-4** compares the annual estimated emissions from implementation of the Proposed Action with the insignificance indicator for each criteria pollutant. The highest annual emission rate from construction activities would be for PM_{10} (52.655 tpy), which would be below the insignificance indicator value. Impacts from earthwork projects, such as grading and trenching, primarily would be localized, with emissions occurring only during construction and demolition. The new Nathan Twining School building would be heated using electric sources and, as such, long-term (steady-state) emissions are calculated as 0 tpy. Less-than-significant impacts to regional air quality and short-term, minor, adverse impacts to air quality within the ROI would be anticipated to occur under the Proposed Action.

No new stationary sources of air emissions would be anticipated under the Proposed Action.

Table 3-4
Annual Emissions under the Proposed Action Compared to Insignificance Indicators (Ton/Year)

Pollutant	2025	2026	2027	2028	2029 (Steady-State)	Threshold (Ton/Year)	Exceedance (Yes or No)
VOC	0.102	0.332	0.514	0.492	0.000	250	No
NO_x	0.935	2.871	1.262	1.092	0.000	250	No
CO	1.059	3.234	1.679	1.504	0.000	250	No
Sulfur oxides	0.002	0.007	0.003	0.003	0.000	250	No
PM_{10}	9.883	52.655	0.043	4.907	0.000	250	No
$PM_{2.5}$	0.035	0.106	0.040	0.035	0.000	250	No
Lead	0.000	0.000	0.000	0.000	0.000	25	No
Ammonia	0.001	0.002	0.002	0.002	0.000	250	No
CO_2e	201	665	273	262	0	75,000	No

CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOC = volatile organic compound

The North Dakota Administrative Code specifies non-permitting requirements, such as control of fugitive dust (Chapter 33-15-17) and prohibitions for open burning (Chapter 33-15-04). GFAFBPSD and its contractors would comply with applicable regulations and take reasonable measures for mitigating dust that may become airborne during grading, excavating, and land-clearing activities.

No significant impacts to air quality would be anticipated to occur under the Proposed Action; therefore, no mitigation would be required. Best management practices (BMPs) that apply to GFAFBPSD for construction and demolition would include dust suppression techniques, such as water spraying, which would result in lower emissions than those estimated in this section (see **Table 3-4**).

3.6.3.4 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under current conditions. There would be no change to overall air quality within the ROI beyond baseline conditions.

3.6.3.5 Cumulative Effects

Implementation of the Proposed Action would result in short-term temporary increases in construction-related emissions. Should construction and demolition activities at GFAFB occur at the same time as the construction, demolition, and/or renovation projects listed in **Table 3-1**, temporary cumulative effects to air quality from increased particulate matter and dust could occur. However, GFAFB and its contractors would be required to implement BMPs to reduce fugitive dust and combustion emissions to acceptable levels during construction and demolition activities. Annual construction emissions associated with the Proposed Action would not be expected to exceed *insignificant indicator* levels during any year of cumulative project implementation. The temporary beddown for the B-1B aircraft started in December 2024; however, by the time the new school is constructed and operational in 2026, the B-1B aircraft will no longer be located at GFAFB, resulting in no cumulative effects.

Of the projects listed in **Table 3-1**, none would be anticipated to result in significant operational air quality impacts. Air quality impacts associated with these projects would be from construction activities that are temporary in nature. Because no operational impacts to air quality would occur, the Proposed Action and projects listed in **Table 3-1** would not significantly contribute to any potential cumulative effects to air quality. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to air quality would be anticipated to occur with implementation of the Proposed Action.

3.7 BIOLOGICAL RESOURCES

3.7.1 Definition of the Resource

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

The ROI for biological resources is the two noncontiguous project sites totaling 38 acres.

3.7.1.1 Endangered Species Act

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

3.7.1.2 Migratory Bird Treaty Act

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

EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires all federal agencies undertaking activities that may negatively impact migratory birds to follow a prescribed set of actions to further implement the MBTA. EO 13186 directs federal agencies to develop a Memorandum of Understanding (MOU) with USFWS that promotes the conservation of migratory birds. The DoD has signed an MOU with USFWS to promote the conservation of migratory birds while sustaining the use of military managed lands and airspace for testing, training, and operations (US DoD, 2014). Under the terms of the MOU, operational safety takes precedence over conservation in airfield environments.

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

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

3.7.1.3 Bald and Golden Eagle Protection Act

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

3.7.1.4 Invasive and Noxious Weed Species

Invasive species are non-native species whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health. EO 13751, *Safeguarding the Nation from the Impacts of Invasive Species*, requires federal agencies to identify actions that may affect invasive species; use relevant programs to prevent introduction of invasive species; detect, respond, and control such species; monitor invasive species populations; and provide for restoration of native species. Invasive species damage native habitat and impede management by outcompeting native species.

Noxious weeds in North Dakota are any plant propagated by either seed or vegetative parts and determined to be injurious to public health, crops, livestock, land, or other property by the state, county, or municipal authority (North Dakota Century Code § 4.1-47-02, Control of Noxious Weeds).

3.7.2 Affected Environment

3.7.2.1 Ecoregion Description

Ecoregions are used to describe areas of similar type, quality, and quantity of environmental resources and are assigned hierarchical levels I-IV to delineate regions spatially based on different levels of planning and reporting needs. Level III ecoregion descriptions provide a regional perspective and are specifically oriented for environmental monitoring, assessment and reporting, and decision-making (USEPA, 2020).

GFAFB is located within the Lake Agassiz Plain Level III Ecoregion. The vegetation and wildlife common within this ecoregion that are known to occur on GFAFB are described below.

Regional Environment

Several natural areas maintained by the state or Federal Government are located within 5–10 miles of GFAFB, totaling approximately 10,000 acres of grasslands with interspersed wetland and wetland complexes that preserve and protect native and restored prairies. The largest natural area is the Kellys Slough National Wildlife Refuge (NWR) Greater Complex of more than 6,800 acres located approximately 2 miles east of the ROI. This area serves as a major stopover point for migratory waterfowl and shorebirds, providing breeding habitat for several bird species.

The University of North Dakota owns a parcel of land adjacent to the western portion of the Base in Mekinock Township. This parcel runs northwestward from the Installation. Turtle River State Park, which is approximately 6 miles west of GFAFB on the Turtle River, contains approximately 784 acres of diverse habitat including upland hardwoods, wetlands, and prairie remnants.

3.7.2.2 Vegetation

When the construction of GFAFB was completed in the mid-1950s, much of the Base was planted in a standard grass mix of smooth bromegrass (*Bromus inermis*), red fescue (*Festuca rubra*), and Kentucky bluegrass (*Poa pratensis*). Since then, some areas have been improved with native prairie species such as western wheat grass (*Pascopyrum smithii*), little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), sideoats gramma (*Bouteloua curtipendula*), and

Indian grass (*Sorghastrum nutans*). However, there are no known natural prairie remnants on Base property.

The ROI is characterized by vegetation consisting of urban landscape and turf. Grasses in this area include Kentucky bluegrass and red fescue. These improved areas are mowed weekly and regularly maintained by contracted groundskeepers. The grounds maintenance contractor cuts grass to maintain a grass height between 2 and 4 inches and is responsible for the removal and disposal of debris such as leaves, tree limbs, and rodent habitats. The ROI is bordered with shelterbelts (rows of trees or shrubs) that were planted to protect the buildings against wind, snow, and cold. Historically, shelterbelt species consisted of green ash (*Fraxinus pennsylvanica*), Russian olive (*Elaeagnus angustifolia*), American elm (*Ulmus americana*), and cottonwood (*Populus deltoides*). However, due to the threat posed by the emerald ash borer (*Agrilus planipennis*) to green ash and the invasive nature of the Russian olive, these trees are no longer planted on the Base (GFAFB, 2023a).

3.7.2.3 Wildlife

GFAFB is classified as a Category I Installation, as defined in DAFMAN 32-7003. Category I Installations have natural resources requiring protection and management, such as habitat for protected species, aquatic resources, or any habitat that is suitable for conserving and managing wildlife. The Base provides vital habitats for a variety of wildlife species through a mixture of semi-native wetlands, grassland, shrubland, shelterbelts, and a riparian corridor on site.

Mammals observed on the Base, and likely to be found within the ROI, are primarily small mammals common to grassland habitats, including the plains pocket gopher (*Geomys bursarius*), the Richardson's ground squirrel (*Spermophilus richardsonii*), the thirteen-lined ground squirrel (*Spermophilus tridecemlineatus),* the white-tailed jackrabbit (*Lepus townsendii*), eastern cottontail rabbit (*Sylvilagus floridanus*), and the striped skunk (*Mephitis mephitis*). There are no wetland areas within the ROI so sightings of wetland species such as shrews, voles, muskrats, weasels, and foxes are unlikely. All of these species are common to eastern North Dakota (GFAFB, 2023a).

The Base is home to 238 bird species as defined in the GFAFB *Integrated Natural Resources Management Plan* (INRMP). Migratory birds on the Base, including waterfowl, neo-tropical migrants, and grassland birds, rely on shelterbelts as habitats for protection, food, and raising young. Additionally, shelterbelts act as natural corridors that allow wildlife such as white-tailed deer (*Odocoileus virginianus*) and wild turkey (*meleagris*) to forage safely between habitats by providing a canopy for coverage (GFAFB, 2023a).

Fish populations on GFAFB are limited to habitats of prairie potholes, drainage ditches, and the Turtle River, which runs through the northwestern corner of the Base. Within the ROI, no permanent surface water exists; one drainage ditch is located parallel to the eastern boundary of the Base adjacent to the existing Nathan Twining Elementary and Middle School. Four amphibian species, the American toad (*Bufo americanus*), Canadian toad (*Bufo hemiphrys*), northern leopard frog (*Rana pipiens*), and wood frog (*Rana sylvatica*), as well as four reptile species—the common garter snake (*Thamnophis sirtalis*), the plains garter snake (*Thamnophis radix*), the common snapping turtle (*Chelydra serpentina*), and the painted turtle (*Chrysemys picta*)—are common within GFAFB but are unlikely to occur within the ROI due to their habitat in wetland and riparian areas (GFAFB, 2023a).

3.7.2.4 Threatened, Endangered, and Other Protected Species

Threatened and Endangered Species

On 6 March 2025, the DAF used the USFWS' online IPaC tool and identified the following species as potentially affected by activities in the ROI: the northern long-eared bat (*Myotis septentrionalis*), listed as endangered, and the Suckley's cuckoo bumblebee (*Bombus suckleyi*), the western regal fritillary (*Argynnis idalia occidentalis)*, and the monarch butterfly (*Danaus plexippus*), all three listed as candidate species (**Table 3-5**).

Table 3-5
Federally Listed Species within the Region of Influence

Common Name	Scientific Name	Federal Status	Habitat
Invertebrates			
Monarch butterfly	*Danaus plexippus*	Proposed Threatened	Fields, roadside areas, open areas, wet areas, or urban gardens; milkweed and flowering plants are needed for monarch breeding habitat
Regal fritillary	*Speyeria idalia*	Proposed Threatened	Wet meadows and tallgrass prairie
Suckley's cuckoo bumblebee	*Bombus suckleyi*	Proposed Endangered	Prairies, grasslands, meadows, urban, and agricultural areas and woodlands
Mammals			
Northern long-eared bat	*Myotis septentrionalis*	Endangered	Live and dead trees, crevices, caves, mines, structures

Source: USFWS IPaC (see **Appendix A**)

Surveys for endangered, threatened, candidate, and other protected species and their habitats have been performed within the Base boundaries. No federally listed threatened or endangered species have been observed on GFAFB, and no critical habitat for any such species exists within (GFAFB, 2023a). The Base proactively manages threatened and endangered species to prevent potential listings as well as to conserve species that are legally protected or of concern at the state or federal level. Whenever it is practicable within the constraints of the military mission, GFAFB avoids/minimizes impacts to the species and manages their habitats found on Base.

The northern long-eared bat was listed as endangered in 2015 and is found in the north-central and eastern portions of the US. The northern long-eared bat is known to roost alone or in colonies, most often in live and dead trees and underneath bark. They are also known to roost in caves and mines, and can be opportunistic in roosting, though they are rarely found in structures such as barns or sheds (USFWS, 2025).

The Suckley's cuckoo bumblebee is a proposed endangered species with a population range spanning most of the north-central and northwestern portions of the US. The species is most commonly found in prairies, grasslands, meadows, urban and agricultural areas, and woodlands (89 FR 102074, 17 December 2024).

The western regal fritillary is a proposed threatened species of brush-footed butterfly with areas of habitat found throughout the central US. The butterfly lives in tallgrass prairie and open, sunny locations. The larvae rely on violets (*Viola* spp.) as hostplants, while the adults feed on nectar plants (US Department of Agriculture [USDA], 2020).

The monarch butterfly was proposed for federal listing as a threatened species in December 2024 (89 FR 100662). Monarch butterflies feed on nectar from many flower species but only breed where there are milkweeds (*Asclepias* spp.). Monarchs migrate annually to North Dakota, arriving as early as mid-May. On GFAFB, monarch butterflies have been recorded feeding on the nectar from wild bergamot (*Monarda fistulosa*), hoary vervain (*Verbena stricta*), common milkweed (*Asclepias syriaca*), narrow-leaved coneflower (*Echinacea angustifolia*), and thistles (*Cirsium*) (GFAFB, 2014).

Migratory Birds

Avian surveys have documented over 238 species of birds on GFAFB, including 105 breeding species, many of which are federally protected under the MBTA. Migratory bird species frequent the Base due to the available wetland and grassland habitat and are most likely to occur in the undeveloped areas outside of the ROI, though it is possible that sightings could occur within the ROI. Migratory birds are common across GFAFB and may be observed crossing the ROI, including waterfowl, neo-tropical migrants, and grassland birds. Prairie pothole marshes, like those found on GFAFB and throughout the region, serve as breeding habitat for many waterfowl species and act as stopover sites for resting and feeding for all types of birds.

There are 62 migratory birds classified as Species of Conservation Priority (SCP) by the North Dakota Game and Fish Department known to occur in the undeveloped portions of GFAFB, including open grasslands, wetlands, and woodlands. Kellys Slough NWR serves as a migration stopover and staging area for shorebirds and waterfowl (e.g., ducks, geese, and swans) in the area. The closest bald eagle nest to GFAFB is on the west side of Kellys Slough NWR, approximately 2 miles from the ROI (GFAFB, 2023a). No bald eagles have been observed nesting within the ROI.

Grand Forks Species of High Priority for Base Conservation

Numerous state SCP have been documented on GFAFB. The list of SCPs prioritized by the Base for conservation includes species protected by the ESA, MBTA, and/or the BGEPA, and species that may have limited or no regulatory protection. The Richardson's ground squirrel (*Spermophilus richardsonii*) is a SCP that occurs within the project site. Species removal and population management is a part of approved GFAFB pest management activities (GFAFB, 2023a).

3.7.2.5 Invasive and Noxious Weed Species

Base-wide surveys for invasive species and noxious weeds conducted in 2003, 2008/2009, and 2013 identified three invasive plant species—field bindweed (*Convolvulus arvensis*), bull thistle (*Cirsium vulgare*), and perennial sowthistle (*Sonchus arvensis*)—and six state-listed noxious weeds: absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), spotted knapweed (*Centaurea maculosa*), and kochia (*Kochia scoparia*). Noxious weeds are considered a Base-wide problem and are a significant threat to natural resources on GFAFB.

Improved landscaped areas, such as those in the ROI, struggle with thistle, dandelions, and bare earth areas that result from frequent mowing in saline environments. The GFAFB grounds maintenance contractor is responsible for weed control across all turf areas and newly landscaped beds. Herbicides used to manage weed growth are applied to all improved areas, including landscaping beds, sidewalks, roadways, parking lots, and airfield pavements. Weed removal is required under DAFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards* (2022). In addition, North Dakota weed law requires landowners to control and prevent the spread of noxious weeds from their properties. The Grand Forks County Weed Control Board is responsible for administering the Noxious Weed Control Program in Grand Forks County (GFAFB, 2023a; North Dakota Department of Agriculture, 2013).

3.7.3 Environmental Consequences

3.7.3.1 Evaluation Criteria

Evaluation criteria for potential impacts on biological resources are based on the following:

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

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

As a requirement under the ESA, federal agencies must provide documentation that ensures that the agency's proposed actions would not adversely affect the existence of any threatened or endangered species. The ESA requires that all federal agencies avoid "taking" federally threatened or endangered species (which includes jeopardizing threatened or endangered species habitat).

3.7.3.2 Proposed Action

Vegetation

Most of the vegetation in the ROI is improved landscape and is modified and regularly mowed. There have been no observations of unique native vegetative species occurring in the ROI. Vegetation that could be disturbed by the implementation of the Proposed Action would include common trees, shrubs, and turf.

Construction and demolition activities from the Proposed Action would require the use of heavy machinery for demolition and grading that likely would result in the removal or trampling of vegetation surrounding the facilities. Impacted vegetation would be expected to regenerate naturally or be replanted with native vegetation according to approved GFAFBPSD design plans once demolition activities have ceased. Replanting with native vegetation would support positive vegetation growth and control against invasive weeds. Prior to demolition, a GFAFBPSD demolition plan would be prepared that includes guidelines associated with replacing any trees that would be removed during project development. Construction from the Proposed Action would be located within the same areas of the ROI that would be disturbed during demolition. While final project designs are to be determined by GFAFBPSD, GFAFB, and their funding partners, new construction would include a school, parking area, drop-off lanes, and a new athletic field. The shelterbelt system within and adjacent to the ROI is not anticipated to be affected by the project implementation. The forthcoming demolition plan should address the system to prevent unnecessary impact during construction and development.

No intended uses have been identified for the existing Nathan Twining Elementary and Middle School project site once demolition of the building is complete; as analyzed in this EA, the site would remain undeveloped. GFAFB and GFAFBPSD would adhere to all regulations and guidelines as outlined in the GFAFB INRMP and GFAFB *Integrated Pest Management Plan* for vegetation maintenance post-demolition (GFAFB, 2023a, 2023b).

Short-term, negligible, adverse impacts to vegetation from construction and demolition activities and long-term, minor beneficial impacts from replanting of native vegetation would be anticipated to occur under the Proposed Action.

Wildlife

The ROI primarily consists of exposed, landscaped land with limited suitable habitat for wildlife. However, the shelterbelt system on the eastern edge of the ROI provides habitat and protection for wildlife on the Base. Small mammals and avian species have the potential to be sighted within the ROI; however, the ROI is highly developed with human activity, which generally deters wildlife from developing permanent habitat in these areas. Further, high noise events and motion from demolition and construction activities would have the potential to cause wildlife to engage in flighty and avoidance behaviors. Most of these species would be expected to recuperate from the disturbance once demolition and construction activities cease or would eventually adapt to the disturbances all together. Additionally, noise and motion disturbances are already ongoing in the area from landscaping maintenance and mowing, vehicle traffic, and aircraft activity; therefore, short-term, minor adverse impacts to wildlife would be anticipated to occur from temporary construction and demolition activities under the Proposed Action.

Threatened, Endangered, and Other Protected Species

No federally listed threatened or endangered species have been observed within the ROI, nor does any critical habitat exist within the ROI.

The northern long-eared bat maternity season is generally from May through August, and it is possible that bats may roost on one or both buildings scheduled for demolition. These buildings would be checked for roosting bats prior to demolition. Suckley's cuckoo bumblebee, western regal fritillary, and the monarch butterfly are known to occur in areas of prairie, meadow, and grassland. The ROI is heavily developed with an urban landscape and regularly manicured grasses and turf, none of which are not suitable habitat for these species. Therefore, the DAF has determined that the Proposed Action would have "no effect" on federally threatened or endangered species. While the Base provides a variety of habitats crucial for SCPs, these habitats are not present in the ROI.

The BGEPA may apply to implementation of the Proposed Action if a bald or golden eagle nest is identified near the project sites. While no nests are known to be on the Base, bald eagles previously have been observed on GFAFB. Additionally, the peregrine falcon (*Falco peregrinus*) could potentially stop over at the Base. While the peregrine falcon was removed from the federal list of threatened and endangered species in 1999, it remains on species of conservation concern lists for the USFWS, North Dakota National Heritage Program, and North Dakota Game and Fish Department (GFAFB, 2023a). Trees surrounding the project sites likely would be removed or disturbed during demolition and construction activities, disrupting the occupation of any tree-dwelling species that may be nesting within. Prior to construction and demolition activities and any tree removal, trees would be inspected for the presence of tree-dwelling species. The MBTA makes it unlawful to take migratory birds or their parts, nests, or eggs. To avoid potential take of migratory birds or their parts, nests, or eggs, BMPs would be established prior to demolition and construction. Suggested BMPs include scheduling demolition outside of nesting seasons, conducting preconstruction surveys to confirm the presence or absence of migratory birds, and establishing an appropriately safe buffer around nests that are identified near the project sites. With the use of BMPs, no adverse impacts to bald eagles and migratory birds would be anticipated to occur under the Proposed Action.

Invasive and Noxious Weed Species

Vegetation disturbance during project activities would create potential sites for the establishment of invasive and noxious weed species in exposed and sparse areas. Additionally, invasive species could be introduced to the area during re-vegetation efforts. Noxious weeds can be controlled during demolition activities by covering the exposed and disturbed areas with weed-seed-free mulch or seeding the area with native species. BMPs, such as checking the work sites for the presence of invasive plants and noxious weeds and avoiding the use of off-Base fill material, also would be employed. Plant species used for re-vegetation would be selected from the GFAFB Plant List (as referenced in the GFAFB INRMP) to avoid the introduction of invasive species. Further, replanting with approved native vegetation would support positive vegetation growth and control against invasive weeds.

If invasive plants and noxious weeds are present, steps would be taken to lessen the probability of spreading seeds throughout the Base, such as mechanical or chemical treatment of the plants, avoiding areas of invasive plants and noxious weeds, and thorough cleaning and inspection of equipment and work clothing before moving off Base. With implementation of BMPs such as those described in the GFAFB *Noxious and Invasive Weed Survey and Control Plan* (GFAFB, 2013), long-term, negligible beneficial impacts to invasive plants and noxious weeds would be anticipated to occur under the Proposed Action.

3.7.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under current conditions. There would be no change to overall biological resources within the ROI beyond baseline conditions.

3.7.3.4 Cumulative Effects

The Proposed Action would be anticipated to result in short-term, negligible, adverse impacts to vegetation due to the use of heavy machinery that would likely would result in the removal or trampling of vegetation surrounding the facilities; short-term, minor, adverse impacts to local wildlife due to increasing noise and motion disturbances from heavy machinery and demolition and construction activities; and no impacts to threatened, endangered, and other protected species or invasive and noxious weed species. Short-term, adverse impacts from implementation of the Proposed Action would be temporary and would not contribute to a loss of habitats in the ROI. Adverse impacts to migratory birds and other tree-dwelling species could occur from tree removal and disturbance, but these impacts could be reduced and prevented with preconstruction BMPs. Utilizing BMPs to reduce noxious weed growth and avoiding the potential introduction of invasive species would minimize potential impacts to vegetation.

Should the construction activities identified in **Table 3-1** occur at the same time as the construction activities under the Proposed Action, there could be temporary, cumulative impacts to biological resources. Of the projects listed in **Table 3-1**, the GFAFB BASH EA would result in the permanent filling of 93 acres of wetlands within GFAFB. However, the permanent filling of wetlands would be offset in the form of mitigation banks in Grand Forks County. Further, there are no wetlands within the ROI and impacts from the permanent filling of 93 acres of wetlands within GFAFB would not be expected to result in direct or indirect cumulative effects. Development associated with the Proposed Action would be limited to urban landscape and turf, where species and vegetation diversity is already limited. When combining construction activities identified in **Table 3-1** with the Proposed Action, short-term, indirect cumulative effects to vegetation; wildlife; threatened, endangered, and other protected species; and invasive and noxious weeds would have the potential to occur. However, within 10 miles of the ROI, the Turtle River, Amundson, Jeglum, Kellys Slough, Clemetson, Pender, and Mekinock waterfowl production areas, combined with other rural areas within Grand Forks County, would be capable of accommodating any displacement of wildlife that would occur from the combined effects of the Proposed Action and those projects defined in **Table 3-1**. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to biological resources would be anticipated to occur with implementation of the Proposed Action.

3.8 WATER RESOURCES

3.8.1 Definition of the Resource

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

The ROI for water resources is the Accompanied Housing District within GFAFB.

3.8.1.1 Surface Water

Generally, the USACE and USEPA define Waters of the US (WOTUS) to include only surface waters, which are primarily lakes, rivers, estuaries, coastal waters, and wetlands (33 CFR § 328.3; 40 CFR §§ 120.2, 230.3(o)). WOTUS are regulated under Sections 401 and 404 of the CWA and Section 10 of the *Rivers and Harbors Act*. Man-made features not directly associated with a natural drainage, such as upland stock ponds and irrigation canals, are generally not considered jurisdictional waters as defined in **Section 3.8.1.4**.

3.8.1.2 Stormwater

Stormwater is surface runoff generated from precipitation and has the potential to introduce sediments and other pollutants into surface waters. Stormwater is regulated under the CWA Section 402 NPDES program. Impervious surfaces such as buildings, roads, parking lots, and some natural soils increase surface runoff. Stormwater management systems are designed to contain runoff on site during construction and demolition and to maintain predevelopment stormwater flow characteristics following development through either the application of infiltration or retention practices. The Energy Independence and Security Act establishes stormwater design requirements for development and redevelopment projects. Under these requirements, federal facility projects larger than 5,000 ft^2 must maintain or restore, to the maximum extent feasible, the predevelopment hydrologic conditions of the property with respect to the water temperature, rate, volume, and duration of flow.

3.8.1.3 Groundwater

Groundwater is water that exists in the saturated zone beneath the earth's surface in pore spaces and fractures and includes aquifers. Groundwater is recharged through percolation of water on the ground's

surface (e.g., precipitation and surface water bodies) and upward movement of water in lower aquifers through porous soil and rock. Groundwater is an essential resource that can be used for drinking, irrigation, and/or industrial processes, and can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations. Groundwater quality and quantity are regulated under several different programs, including the *Safe Drinking Water Act* (Public Law 93-523; 42 USC 300f–300j), which helps protect aquifers that are critical to water supply.

3.8.1.4 Wetlands

The CWA regulates discharges of pollutants in surface WOTUS. Section 404 of the CWA established a program to regulate the discharge of dredged and fill material into WOTUS, including wetlands. USACE defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions" (Environmental Laboratory, 1987). Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR Part 328). Federal protection of wetlands is also promulgated under EO 11990, *Protection of Wetlands*, the purpose of which is to reduce adverse impacts associated with the destruction or modification of wetlands. This EO directs federal agencies to provide leadership in minimizing the destruction, loss, or degradation of wetlands.

3.8.1.5 Floodplains

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

The Federal Emergency Management Agency (FEMA) evaluates and maps flood potential, which defines the 100-year (regulatory) floodplain. The 100-year floodplain is an area that has a one-percent annual chance of inundation by floodwater. FEMA uses letter designations for flood zone classification. Zone A designates 100-year floodplains where flood depths (base flood elevations) have not been calculated and further studies are needed. Zone AE floodplains include calculated base flood elevations, which are the minimum elevation standards for buildings in a floodplain. Zone X indicates areas outside of the FEMA 100-year regulatory floodplain that have a low risk of flooding hazards. Zone X (shaded) defines the 500-year floodplain; the limits between the 100-year floodplain and Zone X have a 0.2-percent annual chance of inundation by floodwater and are not part of the regulatory floodplain (FEMA, 2020). Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to property and human health and safety.

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

3.8.2 Affected Environment

3.8.2.1 Surface Water

GFAFB is located within the approximately 40,200-square-mile Red River Basin, which spans parts of eastern North Dakota, northwestern Minnesota, and northeastern South Dakota in the US and southern

Manitoba in Canada. Within the Red River Basin, GFAFB is located in the Turtle River Watershed, which is approximately 683 square miles[2] in size (North Dakota Department of Health [NDDH], 2018a, 2018b).

No surface water is located within the ROI. The nearest surface water is Kellys Slough, located approximately 0.6 mile southeast of the ROI. Kellys Slough is an intermittent stream tributary to the Turtle River that flows through Kellys Slough NWR, located approximately 2 miles east of the ROI. NDDH has not assigned beneficial uses or established water quality criteria for Kellys Slough.

3.8.2.2 Stormwater

The ROI is heavily developed with existing housing (single-family homes and townhomes), paved roadways, sidewalks, and school facilities. Stormwater drainage at GFAFB is managed through a network of underground pipes and catch basins that direct runoff to four drainage ditches located in the southeastern, northeastern, northwestern, and western areas of the Base. Flow from these ditches is discharged to either Turtle River or Kellys Slough via nine outfalls that are operated under an NPDES Industrial Stormwater General Permit (NDR05-0314). Within the ROI, stormwater is drained by two of the four main outfalls: the South Ditch located at the main gate in the southern part of the ROI and the North Ditch located adjacent to the housing area, in the central portion of the ROI. Both the South Ditch and North Ditch drain into Kellys Slough (GFAFB, 2017, 2024). An open drainage storm sewer is located east of the existing Nathan Twining Elementary and Middle School, along the eastern GFAFB boundary just north of the North Ditch (**Figure 3-2**).

3.8.2.3 Groundwater

The uppermost aquifer at GFAFB is the Emerado Aquifer, located 50 to 75 feet below ground surface. High levels of salt and dissolved solids have degraded the water quality of this aquifer. Potable water for GFAFB is obtained through the City of Grand Forks from surface water resources including the Red River and Red Lake River (GFAFB, 2019). As described in **Section 3.11.2.2**, empty, abandoned, heating fuel underground storage tanks (USTs) are adjacent to each existing school building (see **Figure 3-5** in **Section 3.11.2.2**). The heating fuel tanks were left in place and covered by asphalt parking lots when the schools converted to natural gas heat. During the demolition process under the Proposed Action, the tanks would be safely removed or decommissioned according to USEPA and North Dakota Department of Environmental Quality (NDDEQ) standards. Verbal reports indicate the possibility of heating fuel release from one of the tanks; however, the extent of any release is unknown. As such, there is potential for contaminated soils in the vicinity of these tanks (GFAFB, 2010a).

3.8.2.4 Wetlands

There are no wetlands located within the ROI. The nearest wetland is approximately 650 ft south of the ROI. Therefore, this resource is not carried forward for analysis in this EA.

3.8.2.5 Floodplains

There are no floodplains within the ROI. The nearest floodplain is located approximately 1 mile northwest of the ROI in the northern portion of the airfield. Final project designs would incorporate all applicable local and federal floodplain regulations. Therefore, this resource is not carried forward for analysis in this EA.

[2] See the North Dakota Hydrologic Units Interactive map, https://www.arcgis.com/

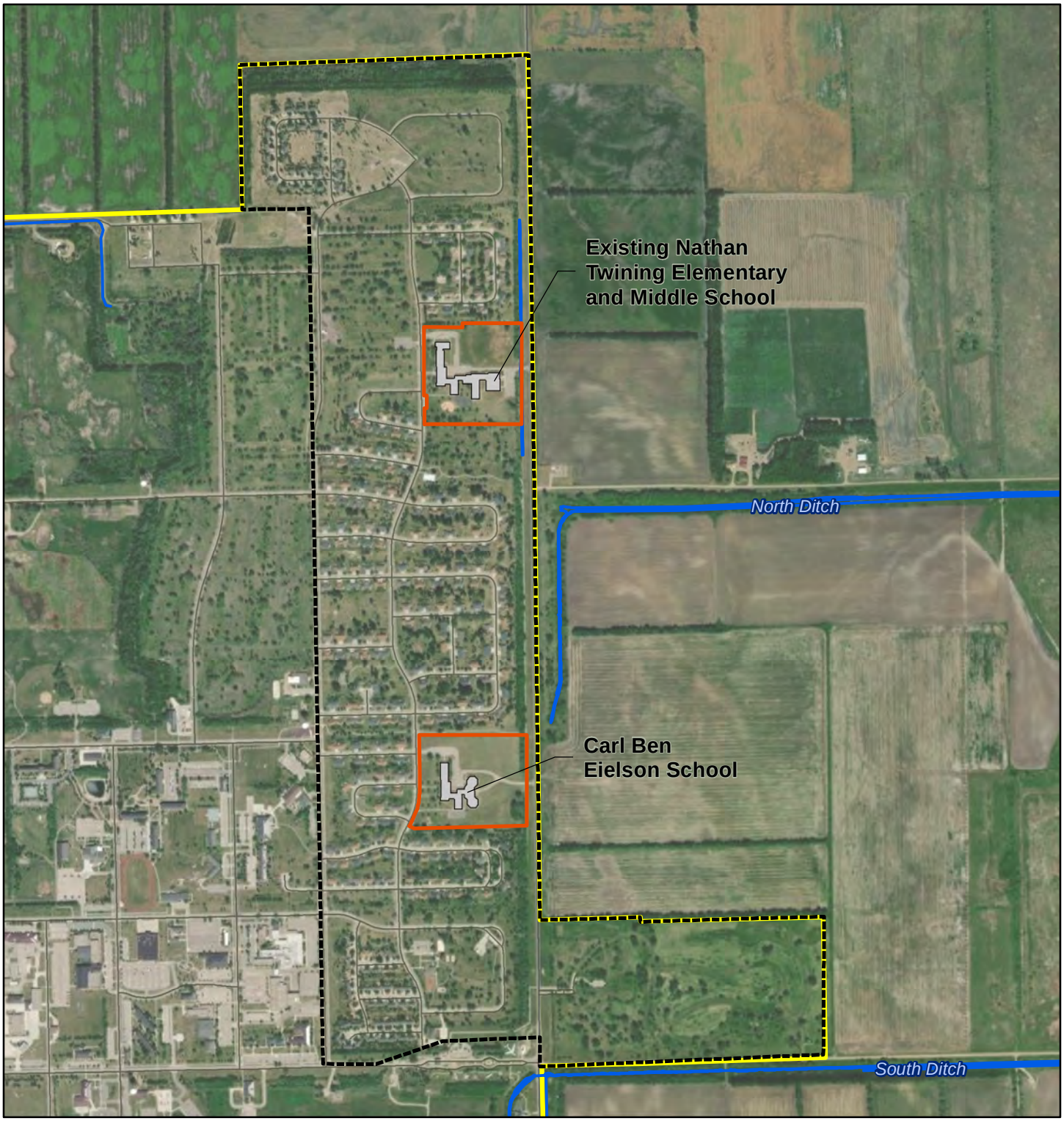
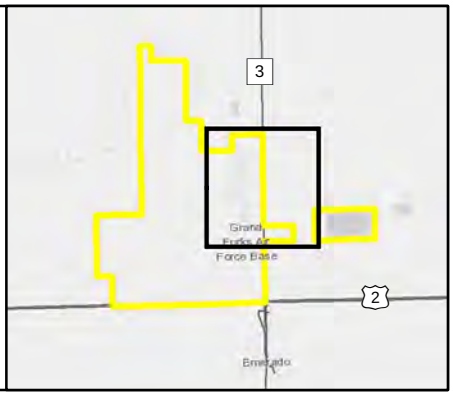


FIGURE 3-2
Water Resources

Drainage Ditch
ROI
Installation Boundary
Project Site
Current School Building

N
0 0.5 Miles

Imagery: Maxar 2021, 2022
Coordinate System: WGS 1984 UTM Zone 14N



ROI = Region of Influence

3.8.3 Environmental Consequences

3.8.3.1 Evaluation Criteria

Evaluation criteria for potential impacts to water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. Potential adverse impacts to water resources would occur if the Proposed Action:

- reduces water availability or supply to existing users,
- overdrafts groundwater basins,
- exceeds safe annual yield of water supply sources,
- adversely affects water quality,
- endangers public health by creating or worsening health hazard conditions, or
- violates established laws or regulations adopted to protect sensitive water resources.

3.8.3.2 Proposed Action

Surface Waters

There are no permanent surface waters within the ROI. An open drainage ditch intermittently carries water from stormwater events. There would be no change to the status of surface waters and therefore no impacts to surface waters would be anticipated to occur under the Proposed Action.

Stormwater

Implementation of the Proposed Action would result in the disturbance of more than 1 acre of land requiring coverage under the NDDEQ NPDES Construction General Permit (including the implementation of a site-specific Stormwater Pollution Prevention Plan). Construction and demolition under the Proposed Action would result in the short-term use of construction and demolition equipment. Use of these types of equipment potentially would increase stormwater contamination from fuels (diesel, motor vehicle gasoline), oils, lubricants, and hazardous chemicals (defined in **Section 3.11**). Stormwater discharge would continue to be monitored throughout the duration of the Proposed Action in accordance with the GFAFBPSD's NPDES permit for construction and demolition actions. Adverse impacts to stormwater from contamination would be short term and minor with implementation of applicable BMPs and techniques, such as proper equipment maintenance and use of chemicals, as well as adherence to all applicable permits and regulations. Under NPDES requirements, development designs for the new Nathan Twining School would maintain or restore, to the maximum extent feasible, the predevelopment hydrologic conditions of the property with respect to water temperature, rate, volume, and duration of flow.

Demolition of Carl Ben Eielson School and subsequent construction of the new Nathan Twining School would result in a net increase of approximately 30,000 ft^2 of impervious surface area at the Carl Ben Eielson School project site. Demolition of the existing Nathan Twining Elementary and Middle School would result in a net decrease of approximately 108,000 ft^2 at that project site. No intended uses have been identified for the existing Nathan Twining Elementary and Middle School project site once demolition of the building is complete; as analyzed in this EA, the site would remain undeveloped. Across both project sites, demolition and construction activities under the Proposed Action would result in an overall net decrease in approximately 78,700 ft^2 of building footprint/impervious surface area within the ROI. The decrease in total impervious surface area would reduce the amount of stormwater runoff and allow for increased natural absorption of stormwater into the ground surface. Further, demolition of the existing Nathan Twining Elementary and Middle School would allow for unimpeded drainage from the project site to the open stormwater drainage ditch currently located along the eastern boundary of the existing Nathan Twining Elementary and Middle School site. This would improve the ability of stormwater to reach other designated stormwater drainages such as the North Ditch (see **Figure 3-2**). Therefore, long-term, minor, beneficial impacts to stormwater in the ROI would be anticipated to occur under the Proposed Action.

Groundwater

Each project site contains an abandoned heating fuel UST. An investigation into potential soil contamination or release into groundwater would be completed prior to construction and demolition activities. As described in **Sections 3.8.2.3** and **3.11.3.2.2**, the tanks would be safely removed or decommissioned according to USEPA and NDDEQ standards prior to demolition to avoid potential contamination during construction and demolition activities. Further, final project designs would adhere to applicable groundwater regulations for construction and development.

The overall decrease of impervious surface area in the ROI would allow for an increase in the ability for groundwater resources to recharge below GFAFB. There have been no identified intended uses for the existing Nathan Twining Elementary and Middle School project site once demolition of the building is complete; as analyzed in this EA, the site would remain undeveloped.

Long-term, minor, beneficial impacts to groundwater due to the removal or decommissioning of the heating fuel tanks, decreased impervious surfaces, and improved groundwater recharge would be anticipated to occur under the Proposed Action.

3.8.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under current conditions. The currently abandoned USTs at the project sites have been buried with probable contamination to groundwater resources and would not be disturbed. There would be no change to overall water resources within the ROI beyond baseline conditions.

3.8.3.4 Cumulative Effects

The Proposed Action would result in no impacts to surface water, wetlands, and floodplains; long-term, minor, beneficial impacts to stormwater; long-term, minor, and both adverse and beneficial impacts to groundwater.

Of the projects listed in **Table 3-1**, multiple projects associated with GFAFB IDP development, the GFAFB BASH EA, and GrandSKY Business Park would result in permanent changes to water resources through the implementation of new construction, the filling of wetlands, and increased impervious surfaces. GFAFB IDP projects would result in the demolition and renovation of existing facilities and the construction of new facilities at GFAFB. Construction, renovation, and demolition associated with the GFAFB IDP would involve up to 15 separate actions scheduled to occur over approximately 6 years (2022–2028). The GFAFB BASH EA would result in the permanent filling of 93 acres of wetlands within GFAFB. However, the permanent filling of wetlands would be offset in the form of mitigation banks in Grand Forks County and would have no direct cumulative effects with implementation of the Proposed Action. Further, the GFAFB BASH EA would result in improvements to stormwater drainage at GFAFB. When combined with the long-term, minor beneficial impacts that would occur to stormwater drainage with implementation of the Proposed Action, indirect beneficial cumulative effects to water resources would be anticipated to occur. GrandSKY Business Park development would result in new construction and increased impervious surfaces over the course of approximately 10 years. All of this work would be completed in compliance with NPDES development designs to maintain or restore, to the maximum extent feasible, the predevelopment hydrologic conditions of the property with respect to water temperature, rate, volume, and duration of flow. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, indirect beneficial cumulative effects to water resources would be anticipated to occur with implementation of the Proposed Action.

3.9 GEOLOGY AND SOILS

3.9.1 Definition of the Resource

Geological resources include geology, topography, and soils. Geology refers to the structure and configuration of surface and subsurface features. Characteristics of geology include geomorphology, subsurface rock types, and structural elements. Topography refers to the shape, height, and position of the land surface. Soil refers to the unconsolidated materials overlying bedrock or other parent material. Soils are defined by their composition, slope, and physical characteristics. Attributes of soil, such as elasticity, load-bearing capacity, shrink-swell potential, and erodibility, determine its suitability to support a particular land use.

Prime farmland, as defined by the USDA in the *Farmland Protection Policy Act* (7 USC §§ 4201–4209), is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses.

The ROI for geology and soils is the Accompanied Housing District within GFAFB.

3.9.2 Affected Environment

3.9.2.1 Geology

GFAFB is in Grand Forks County, North Dakota, near the eastern edge of the Williston Structural Basin. The layers of bedrock that lay below the county slope gently to the west toward the basin's center. Surficial deposits at GFAFB consist of late Wisconsin glacial drift and are approximately 225 ft thick beneath the Base. GFAFB sits within the Agassiz Lake Plain, a flat expanse of land that used to be the bed of Glacial Lake Agassiz, which existed in the area during the melting of the last glacier, approximately 12,000 years ago. Glacial deposits beneath Agassiz Lake Plain consist of up to 95 feet of clay and silt-rich lake deposits, with glacial till containing isolated deposits of sand and gravel. Underneath the glacial deposits are sandstones, siltstones, and shales of the Lower Cretaceous Fall River and Lakota Formations, which are unconformably underlain by limestones and dolomites of the Ordovician Red River Formation.

3.9.2.2 Topography

The topography of Grand Forks County was largely formed due to Glacial Lake Agassiz. The Agassiz Lake Plain physiographic region is characterized by somewhat poorly drained flats and swells separated by shallow, poorly drained portions of land and areas with deep mud. This physiographic region extends westward to the Pembina escarpment in the western portion of the county, which separates the Agassiz Lake Plain District from the Drift Plain District to the west. Prominent physiographic features of the Agassiz Lake Plain District are remnant lake plains, beaches, inter-beach areas, and delta plains that were formed at the mouths of rivers. The elevation of this district ranges from about 1,160 feet above mean sea level (AMSL) along the Pembina escarpment to about 800 feet AMSL in the northeast corner of the county. Within the ROI, topography is relatively flat, averaging about 890 feet AMSL (GFAFB, 2023a).

3.9.2.3 Soils

There are 11 different soil types found within the ROI (**Figure 3-3** and **Table 3-6**). The main soil in the ROI is I159A, or Wyndmere-Tiffany fine sandy loams, which makes up approximately 51.3 percent of the ROI, followed by I201A, or Glyndon silt loam, making up approximately 21.3 percent of the ROI (**Table 3-6**). The Wyndmere-Tiffany fine sandy loams soil type is hydric and classified as "poorly drained." Glyndon silt loam soil is not hydric and is classified as "somewhat poorly drained" (USDA, 2025a, 2025b). The project sites are located in previously disturbed/developed urban portions of the ROI.

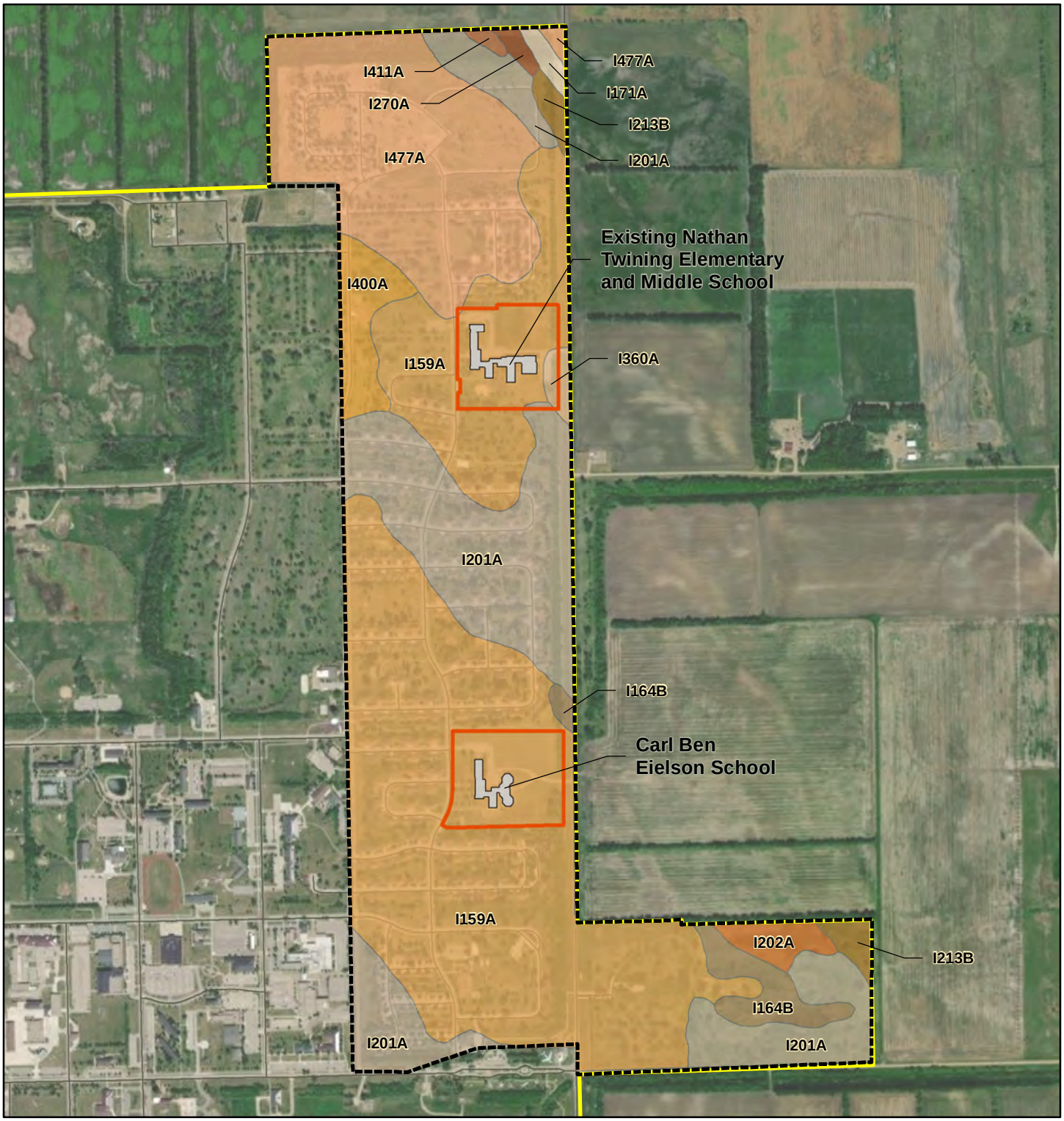


FIGURE 3-3
Soils

ROI
Installation Boundary
Project Site
Current School Building

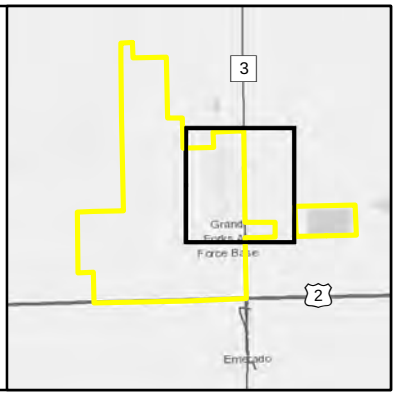
Soils

I159A
I164B
I171A
I201A
I202A
I213B
I270A
I360A
I400A
I411A
I477A

N

0 0.5 Miles

Imagery: Maxar 2020, 2021
Coordinate System: WGS 1984 UTM Zone 14N



ROI = Region of Influence

3.9.2.4 Prime Farmland

Prime farmland, as defined by the USDA in the *Farmland Protection Policy Act* (7 USC §§ 4201–4209), is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses. The land at GFAFB is under military use and is not developable for agricultural purposes. In accordance with 7 CFR § 658.3(b), the acquisition or use of farmland by a federal agency for national defense purposes is exempted per 7 USC § 4208(b). Land within the GFAFB has been, and would continue to be used primarily for military activities and operations; therefore, prime farmland is not carried forward for analysis in this EA.

3.9.3 Environmental Consequences

3.9.3.1 Evaluation Criteria

Potential adverse impacts to geology and soils would occur if the Proposed Action:

- substantially alters unique or valued geologic or topographic conditions;
- causes substantial soil erosion, sedimentation, and/or loss of natural function (e.g., compaction); and
- is developed on soils with characteristics that do not support the intended land use.

3.9.3.2 Proposed Action

Geology

The underlying geology of the ROI would not change with implementation of the Proposed Action. The site locations have already been developed and have been previously altered through grading and recontouring activities; therefore, no impacts to geology would be anticipated to occur under the Proposed Action.

Topography

The Proposed Action would involve ground topography reconstruction, including filling, clearing, grubbing, regrading (via heavy-equipment operation), and landscaping. While demolition and construction activities would alter the current topography within the ROI, it is not anticipated that these activities would amount to a large-scale alteration of current topography. Additionally, the site locations have been previously developed and altered through grading and recontouring activities. The construction of Nathan Twining School would replace the demolished Carl Ben Eielson School, resulting in no substantial change to existing topography. There has been no identified use for the proposed demolished site of the existing Nathan Twining Elementary and Middle School. Topography at the existing Nathan Twining Elementary and Middle School would be leveled and graded to match the surrounding area. Topography reconstruction activities would be limited to those necessary to maintain efficient drainage. Therefore, long-term, minor, adverse impacts to topography in the ROI would be anticipated to occur under the Proposed Action.

Soils

Ground-disturbing activities would occur with implementation of the Proposed Action. Vegetation clearing would leave areas of bare earth that would be more vulnerable to potential erosion and sedimentation. Standing water may occur in the project sites due to compacted clay, hydric, and saline soil from mowing in the semi-improved areas. Regular mowing after completion of construction and demolition activities could lead to increased compaction, causing infiltration issues by increasing surface evaporation and salinity levels due to decreased permeability of the soil. Therefore, short-term, minor, adverse impacts to soils related to ground-disturbing activities would be anticipated to occur under the Proposed Action.

GFAFB requires BMPs to be used during ground-disturbing activities to prevent soil erosion and identify potential soil contamination. BMPs used during implementation of the Proposed Action could include, but would not be limited to, the prompt installation of sod and silt fences, taking post-construction soil stabilization measures (e.g., compaction, erosion control blankets, infiltration trenches), and adhering to BMPs associated with required permits related to erosion and sedimentation prevention. With appropriate

BMPs in place and adherence to all applicable permits, regulations, and management plans, short-term, minor, adverse impacts to soils in the ROI would be anticipated to occur under the Proposed Action.

Table 3-6
Soil Types Associated with Project Area at Grand Forks Air Force Base

Map Unit Symbol	Name	Slope (%)	Drainage Rating	Acres in ROI	Percent of ROI
I159A	Wyndmere-Tiffany fine sandy loams	0–2	Poorly drained	267	51.3
I164B	Zell-Gardena silt loams	2–6	Moderately well drained	12.7	2.4
I171A	Rockwell fine sandy loam	0–1	Poorly drained	2.4	0.5
I201A	Glyndon silt loam	0–2	Somewhat poorly drained	111.2	21.3
I202A	Gardena silt loam	0–2	Moderately well drained	6.6	1.3
I213B	Embden fine sandy loam	0–2	Moderately well drained	6.3	1.2
I270A	Foldahl fine sandy loam	0–2	Moderately well drained	1.8	0.4
I360A	Hamar fine sandy loam	0–1	Poorly drained	2.9	0.6
I400A	Gilby loam	0–2	Somewhat poorly drained	14.1	2.7
I411A	Winger loam	0–1	Poorly drained	1.1	0.2
I477A	Antler silty clay loam, moderately saline	0–2	Somewhat poorly drained	94.5	18.1

Source: USDA, 2025a, 2025b
ROI = Region of Influence

The demolition of the existing Nathan Twining Elementary and Middle School would result in a net decrease of approximately 108,000 ft^2 in impervious surface. Decreased impervious surface would be anticipated to reduce the volume and velocity of stormwater runoff (see **Section 3.8.3.2, Stormwater**) and thus minimize the potential for erosion and offsite transport of sediments. Furthermore, the natural re-vegetation of the demolished area and landscaping of the new Nathan Twining School would benefit soils by reducing soil erosion and sedimentation. Therefore, long-term, minor, beneficial impacts would be anticipated to occur with the demolition of the existing Nathan Twining Elementary and Middle School under the Proposed Action.

3.9.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under current conditions. There would be no change to overall geological resources within the ROI beyond baseline conditions.

3.9.3.4 Cumulative Effects

The Proposed Action would result in no impacts to geology; long-term, minor, adverse impacts to topography; and short-term, negligible, adverse and long-term, minor, beneficial impacts to soils within the ROI. Of the projects listed in **Table 3-1**, multiple projects associated with GFAFB IDP development, the GFAFB BASH EA, and GrandSKY Business Park would result in changes to geology and soil resources through the implementation of new construction, the filling of wetlands, and grading of topography. The use of BMPs and compliance with applicable permits would minimize the cumulative effects to soils. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at Grand Forks AFB, no significant cumulative effects to geological resources would be anticipated to occur with implementation of the Proposed Action.

3.10 CULTURAL RESOURCES

3.10.1 Definition of the Resource

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes. These resources are protected and identified under several federal laws and EOs including the *Archaeological and Historic Preservation Act of 1960*, as amended (54 USC § 312501 et seq.), the *American Indian Religious Freedom Act of 1978* (42 USC § 1996), the *Archaeological Resources Protection Act of 1979*, as amended (16 USC §§ 470aa–470mm), NAGPRA, the NHPA, as amended through 2016, and associated regulations (36 CFR Part 800). The NHPA requires federal agencies to consider effects of federal undertakings on historic properties prior to deciding or taking an action and integrate historic preservation values into their decision-making process. Federal agencies fulfill this requirement by completing the NHPA Section 106 consultation process, as set forth in 36 CFR Part 800. NHPA Section 101(d)(6)(B) requires agencies to consult with any federally recognized Native American tribe that attaches religious and cultural significance to historic properties that may be affected by an undertaking. NHPA Section 106 requires all federal agencies to seek to avoid, minimize, or mitigate adverse effects to historic properties (36 CFR § 800.1(a)).

Cultural resources include the following subcategories:

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

Significant cultural resources are those listed in the NRHP or determined to be eligible for listing. To be eligible for the NRHP, properties must be 50 years old and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They must possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance and meet at least one of four criteria for evaluation:

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

Properties that are less than 50 years old can be considered eligible for the NRHP under Criterion G if they possess exceptional historical importance. Those properties must also retain historic integrity and meet at least one of the four NRHP criteria (Criteria A, B, C, or D). The term “historic property” refers to National Historic Landmarks, NRHP-listed, and NRHP-eligible cultural resources.

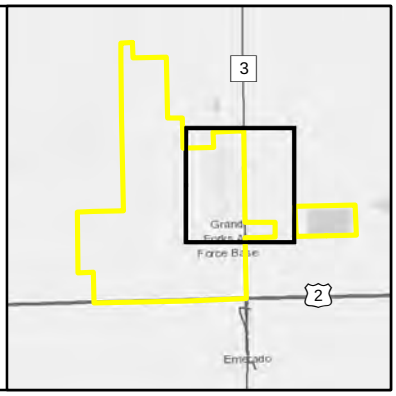
For cultural resources analyses, the ROI is defined by the Area of Potential Effects (APE). The APE is defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist,” (36 CFR § 800.16(d)) and thereby diminish their historic integrity. The APE for this undertaking comprises two noncontiguous areas totaling 38 acres, as defined and concurred on in a letter from the SHPO dated 14 June 2024 (**Appendix A**). The first area includes the 19-acre parcel boundary for the Carl Ben Eielson School campus, and the second area includes the 19-acre parcel boundary for the existing Nathan Twining Elementary and Middle School campus (**Figure 3-4**).

FIGURE 3-4
Area of Potential Effects

Project Site
APE
Installation Boundary
Current School Building

N
0
0.5 Miles

Imagery: Maxar 2020, 2021
Coordinate System: WGS 1984 UTM Zone 14N



APE = Area of Potential Effects

3.10.2 Affected Environment

The GFAFB *Integrated Cultural Resources Management Plan* (ICRMP) provides direction for the protection and management of cultural resources on GFAFB in compliance with the NHPA and other legal requirements (GFAFB, 2023c). The ICRMP describes cultural surveys undertaken by GFAFB to identify historic properties. Relevant known cultural resources are discussed below.

3.10.2.1 Architectural Properties

The APE includes two historic architectural resources: Carl Ben Eielson School (32GF3891) and the existing Nathan Twining Elementary and Middle School (32GF3892). Both resources were surveyed and evaluated for NRHP eligibility in March 2024 by Beaver Creek Archaeology, Inc. (BCA) (Arnold, 2024). In BCA's report, Carl Ben Eielson School was recommended to be eligible for NRHP listing under Criteria A and C, and the existing Nathan Twining Elementary and Middle School was recommended not eligible. The SHPO concurred with these recommendations in a letter dated 7 November 2024 (**Appendix A**).

Carl Ben Eielson School, named for the Arctic explorer native to North Dakota (1897–1929), is a single-story school building with a poured concrete foundation, reinforced concrete block walls with orange brick veneer, fixed 1/1 industrial windows, and a flat roof. Construction of the 18-classroom facility, designed by Grand Forks architectural firm Grosz and Anderson, began in 1959. Grosz and Anderson also designed an addition to the building that was completed in 1965 and included two octagonal wings to the north and south of an elongated octagonal plan. The overall plan of Carl Ben Eielson School with the addition measures approximately 340 ft east to west by 295 ft north to south. The school opened in 1960 and closed in 2014.

Carl Ben Eielson School was previously evaluated for NRHP eligibility in 2011 and was recommended not eligible. However, the school's original blueprints were not available at the time of the 2011 evaluation, and an assumption was made that the windows were "now infilled at the top with stucco above ribbons of metal windows" and that the school "now" had "large areas of glass block on [the gymnasium's] east and west walls where ribbon windows were originally located" (Arnold, 2024). During the 2024 evaluation, GFAFBPSD was able to locate and provide the original blueprints, which confirmed that the glass block described above was original to the architectural design. Thus, the historical integrity of the building remained intact, and the school was recommended and concurred on by SHPO as eligible for NRHP listing under Criterion A for historical associations with North Dakota educational history and under Criterion C as an intact example of the distinctive design of mid-century school buildings constructed by Grosz and Anderson, one of three architectural firms hired by the Grand Forks Board of Education within this time period to construct examples of the style.

3.10.2.2 Archaeological Properties

No archaeological resources have been identified within the APE. During the Section 106 consultation process, the SHPO determined that no archaeological survey would be necessary for this undertaking due to previous ground disturbance. In the 7 November 2024 concurrence letter, the SHPO determined that an archaeological survey was not required due to previous disturbance. At SHPO's request, an inadvertent discovery plan for the undertaking was provided and accepted. The plan details procedures to be followed in the event that unidentified archaeological sites are encountered and provides standard operating procedures for the inadvertent discovery of archaeological resources or human remains. Therefore, this resource is not carried forward for analysis in this EA.

3.10.2.3 Traditional Cultural Properties

There are 29 federally recognized Native American Tribes that have historical ties to GFAFB and the surrounding area. To date, no TCPs have been identified within the APE. As such, this resource is not carried forward for analysis in this EA. A list of the tribes that were contacted via mail on 31 January 2024,10 May 2024, and again on 27 September 2024 regarding the Proposed Action is included in **Appendix A**.

3.10.3 Environmental Consequences

3.10.3.1 Evaluation Criteria

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

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

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

3.10.3.2 Proposed Action

Architectural Properties

Under the Proposed Action, the NRHP-eligible Carl Ben Eielson School (32GF3891) would be demolished, and a new Nathan Twining School would be constructed in its place. The demolition of Carl Ben Eielson School would constitute a direct, major, and irreversible adverse effect on historic architectural resources, as it would result in the complete loss of a property eligible for listing on the NRHP. This action would eliminate all character-defining features that contribute to the building's historic significance, including its original design, materials, and workmanship. Because demolition is not a reversible action, the Proposed Action would permanently remove Carl Ben Eielson School from the historic landscape.

In accordance with Section 106 of the NHPA, this adverse effect would require mitigation measures to record the building's historic significance before demolition occurs. To mitigate adverse effects to the historic property, a MOA was signed among the DAF, the SHPO, and GFAFBPSD. In a letter signed on 9 December 2024, the DAF notified the Advisory Council on Historic Preservation (ACHP) via mail and the electronic ACHP e106 form of the adverse effect determination. In the ACHP notification letter, DAF noted that, in reference to 36 CFR § 800.6(1), it is suggested the Proposed Action does not involve criteria likely to cause the ACHP to participate in development of the anticipated MOA to resolve adverse effects due to the destruction of the identified eligible historic property. The ACHP responded to the DAF's notification letter on 19 December 2024 that stated that their participation in the consultation to resolve adverse effects is not needed.

The terms of the MOA requires the design and creation of a historic exhibition to be displayed in the new Nathan Twining School, which would be constructed in the same location as the existing Carl Ben Eielson School building. The exhibit would include elements of history recognizing the Carl Ben Eielson School, local community history, GFAFB history, and/or historic namesakes. The design for the proposed new Nathan Twining School includes approximately 70 feet of free wall space in a high traffic area and a planned display case approximately 11 ft wide. This space would include historic imagery, writing, and/or photographs to provide information in a visibly accessible way for visitors, students, and staff as they spend time in the school for day-to-day education, work, or for special events. The exhibit would be designed with materials such as digital graphics or acrylic standoffs that are easy for GFAFBPSD to maintain and that protect the longevity of the exhibit. The GFAFBPSD would be responsible for maintaining the exhibit into the future including repair in the case of natural wear and tear or vandalism, and general upkeep.

3.10.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under current conditions.

Carl Ben Eielson School, which is eligible for listing in the NRHP, would not be demolished and would remain vacant and unmaintained. Over time, exposure to the elements, lack of maintenance, and potential vandalism would result in the gradual deterioration of the building's structural integrity and character-defining features. This process, commonly referred to as "demolition by neglect," would lead to a progressive loss of the property's historic integrity, including aspects of design, materials, and workmanship, and could eventually lead to the school building losing its eligibility for NRHP listing. Therefore, the No Action Alternative would be anticipated to result in long-term, indirect, and moderate adverse effects to the NRHP-eligible Carl Ben Eielson School building due to neglect and deterioration. If deterioration continues unchecked, these effects could become major, potentially leading to the loss of the building's structural integrity and complete disqualification from NRHP eligibility.

3.10.3.4 Cumulative Effects

The Proposed Action would result in direct, long-term, minor, adverse effects to cultural resources. The Proposed Action would result in an adverse effect to Carl Ben Eielson School (32GF3891) through its demolition. This adverse effect would be resolved with an MOA prior to commencement of demolition. A 2014 cultural resources survey was conducted within the GrandSKY Business Park property and did not identify any historic properties, archaeological properties, or TCPs. Of the other projects listed in **Table 3-1,** none would have an impact on TCPs or architectural properties. Further, no archaeological resources have been identified as eligible for listing in the NRHP and all projects evaluated under the BASH EA and IDP EA would occur on previously developed land. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to cultural resources would be anticipated to occur with implementation of the Proposed Action.

3.11 HAZARDOUS MATERIALS AND WASTES, TOXIC SUBSTANCES, AND CONTAMINATED SITES

3.11.1 Definition of the Resource

The *Comprehensive Environmental Response, Compensation, and Liability Act* (42 USC § 9601 et seq.) (CERCLA), as amended by the *Superfund Amendments and Reauthorization Act* (SARA) and the *Toxic Substances Control Act* (TSCA) *of 1979* (15 USC § 2601 et seq., as implemented by 40 CFR Part 761), defines hazardous materials (HAZMAT) as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, and incapacitating reversible illness, or that might pose a substantial threat to human health or the environment. The OSHA is responsible for the enforcement and implementation of federal laws and regulations pertaining to worker health and safety under 29 CFR Part 1910. OSHA also includes the regulation of HAZMAT in the workplace and ensures appropriate training in their handling.

The *Solid Waste Disposal Act*, as amended under the *Resource Conservation and Recovery Act* (42 USC § 6901 et seq.) (RCRA) and further amended by the *Hazardous and Solid Waste Amendments of 1984*, defines hazardous wastes as any solid, liquid, contained gaseous, or semi-solid waste, or any combination of wastes, that pose a substantial present or potential hazard to human health or the environment. In general, both HAZMAT and hazardous wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health and welfare or the environment when released or otherwise improperly managed.

Evaluation of HAZMAT and hazardous wastes focuses on USTs and above-ground storage tanks (ASTs) as well as the storage, transport, and use of pesticides, fuels, oils, and lubricants. Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs

at or near the project site of a proposed activity. In addition to being a threat to humans, the improper release of HAZMAT and hazardous wastes can threaten the health and wellbeing of wildlife species, botanical habitats, soil systems, and water resources. In the event of HAZMAT and hazardous wastes release, the extent of contamination would vary based on the type of soil, topography, weather conditions, and water resources that occur in the vicinity of the event.

Through the Environmental Restoration Program (ERP) initiated in 1980, a subcomponent of the Defense ERP that became law under SARA (formerly the Installation Restoration Program), each DoD installation is required to identify, investigate, and clean up hazardous waste disposal or release sites. Remedial activities for ERP sites follow the Hazardous and Solid Waste Amendments under the RCRA Corrective Action Program. The ERP provides a uniform, thorough methodology to evaluate past disposal sites, control the migration of contaminants, minimize potential hazards to human health and the environment, and clean up contamination through a series of stages until it is decided that no further remedial action is warranted.

Description of ERP activities provides a useful gauge of the condition of soils, water resources, and other resources that might be affected by contaminants. It also aids in the identification of properties and their usefulness for given purposes (e.g., activities dependent on groundwater usage might be foreclosed where a groundwater contaminant plume remains to complete remediation).

Toxic substances might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos-containing materials (ACMs), lead-based paint (LBP), radon, polychlorinated biphenyls (PCBs), and per- and polyfluoroalkyl substances (PFAS). A proposed activity may affect and be affected by the presence of toxic substances or controls over them. Information on toxic substances describing their locations, quantities, and condition assists in determining the significance of such activity.

The ROI for HAZMAT and wastes is the project sites within the Accompanied Housing District at GFAFB.

3.11.2 Affected Environment

3.11.2.1 Hazardous Materials and Wastes

GFAFBPSD manages hazardous waste independently of GFAFB. The procedures and standards governing the issue, supply, use, and/or disposal of HAZMAT, and recordkeeping for safety and legal compliance are established under RCRA. Hazardous waste that may be generated by GFAFBPSD includes used/cured adhesives, sealants and coatings with wood sticks, paper and personal protective equipment, paint-related waste, parts washer liquid and sludge, broken lamps, aerosol cans, solvents, and amalgam-related waste (a mercury containing material) (GFAFB, 2010a, 2020a).

A permitted treatment, storage, and disposal facility is not operated on the Base. As a condition of the school lease, GFAFBPSD must comply with all applicable federal, state, and local laws, regulations, and other requirements relating to the handling and storage of HAZMAT as well as the generation, handling, accumulation, treatment, storage, disposal, and transportation of hazardous wastes. All required permits would be obtained as required under RCRA.

The GFAFB Hazardous Waste Management Plan (HWMP) identifies 10 active satellite accumulation points (SAP) and three active hazardous waste accumulation sites on Base, none of which are located within the ROI. GFAFBPSD is not permitted to utilize GFAFB SAP and manages their own HAZMAT and wastes (GFAFB, 2010a, 2020a).

3.11.2.2 Toxic Substances

Toxic substances can be present in the production, use, and disposal of specific chemicals. GFAFBPSD maintains operations and procedures that are in accordance with regulations and guidelines specific to toxic substances. While the use of these substances in common materials has been banned for several decades, such substances may still be found in some areas of the ROI as described below.

Asbestos

Asbestos is regulated by USEPA under the CAA; CERCLA; TSCA; and North Dakota Administrative Code 33.1-15-13, *Emission Standards for Hazardous Air Pollutants* under the authority of OSHA. In , the USEPA issued the Asbestos Ban and Phaseout Rule that banned most asbestos-containing products; as such, buildings constructed prior to 1989 are assumed to contain asbestos. Asbestos can be found in a variety of materials such as floor tiles, mastics and adhesives, pop-corn ceiling, roofing materials, joint compound, pipe insulation, and window glazing.

As a condition of the lease, GFAFBPSD is responsible for maintaining an Asbestos Management Plan that details responsibilities and requirements for identifying, evaluating, and maintaining ACMs. Review of maintenance, renovation, or demolition activities that might disturb asbestos is completed by the GFAFB Commander to ensure that appropriate measures are taken to prevent release of and exposure to friable (easily crumbled or pulverized) asbestos (GFAFB, 2018a, 2008, 2010). The two structures of focus in the ROI are the existing Nathan Twining Elementary School, constructed in 1961, and Carl Ben Eielson School, constructed in 1959. Grand Forks Public Schools (GFPS) complies with the *Asbestos Hazard Emergency Response Act of 1986* (Public Law 99-519) (AHERA) by maintaining a management plan for ACMs and records of related activities. Notices about the presence of asbestos in school facilities are provided annually, with re-inspections of active facilities conducted every three years. The GFPS AHERA 2024 three-year inspection report for the existing Nathan Twining Elementary and Middle School identified ACMs throughout the facility (GFPS, 2024a). Due to Carl Ben Eielson School's closure in 2014, the school is not subject to triennial inspections. However, an asbestos and hazardous material survey completed in 2024 identified a substantial amount of ACM throughout the building in floor tiles and mastic, pipe insulation, chalkboards and adhesives, roof drains, exterior brick seam caulk, window caulk, and vermiculite insulation (GFPS, 2024b; Integrity Environmental, 2025). Pre-demolition hazardous material abatement for Carl Ben Eielson School was completed in February 2025 and ACMs have been removed (Integrity Environmental, 2025). Asbestos in Carl Ben Eielson School will not be discussed further in this section.

Lead-Based Paint

Lead is a naturally occurring heavy metal that has been used in a variety of products including ceramics, pipes, plumbing materials, paint, gasoline, and batteries. In 1978, LBP containing lead levels equal to or higher than 0.06 percent of 600 ppm was banned after it was found to pose serious health risks, particularly to children. Additionally, paint chips containing lead can lead to additional environmental concerns such as the contamination of underlying soil from deteriorating and flaking paint.

Lead is regulated by USEPA and the State of North Dakota under the North Dakota Administrative Code Chapter 33.1-15-24, *Standards for Lead-Based Paint Activities.* GFAFBPSD follows procedures stated in the *Residential LBP Hazard Reduction Act of 1992* (Public Law 102-550), also referred to as Title X, on the use and disposal of LBP on federal facilities. It is likely that LBP is present in both the existing Nathan Twining Elementary and Middle School and Carl Ben Eielson School due to their construction dates preceding the 1978 ban on LBP.

Polychlorinated Biphenyls

PCBs are a group of man-made organic chemicals commercially manufactured from 1929 until production was banned in 1979 by the TSCA. PCBs were used in many industrial and commercial applications due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties. Oil containing PCBs is commonly found in older electrical transformers and light fixtures. Many of the products that contain PCBs have been removed from use; however, legacy equipment that contains PCBs at concentrations greater than 50 ppm is occasionally encountered. TSCA regulates the disposal of PCBs at concentrations greater than 50 ppm.

The electrical power supply grid and equipment at GFAFB are managed by Nodak Electric Cooperative. Most of the oil-filled equipment consists of pole-mounted transformers on concrete pads (GFAFB, 2024b). Transformers containing oil with a PCB concentration greater than 50 ppm have been removed from service or were refilled with non-PCB oils. Additionally, all unlabeled transformers and transformers missing date-

of-manufacture labels are treated as containing PCBs (GFAFB, 2010b). As such, there are no electrical transformers known to contain PCB oils within the ROI.

Petroleum Products

The use, storage, and transportation of petroleum products is vital to the mission of GFAFB. GFAFB sustains an inventory of ASTs and USTs on the Base that includes the location, contents, capacity, containment measures, status, and installation dates of each tank. The GFAFB Spill Prevention, Control, and Countermeasure Plan is prepared in accordance with 40 CFR Part 112, *Environmental Protection Agency Regulations on Oil Pollution Prevention*, and establishes procedures, methods, equipment, and other criteria to prevent the discharge of petroleum into navigable waters or adjoining shorelines (GFAFB, 2024b). There are no GFAFB-managed ASTs or USTs within the ROI.

Two USTs managed by GFAFBPSD are located within the ROI. These USTs are empty, abandoned, underground heating fuel tanks and are located adjacent to each school (**Figure 3-5**). The heating fuel tanks were left in place and covered by asphalt parking lots when the schools converted to natural gas heat. GFAFB has indicated that the tanks have been emptied and capped; however, the size of the tanks is undetermined. Due to the age of the tanks and their unknown condition, it is presumed that the tanks have leaked over time and the soil surrounding the tanks could be contaminated (GFAFB, 2010a).

3.11.2.3 Radon

The USEPA classifies radon into three zones based on the greatest potential for elevated indoor radon levels:

- **Zone 1:** Highest radon potential, with average indoor radon levels above 4 picocuries per liter (pCi/L)
- **Zone 2:** Moderate radon potential, with average indoor radon levels between 2 and 4 pCi/L
- **Zone 3:** Lowest radon potential, with average indoor radon levels below 2 pCi/L

Although Grand Forks County is located in Zone 1, radon potential throughout the county varies (USEPA, 2025). Each zone designation reflects the average short-term radon measurement that can be expected in a building without the implementation of radon control methods, such as ventilation, room pressurization, or sealing of cracks. Radon testing at the existing Nathan Twining Elementary and Middle School indicate that the facility's average indoor radon levels are below 2 pCi/L (Alpha Energy Laboratories, 2020). No radon testing has been completed at Carl Ben Eielson School since its closure in 2014.

3.11.2.4 Per- and Polyfluoroalkyl Substances

In April 2024, the USEPA issued the Final National Primary Drinking Water Regulation that established Maximum Contaminant Levels for six PFAS chemicals in drinking water: Perfluorooctane sulfonate, perfluoroofctanoic acid, perfluorohexane sulfonate, perfluorononanoic acid, and hexafluoropropylene oxide dimer acid. PFAS are known for their persistence in nature and their resistance to breaking down. PFAS are often prevalent around airfields due to the use of aqueous film-forming foam (AFFF) for fire suppression. In the 1970s, the DAF began using AFFF as a firefighting agent to extinguish petroleum fires, as it provides essential burn-back resistance, protections against vapor resistance, and rapid extinguishment. In November 2015, AFFF formulas that are more environmentally responsible replaced the previous formula (Air Force Civil Engineer Center, 2025).

A preliminary assessment was performed in 2019 to identify locations at GFAFB where PFAS may have been released (Aerostar SES LLC., 2019). There have been no identified release sites located within the ROI. Therefore, this resource is not carried forward for analysis in this EA.

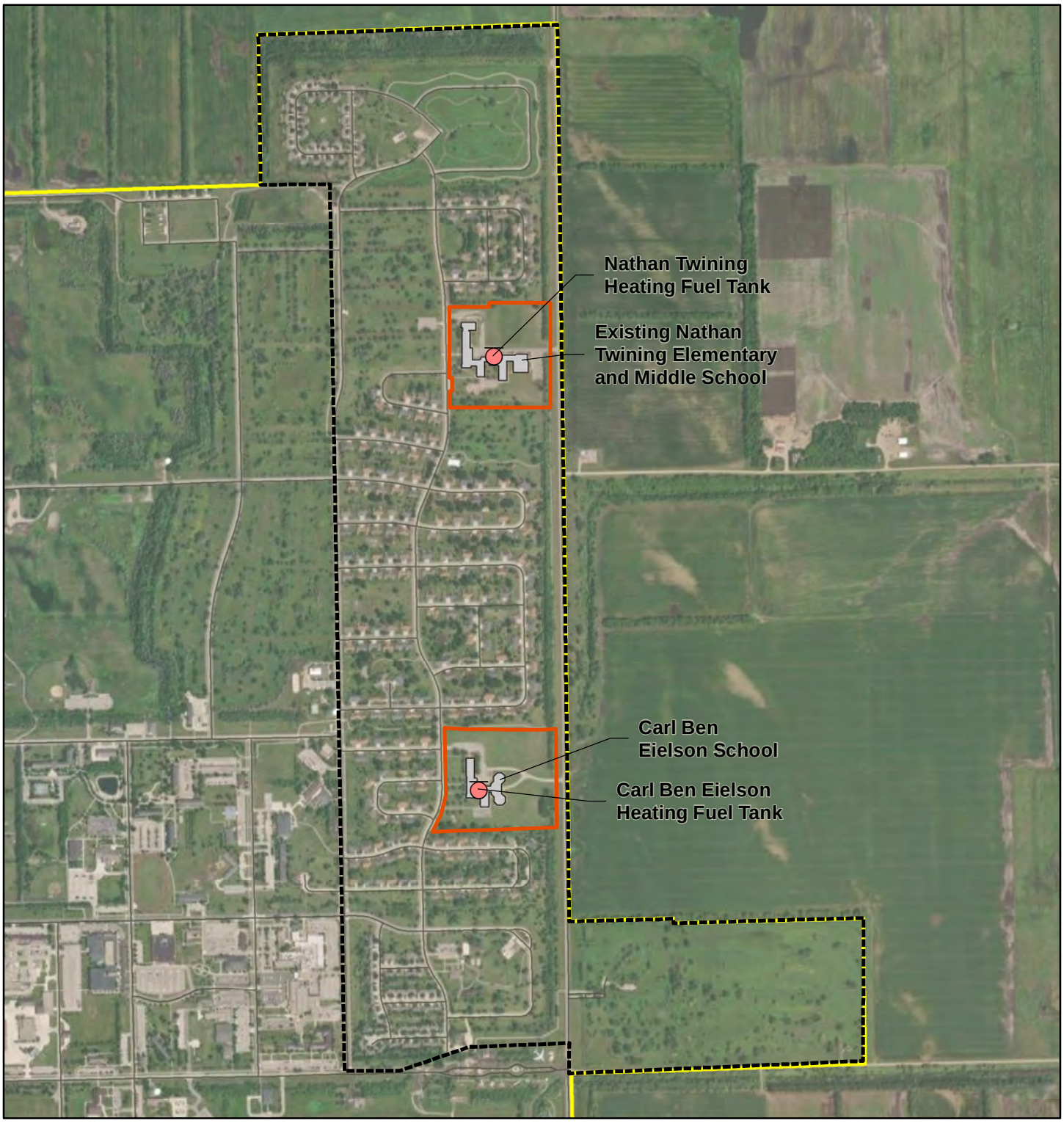
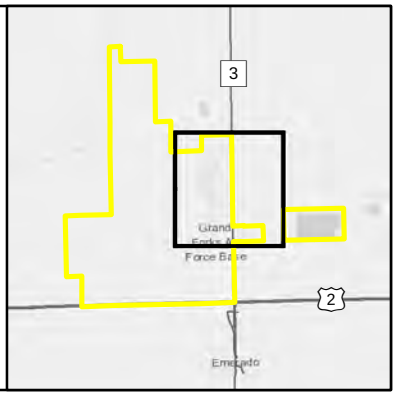


FIGURE 3-5
Hazardous Materials and Wastes

UST
ROI
Installation Boundary
Project Site
Current School Building

N
0 0.5 Miles

Imagery: Maxar 2021, 2022
Coordinate System: WGS 1984 UTM Zone 14N



ROI = Region of Influence; UST = Underground Storage Tank

3.11.2.5 Pesticide Management

As noted by the school lease, the GFAFB Integrated Pest Management Plan authorizes the application of all pesticides at the Base, including herbicides, fungicides, insecticides, and rodenticides. Policies, standards, and requirements that establish and maintain safe and environmentally sound pest management practices are detailed in the plan (GFAFB, 2010a, 2023b). GFAFB also operates under a North Dakota Pesticide Discharge General Permit, which authorizes discharge to surface waters of the state from the handling, use, or application of pesticides for activities conducted in accordance with state laws and regulations; the *Federal Insecticide, Fungicide, and Rodenticide Act* (7 USC § 136); and proper pesticide labeling procedures (GFAFB, 2018b).

Pesticide use within the ROI has included aerial spray mosquito control and, where needed, to control weeds and invasive or nuisance insects (GFAFB, 2018b). All pesticides used on the Base are USEPA- or state-registered. Nonstandard pesticides are managed by the Pest Management Coordinator. Chlordane, which historically has been used to control insects in homes and buildings, was banned by USEPA in 1988. Chlordane has not been used on GFAFB (GFAFB, 2010b).

3.11.2.6 Environmental Restoration Program

The DoD's ERP requires each installation to identify, investigate, and remediate hazardous waste disposal or release sites. ERPs are utilized to identify and fully evaluate any areas suspected to be contaminated with HAZMAT from past DAF operations and to eliminate or control any hazards to the public health, welfare, or the environment. Fully restored ERP sites have minimal restrictions for future development, but land use controls may be necessary. These controls limit access to contaminated areas to ensure safety and protect health and the environment. GFAFB has five ERP sites and one area of concern; no ERP sites or areas of concern are located within the ROI. Therefore, this resource is not carried forward for analysis in this EA.

3.11.3 Environmental Consequences

3.11.3.1 Evaluation Criteria

A significant impact to HAZMAT and hazardous wastes, petroleum/oil/lubricants, toxic substances, and contaminated sites within the ROI would occur if the Proposed Action results in:

- noncompliance with applicable federal and state regulations;
- increased amounts of hazardous waste generated or procured beyond GFAFB's current waste management procedures and capacities; or
- disturbance or creation of contaminated sites resulting in negative effects on human health or the environment.

Impacts to ERP sites would be considered adverse if the Proposed Action disturbs (or creates) contaminated sites resulting in adverse effects to human health or the environment. Physical development of contaminated sites could expose construction and maintenance workers, visitors, occupants, or ecological systems to potential hazards associated with contaminants.

3.11.3.2 Proposed Action

Hazardous Materials and Wastes

Construction and demolition activities would require the use and disposal of certain HAZMAT such as paints, solvents, welding gases, sealants, and preservatives. It would be anticipated that the quantity of products containing HAZMAT used during the development of the Proposed Action would be minimal and for a short duration. Contractors would be responsible for the management of HAZMAT, which would be handled in accordance with federal, state, and local regulations.

The quantity of hazardous waste generated or encountered during construction and demolition activities would be expected to be minor. Contractors would follow regulations and procedures to dispose of

hazardous wastes properly. Contractor and personnel risk and exposure to hazardous wastes can be minimized by following RCRA guidelines. Hazardous wastes would be removed and disposed of in accordance with federal, state, and local regulations, as well as in accordance with the GFAFB HWMP. Therefore, short-term, minor, adverse impacts to HAZMAT and waste would be anticipated to occur under the Proposed Action.

Toxic Substances

Asbestos

The GFPS AHERA 2024 three-year inspection report for the existing Nathan Twining Elementary and Middle School identified ACMs throughout the facility. A substantial amount of ACM is present in floor tiles and mastic (adhesive used for flooring), and was also identified in plaster ceilings, transite chalkboard, vermiculite, and fire doors. As such, hazardous material abatement services would be required for the existing Nathan Twining Elementary and Middle School prior to the facility's proposed demolition.

ACM was banned from use in 1989. As such, construction of the new Nathan Twining School would not use ACM. Contractors would be required to adhere to all federal, state, and local regulations in addition to requirements of the Base Asbestos Management Plan. A completed Notification of Demolition and Renovation form would be submitted to NDDEQ 10 working days prior to the start of asbestos abatement or demolition activities if more than 160 ft^2 of ACM or more than 260 linear feet of asbestos-containing thermal system insulation would be disturbed (NDDEQ, 2025).

Asbestos management is standard for projects requiring the demolition of a structure and is an anticipated component of the Proposed Action. The resource allocation required for asbestos management during implementation of the Proposed Action would be anticipated to be temporary and would not substantially impact the overall management of asbestos at the Base. Current AHERA requirements for managing asbestos at the existing Nathan Twining Elementary and Middle School requires ongoing inspections and maintenance. In that regard, the removal of all ACMs from the existing school in preparation for its proposed demolition would reduce the long-term burden of asbestos management for GFPS and GFAFB. Further, the demolition of the building and the required pre-demolition abatement that would take place would eliminate the potential for asbestos exposure from the existing building that would result in long-term, beneficial impacts in relation to asbestos exposure. Therefore, long-term, moderate, beneficial impacts to asbestos management in the ROI would be anticipated to occur under the Proposed Action.

Lead-Based Paint

The USEPA's Lead Renovation, Repair, and Painting rule does not require LBP abatement for the total demolition of a structure. However, LBP can still release hazardous dust during the demolition process. Licensed contractors would follow lead-safe work practices such as containing the work area, minimizing lead dust and debris, and conducting a thorough post-demolition cleanup. Removal of LBP during demolition of the existing Nathan Twining Elementary and Middle School and Carl Ben Eielson School would minimize the risk of exposure to lead through deteriorating paint and debris at the facilities. Therefore, long-term, moderate, beneficial impacts to LBP management in the ROI would be anticipated to occur under the Proposed Action.

Polychlorinated Biphenyls

No existing transformers or electrical equipment within the ROI contain known PCBs. Any unlabeled ballasts and transformers encountered during demolition would be disposed of in accordance with federal, state, and local regulations. Therefore, no impacts to PCB management in the ROI would be anticipated to occur under the Proposed Action.

Petroleum Products

The use of certain petroleum products would be required during implementation of the Proposed Action. Petroleum-based products, such as diesel and gasoline, would be used in construction, demolition, and grading equipment. Construction contractors would be responsible for using petroleum products in accordance with BMPs identified in the GFAFB Spill Prevention, Control, and Countermeasure Plan.

As a BMP, an investigation into potential releases of the abandoned heating fuel USTs adjacent to the schools should be completed prior to construction and demolition. During proposed demolition, the tanks

would be safely removed or decommissioned according to USEPA and NDDEQ procedures and regulations to avoid potential contamination during construction and demolition activities. Removal of the USTs also would address the prolonged liability of potential soil contamination from leaving the tanks in place.

The AST is located 0.3 mile away from the existing Nathan Twining Elementary and Middle School and would not be anticipated to be affected by the Proposed Action. The use and volume of petroleum products would not be anticipated to increase after the Proposed Action is completed.

With the removal or proper closure of the abandoned heating fuel USTs, long-term, minor, beneficial impacts related to petroleum products in the ROI would be anticipated to occur under the Proposed Action.

Radon

The USEPA radon zone for Grand Forks County is Zone 1 (high potential, predicted indoor average level greater than 4 pCi/L). It is possible that, after construction, the new Nathan Twining School could have indoor radon screening levels greater than 4 pCi/L. As radon levels have not been tested at the Carl Ben Eielson School project site, radon would be managed in the newly constructed Nathan Twining School through the incorporation of passive features into the design that limit the ability for radon to enter the building, and by employing BMPs such as conducting periodic radon testing. Post-construction radon management measures, such as installing ventilation systems to remove radon that has already entered the building, would be taken in the event that the new school tests higher than 4 pCi/L. With BMPs in place, no impacts related to radon in the ROI would be anticipated to occur under the Proposed Action.

Pesticide Management

Under the Proposed Action, there could be an increase in the number of pesticides, herbicides, fungicides, insecticides, and rodenticides used during construction and demolition activities. Older, vacant buildings slated for demolition, such as Carl Ben Eielson Elementary, can be ideal habitats for rodents and pests. Demolition activities may disrupt these habitats and cause pests to influx into nearby areas. Additionally, demolition may result in sparse vegetative areas ideal for noxious weed growth. Herbicide and pesticide applications could adversely impact non-target species and also result in downstream contamination due to runoff from application sites and cause unintentional releases to the environment through spills and errors in the application of chemicals. Usage of pesticides, herbicides, fungicides, insecticides, and rodenticides after the completion of construction and demolition would be conducted on an as-needed basis, consistent with the GFAFB Installation Pest Management Plan and in compliance with the North Dakota Pesticide Use Permit. Therefore, short-term, minor, adverse impacts from increased pesticide usage would be anticipated to occur under the Proposed Action.

3.11.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under current conditions. As of February 2025, ACM has been fully abated at Carl Ben Eielson School. Under current conditions, LBP would remain present in both facilities, and the risk of exposure would remain unchanged. The presence of ACM at the existing Nathan Twining Elementary and Middle School would remain unchanged. The currently abandoned heating fuel USTs at the project sites have been buried and would not be disturbed or removed and the potential for leakage and/or contamination would remain.

3.11.3.4 Cumulative Effects

Implementation of the Proposed Action would result in long-term, minor, beneficial impacts to asbestos, LBP, and petroleum products; short-term, negligible, adverse impacts to petroleum products; short-term, and minor, adverse impacts to pesticide management; and no impacts to PCBs, radon, per- and polyfluoroalkyl substances, or ERP sites.

Of the projects listed in **Table 3-1**, the GFAFB IDP projects, Nodak Electric Cooperative Facility, and GrandSKY Business Park development would result in new construction, renovation, and demolition

activities. It is expected that these projects would follow appropriate guidelines for the use and removal of HAZMAT. The temporary beddown for the B-1B aircraft started in December 2024. However, by the time the new school is constructed and operational in 2026, the B-1B aircraft will no longer be located at GFAFB resulting in no cumulative effects. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to HAZMAT and wastes would be anticipated to occur with implementation of the Proposed Action.

3.12 INFRASTRUCTURE, INCLUDING TRANSPORTATION, AND UTILITIES

3.12.1 Definition of the Resource

Infrastructure consists of the systems and structures that enable a population in a specified area to function. Infrastructure is wholly man-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as developed. Infrastructure components include transportation, utility systems, solid waste management, and stormwater infrastructure. The availability of infrastructure and its capacity to support more users, including future development of an area, are generally regarded as essential to continued economic growth.

Transportation is defined as the system of roadways, highways, and transit services that provide entrance/exit to or from a particular location, as well as access to regional goods and services. Utility systems include communications systems, electricity, natural gas, potable water, and sanitary sewage. Solid waste management primarily relates to landfill capacity for disposal of nonhazardous solid waste (e.g., construction waste) generated in an area or by a population. Stormwater infrastructure includes the man-made conveyance systems that function in tandem with natural drainages to collect and control the rate of surface runoff during and after a precipitation event. In urbanized areas, stormwater that is not discharged to a waterbody is conveyed to sanitary sewers, which are systems that collect, move, and treat liquid waste prior to its discharge back into the environment. **Section 3.8** of this EA discusses stormwater conditions and potential impacts from the Proposed Action.

The ROI for infrastructure, including transportation and utilities, is the Accompanied Housing District within GFAFB.

3.12.2 Affected Environment

3.12.2.1 Transportation

GFAFB is supported by three major roadways and two access control points (ACP). The transportation system at GFAFB comprises more than 420 acres of paved roadways, driveways, and parking lots, almost half of which is paved roadways. The two ACPs include the main gate located off County Road B3 (25th Street Northeast), about 1 mile north of US-2, and the secondary commercial vehicle inspection (CVI) gate, located off US-2, about 0.75 mile west of 25th Street Northeast (**Figure 3-6**). The main gate is connected to Steen Boulevard, which is the main east-to-west road within GFAFB and serves passenger traffic across the Base, including in the ROI. The CVI gate is connected to Eielson Street, which is the main north-to-south road on GFAFB and serves commercial vehicle and truck traffic. Most traffic enters and exits the Base through the main gate, which is manned 24 hours a day, 7 days a week. The CVI is operated from 6 a.m. to 4 p.m. Traffic volume peaks entering the Base from 6 a.m. to 8 a.m. and exiting from 4 p.m. to 6 p.m. Together, the gates average approximately 34,000 scans per week (GFAFB, 2017).

Transportation access to Carl Ben Eielson School and the existing Nathan Twining Elementary and Middle School is primarily via Louisiana Street. Louisiana Street runs north to south, parallel to the eastern boundary of the Base. Louisiana Street can be accessed by the main gate via Steen Boulevard. J Street runs north-south along the western boundary of the ROI. Locked and barred gates allow restricted access to both Carl Ben Eielson School and the existing Nathan Twining Elementary and Middle School from 25th Street Northeast.

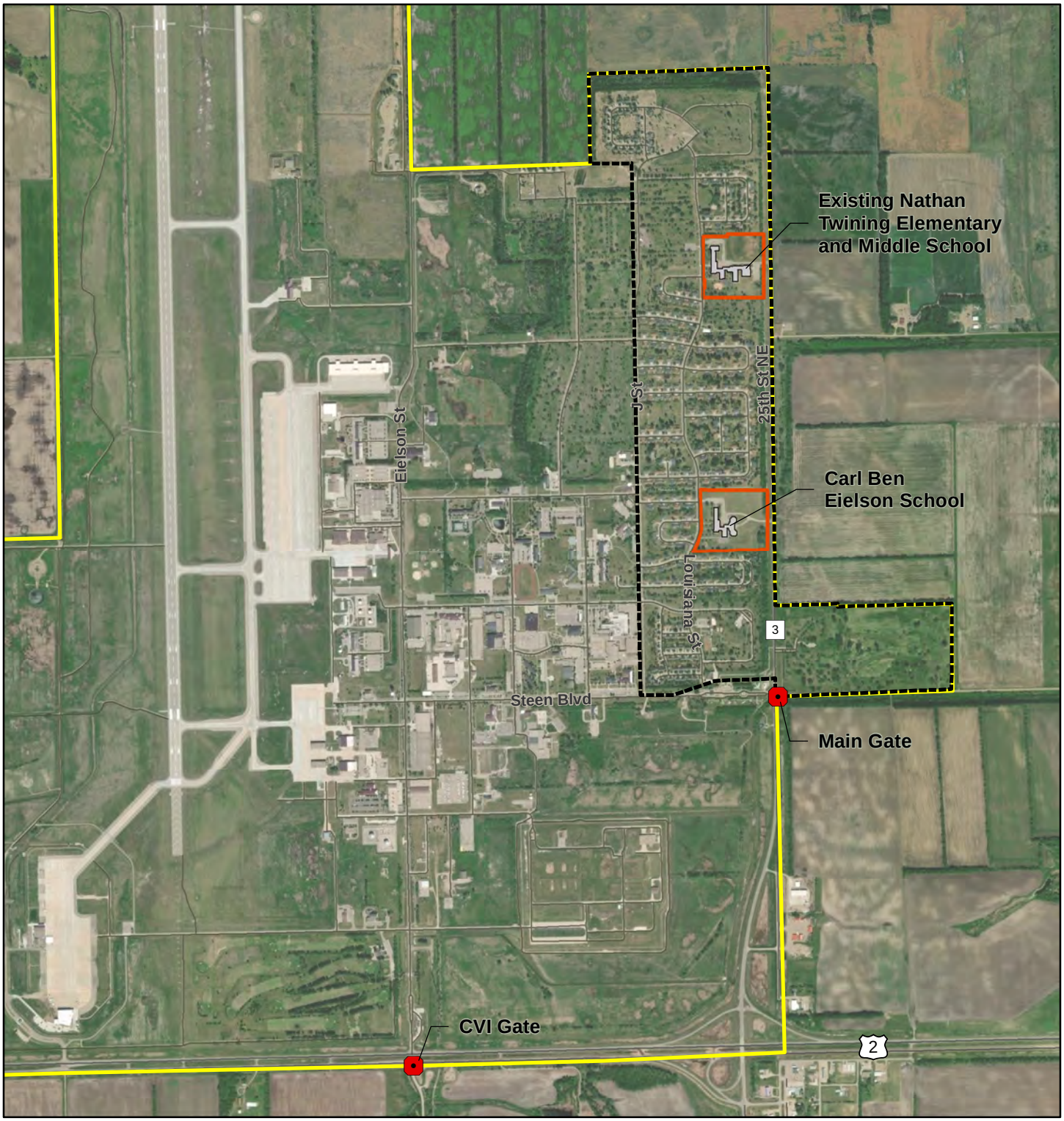
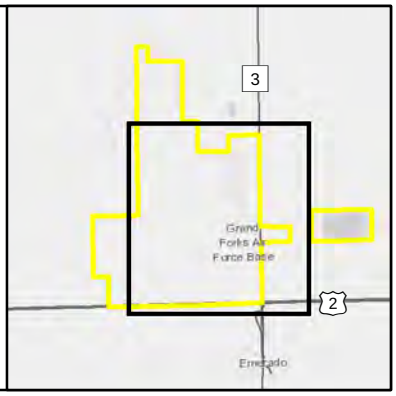


FIGURE 3-6
Infrastructure

ACP
ROI
Installation Boundary
Project Site
Current School Building

N
0 0.5 Miles

Imagery: Maxar 2021, 2022
Coordinate System: WGS 1984 UTM Zone 14N



ACP = Access Control Point; CVI = Commercial Vehicle Inspection; ROI = Region of Influence

3.12.2.2 Communications

The communications system on GFAFB consists of fiber-optic cables that run between buildings and twisted-pair copper cables for in-building conductivity. Manhole and conduit systems provide communications support to the Base through buried communication infrastructure. Service and infrastructure are available to support a range of communications requirements such as voice, data, video, wireless, land mobile radio, aircraft, and security systems (GFAFB, 2017). Carl Ben Eielson School has been decommissioned since 2014 and does not actively utilize the Base's communications systems. Both Carl Ben Eielson School and the existing Nathan Twining Elementary and Middle School have an intercom and a security system (GFAFBPSD, 2018a, 2018b). The existing Nathan Twining Elementary and Middle School actively uses GFAFB's communications systems.

3.12.2.3 Electricity and Natural Gas

Electricity at GFAFB is provided by Minnkota Power Cooperative, Inc. and distributed by Nodak Electric Cooperative, with an annual capacity of 138 kilovolts (kV) and a high daily demand of 55.2 kV. Power is supplied to the Base from the Emerado Switching Station, with one feeder carrying energy to the Steen Substation and one feeder carrying energy to the Eielson Substation. Electricity is supplied to the Base by the Steen Substation while electricity to the ROI is supplied by the Eielson Substation. Most of the electrical system on the Base consists of underground lines, and emergency backup generators support mission facilities, utility services, and contingency situations by supplying emergency electrical power to critical facilities on the Base (GFAFB, 2017).

The electrical system at both the existing Nathan Twining Elementary and Middle School and Carl Ben Eielson School is original and has not undergone any major upgrades. As of the 2018 FCAR, the electrical system at Carl Ben Eielson School was scheduled to be disconnected while the electrical system at the existing Nathan Twining Elementary and Middle School remains in active use (GFAFBPSD, 2018a, 2018b).

Xcel Energy, an electric and natural gas company that operates in several states across the US, supplies natural gas to GFAFB. The Base is served by a 12-inch-diameter gas main that delivers natural gas to the metering station (Building 163) near the main gate, where an 8-inch line then distributes it from the main metering station to the rest of the Base. All plumbing infrastructure for natural gas at both the existing Nathan Twining Elementary and Middle School and Carl Ben Eielson School is original and has not undergone any major upgrades. Heating facilities on the Base largely use natural gas, and the natural gas system has the capacity to support future Base expansion (GFAFBPSD, 2018a, 2018b; GFAFB, 2024a).

Overall, the electrical distribution and natural gas systems have adequate capacity for the current mission with room for mission growth (GFAFB, 2017, 2024).

3.12.2.4 Potable Water Supply

Potable water at GFAFB is purchased from the City of Grand Forks, which draws water from the Red River and Red Lake River east of GFAFB. There are two water mains that serve the Base: a 14-inch main from the City of Grand Forks and an 8-inch main from the East Central Regional Water District. Four elevated storage tanks provide a capacity of 1.9 million gallons of water for the Base (GFAFB, 2019). These elevated storage tanks maintain adequate water pressure throughout GFAFB. Water demands average approximately 189,500 gallons per day, with a peak demand of approximately 1.4 million gallons per day. The average demand accounts for only 10 percent of the capacity, while 74.2 percent of the capacity is used during peak demand periods.

The water distribution system is maintained by Base Utilities Inc., and recent water quality monitoring performed in compliance with state and federal requirements indicates no violations or exceedances of drinking water quality standards (GFAFB, 2019). The water distribution system for GFAFB was initially built in 1956 and the original cast iron piping has since been replaced. Most of the distribution lines that make up the Base system are constructed of polyvinyl chloride piping, and the system is in adequate condition. All plumbing fixtures and piping within Carl Ben Eielson School and the existing Nathan Twining Elementary and Middle School are original to building construction (GFSD 2018a, 2018b).

3.12.2.5 Sanitary Sewage

The sewage system at GFAFB is designed to feed sewage treatment lagoons via a system of gravity and force mains using two primary lift stations; both lift stations support the ROI. One lift station, Facility 1336, is in the north-central portion of the Base and primarily serves the accompanied housing area, the existing Nathan Twining Elementary and Middle School, and the northern section of the flightline. The other lift station, Facility 801, is in the south-central portion of the Base and serves a portion of the accompanied housing area and the closed Carl Ben Eielson School. The sewage treatment lagoons are operated by GFAFB and are located less than 1 mile east of the ROI (see **Figure 3-1**) (GFAFB, 2017). The treatment lagoons consist of four treatment cells: one primary cell, two secondary cells, and one tertiary cell. Treated wastewater is discharged from the lagoons under State of North Dakota Wastewater Discharge Permit ND0020621 and flows into the South Drainage Ditch, which empties into Kellys Slough NWR (GFAFB, 2020b). Wastewater discharge into Kellys Slough has not been necessary in recent years due to the reduced population on the Base and rehabilitation projects occurring at the sewage treatment lagoons.

The sewer collection, treatment, and wastewater discharge systems on GFAFB are in great condition; the two force mains are new and constructed with polyvinyl chloride piping. The Base-wide collection system includes 328,042 linear feet of sewer mains that range in size from 6 to 15 inches in diameter and are maintained and updated proactively. The sewer collection, treatment, and wastewater discharge system is designed for a baseline population of 10,000 people and operates at about 50-percent capacity (GFAFB 2017, 2024). Any changes to the sanitary sewer lines must be approved by the NDDEQ prior to construction.

3.12.2.6 Solid Waste Management

GFAFB operates an integrated solid waste management program that includes residential, commercial, and industrial nonhazardous waste and special waste stream recycling and disposal. The GFAFB *Integrated Solid Waste Management Plan* (ISWMP) guides decision-makers in developing and maintaining a long-term, sustainable solid waste program (GFAFB, 2020b).

The ISWMP provides guidance for solid waste management and pollution prevention that meets waste management requirements specified in EOs and by the DAF, DoD, and NDDEQ. Carl Ben Eielson School has been decommissioned since 2014 and does not utilize solid waste management systems. The existing Nathan Twining Elementary and Middle School, which is maintained by GFAFBPSD, must properly manage all waste in accordance with GFAFB policies to ensure a healthy and safe working environment, minimize environmental impacts, ensure regulatory compliance, and ultimately sustain the GFAFB mission. The NDDEQ Waste Management Division works with owners and operators of land disposal facilities to ensure that all regulated solid waste activities in North Dakota are conducted in compliance with North Dakota's solid waste management rules. The NDDEQ requires that all land disposal activities are protective of public health and preserve water resources while promoting resource recovery. The NDDEQ regulates the disposal of solid waste such as municipal garbage, tires, yard waste, construction and demolition debris, contaminated soil, and sludge. The NDDEQ also issues solid waste disposal permits, reviews and approves plans and specifications, performs inspections of disposal sites, and investigates complaints pertaining to the improper disposal of solid waste.

GFAFB and its GFSD-leased property does not generate waste that meets the definition of industrial solid waste, nor does it have an active on-site landfill. Municipal waste is disposed of through a contract with the Grand Forks Municipal Landfill (Permit No. 0347). Located approximately 12 miles from the Base, the landfill receives municipal solid waste that is collected and transported under contract by Waste Management (GFAFB, 2020b).

3.12.3 Environmental Consequences

3.12.3.1 Evaluation Criteria

Adverse impacts to or from infrastructure, transportation, and utilities would occur if the Proposed Action results in:

- measurable change or service reduction within the regional transportation network;
- prolonged or repeated interruption of public transportation services regionally;
- prolonged or repeated service disruptions to utility end users; or
- substantial increase in utility demand relative to existing and planned regional uses.

3.12.3.2 Proposed Action

Transportation

Implementation of the Proposed Action would result in temporary and localized impacts to existing roadways and vehicle circulation on the Base. The construction and demolition activities would take place on the east side of the Base within approximately 1 mile or less from the main access gate and slightly less than 3 miles from the CVI gate. During construction and demolition activities, the project site would be fully fenced and direct access to the site would be provided from 25th Street Northeast resulting in reduced impacts to transportation throughout other portions of the Base, including the main gate. Increases in truck traffic and traffic from construction workers commuting to the ROI during periods of construction and demolition activities would be expected to cause temporary increases in demand and increased congestion on local roads adjacent to GFAFB. During demolition and construction, temporary lane closures and increased vehicle congestion would be expected. When compared to daily traffic arriving and departing from GFAFB, this increase would be negligible. The Base transportation system and adjacent local roads are adequate, have the capacity to handle an increase in vehicular traffic, and meet current and future mission needs (GFAFB, 2024a).

In the long term, the location of the new Nathan Twining School at the site of the existing Carl Ben Eielson School building would result in improvements to the overall transportation network within GFAFB. Under the Proposed Action, the new Nathan Twining School would be closer to the main gate, reducing the amount of daily traffic and congestion in the northern portions of the Base. Therefore, short-term, negligible, adverse impacts, and long-term, minor, beneficial impacts to transportation in the ROI would be anticipated to occur under the Proposed Action.

Communications

Under the Proposed Action, the new Nathan Twining School would be connected to the existing communications systems at GFAFB, which has the capacity to the support the new school (GFAFB, 2024a). Once the new Nathan Twining School is operational, the existing Nathan Twining Elementary and Middle School would be decommissioned, resulting in no substantial increase to the communication system demands at GFAFB. During construction and demolition activities, there would be the potential for temporary service interruptions to occur during disconnection of systems prior to demolition and when connections are made to the new Nathan Twining School. Therefore, short-term, negligible, adverse impacts to the Base communications systems in the ROI would be anticipated to occur under the Proposed Action.

Electricity and Natural Gas

Under the Proposed Action, the new Nathan Twining School would be connected to the existing electrical system at GFAFB, which has the capacity to support the new school (GFAFB, 2024a). The new Nathan Twining School would be fully electric with no natural gas service. Once the new Nathan Twining School is operational, the existing Nathan Twining Elementary and Middle School would be disconnected from the energy systems, resulting in no substantial net increase to the demand on the electricity system on the Base and a negligible net decrease to the demand of the natural gas system on the Base. During

construction and demolition activities, there would be the potential for temporary service interruptions to occur within the ROI during disconnection of systems prior to demolition and when connections are made to the new Nathan Twining School. Therefore, short-term, negligible, adverse impacts to the Base electricity and natural gas systems in the ROI would be anticipated to occur under the Proposed Action.

Potable Water Supply

Under the Proposed Action, the new Nathan Twining School would be connected to the existing GFAFB potable water supply, which has the capacity to support the new school (GFAFB, 2024a). Once the new Nathan Twining School is operational, the existing Nathan Twining Elementary and Middle School would be decommissioned, resulting in no substantial net increase to the demand on GFAFB's potable water supply. During construction and demolition activities, there would be the potential for temporary service interruptions to occur within the ROI during disconnection of systems prior to demolition and when connections are made to the new Nathan Twining School. Therefore, short-term, negligible, adverse impacts to the potable water supply in the ROI would be anticipated to occur under the Proposed Action.

Sanitary Sewage

Under the Proposed Action, the new Nathan Twining School would be connected to the existing GFAFB sewage system, which has the capacity to support the new school (GFAFB, 2024a). Once the new Nathan Twining School is operational, the existing Nathan Twining Elementary and Middle School would be decommissioned, resulting in no substantial increase to the sanitary sewer system demands at GFAFB. During construction and demolition activities, there would be the potential for temporary service interruptions to occur within the ROI during disconnection of systems prior to demolition and when connections are made to the new Nathan Twining School. Therefore, short-term, negligible, adverse impacts to the GFAFB sewage system in the ROI would be anticipated to occur under the Proposed Action.

Solid Waste Management

Under the Proposed Action, there would be approximately 100,000 ft^2 of new construction and 178,698 ft^2 of demolition, which would result in an increase of solid waste. This increase in waste could result in short-term, minor, adverse impacts to solid waste management at GFAFB. The USEPA guidance on estimating solid waste from construction and demolition projects indicates that approximately 4.39 pounds per ft^2 of debris would be generated for each square foot of construction and/or demolition activity (USEPA, 2003). Using this formula, solid waste generated from all construction and demolition under the Proposed Action would be anticipated to result in approximately 611 tons of debris. However, the increase in solid waste generation would be limited to the timeframe of the proposed construction and demolition activities associated with the Proposed Action, which would be anticipated to occur over a course of several years. Contractors would be required to comply with federal, state, and local regulations for the collection and disposal of solid waste generated under the Proposed Action, and all solid waste generated would be collected and transported off site for disposal or recycling in accordance with AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*. The City of Grand Forks Municipal Landfill is estimated to be open until 2093 and would be expected to have sufficient capacity to support construction and demolition-related waste (USEPA, 2023). The GFAFB ISWMP and NDDEQ solid waste regulations would guide efforts to reduce, reuse and/or recycle waste materials during implementation of the Proposed Action. Therefore, short-term, minor, adverse impacts to the GFAFB solid waste management in the ROI would be anticipated to occur under the Proposed Action.

3.12.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under unsafe and unsuitable conditions for students and staff. There would be no change to overall infrastructure, transportation, and utilities beyond baseline conditions.

3.12.3.4 Cumulative Effects

Implementation of the Proposed Action at GFAFB would not result in any significant impact to Base infrastructure. Any construction- and demolition-related impacts to the transportation system of the Base infrastructure would result in short-term traffic issues including possible lane closures and increased congestion near the project sites where construction and demolition activities would occur. Utility systems on the Base including communications, electricity, natural gas, potable water, and sewage would not be impacted by the Proposed Action other than through possible temporary service interruptions during disconnection of the various utilities prior to demolition and when utility connections are made to the new Nathan Twining School; the net increase in demand would be minimal, and GFAFB has sufficient capacity for all systems. Solid waste management would not be impacted by the Proposed Action, as the Grand Forks Municipal Landfill would be expected to have sufficient capacity to accept solid waste generated from the proposed construction and demolition activities.

Of the projects listed in **Table 3-1**, the IDP projects and the GrandSKY Business Park EA would result in long-term impacts to infrastructure, transportation, and utility systems at GFAFB. However, GFAFB has sufficient capacity to support the increased demands. Further, the GrandSKY Business Park development is set to occur over approximately 10 years, allowing for a gradual increase in demand for utilities and infrastructure. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to infrastructure, including transportation and utility systems, would be anticipated to occur with implementation of the Proposed Action.

3.13 NOISE

3.13.1 Definition of the Resource

Sound is a physical phenomenon consisting of minute vibrations exhibited as waves, measured in frequency and amplitude, which travel through a medium, such as air or water, and are sensed by the human ear. Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects (e.g., hearing loss or damage to structures) or subjective judgments (e.g., an individual's level of tolerance or annoyance to different sounds). Noise analysis thus requires assessing a combination of physical measurement of sound, physical and physiological effects, and psycho- and socio-acoustic effects. The response of different individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual. Noise may also affect wildlife through disruption of nesting, foraging, migration, and other life-cycle activities.

Noise and sound levels are expressed in logarithmic units measured by dB. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech equates to a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort, and sound levels between 130 and 140 dB are felt as pain (Berglund and Lindvall, 1995).

All sound contains a spectral content, which means the magnitude or level differs by frequency, where frequency is measured in cycles per second, or hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements usually employ an "A-weighted" scale, denoted as A-weighted decibels (dBA), that de-emphasizes very low and very high frequencies to better replicate human sensitivity.

In accordance with DoD guidelines and standard practice for environmental impact analysis documents, the noise analysis herein uses the Day-Night Average Sound Level (DNL), and the Onset-Rate Adjusted DNL. DNL is a cumulative measure of multiple flight and engine maintenance activities throughout an average year.

The ROI for noise is a 1-mile area around the project sites.

3.13.2 Affected Environment

The primary sources of noise on GFAFB are airfield operations, industrial activities, and vehicular traffic. Within the ROI, noise-sensitive, on-Base receptors include the existing Nathan Twining Elementary and Middle School, a youth center, Sunflower Chapel, the child development center, the library, GFAFB dormitories, a parent/child center, and the residences within the GFAFB Accompanied Housing District. The ROI is largely outside of the noise contours for the airfield, with only a small portion extending into a 65-dB contour associated with the GFAFB airfield (**Figure 3-7**). The project sites are located within the Accompanied Housing District, which is a residential area of single-family homes and townhouses. Off-Base noise-sensitive receptors located within 1 mile of the project area include one residence.

3.13.3 Environmental Consequences

3.13.3.1 Evaluation Criteria

When evaluating noise effects, several aspects are examined:

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

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

3.13.3.2 Proposed Action

Under the Proposed Action, all project activities would occur entirely within GFAFB property. The Proposed Action would cause short-term, intermittent, localized noise impacts during construction and demolition activities. Sound would be generated from the operation of construction and demolition equipment and from associated traffic. However, the equipment would be operated intermittently during construction and demolition, and potential noise impacts would be short term and limited to daylight hours during the construction/demolition period; no construction or demolition activities would take place between 10 p.m. and 7 a.m. The loudest machinery typically used for construction and demolition activities produce peak sound pressure levels ranging from 86 to 95 dBA at a 50-foot distance from the source (**Table 3-7**).

Sound levels typically lessen by approximately 6 dBA per every doubling of the distance from the sound source. The presence of existing buildings also help reduce sound levels. At a distance of 1,600 ft, the sound generated from construction and demolition equipment would be less than 67 dBA as recommended by the US Department of Transportation (2006). The existing Nathan Twining Elementary and Middle School is located approximately 2,000 ft from the proposed demolition and construction activity that would be occurring at the Carl Ben Eielson School project site. At that distance, construction and demolition noise would not be anticipated to disrupt ongoing operations or the learning environment at the existing Nathan Twining Elementary and Middle School. The existing Nathan Twining Elementary and Middle School would be demolished after the transfer of the student population to the new Nathan Twining School, and demolition activities would occur at a distance of approximately 2,000 ft from the newly constructed school building. Further, the new Nathan Twining School would be located outside of the 65-dB noise contours associated with the airfield (see **Figure 3-7**) and would not be impacted by airfield noise.

Adherence to standard DAF Occupational Safety and Health regulations that require hearing protection along with other personnel protective equipment and safety training would minimize the risk of hearing loss to construction workers. Therefore, short-term, minor, adverse impacts to noise-sensitive receptors from construction and demolition activities in the ROI would be anticipated to occur under the Proposed Action.

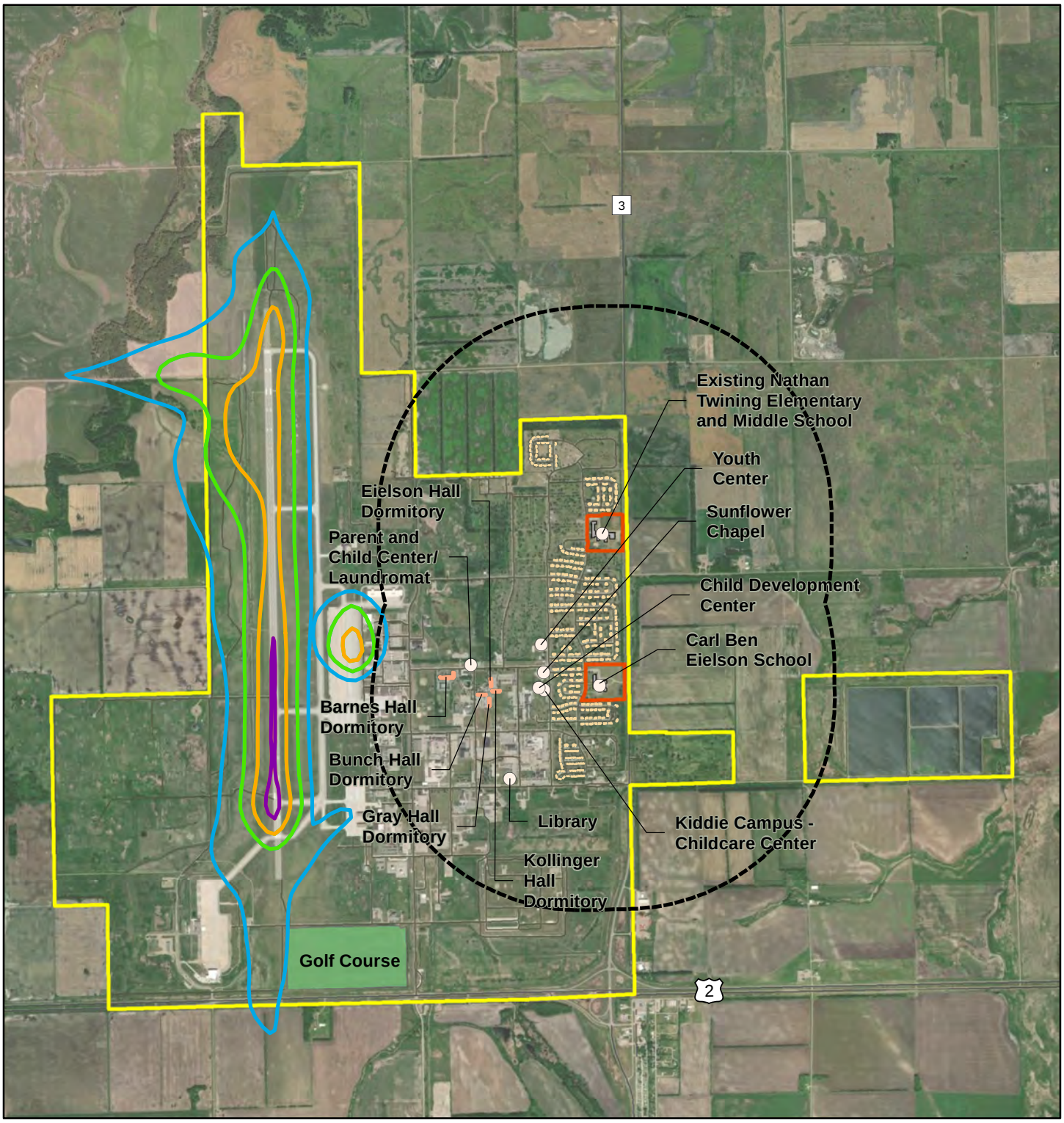


FIGURE 3-7
Noise

Baseline Noise Contours DNL (dBA)
- 65 db
- 70 db
- 75 db
- 80 db

- Noise Sensitive Receptor
- ROI
- Installation Boundary
- Project Site
- Current School Buildings
- Dormitory Building
- Recreation Area
- Residential Dwelling

N

0 1 Mile

Imagery: Maxar 2020, 2021
Coordinate System: WGS 1984 UTM Zone 14N

dBA = A-Weighted Decibel; DNL = Day Night Average Sound Level; ROI = Region of Influence

Table 3-7
Sound Levels of Construction Equipment under the Proposed Action from a Distance of 50 Feet

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

Source: US Department of Transportation, 2006
dBA = A-weighted decibel

3.13.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under unsafe and unsuitable conditions for students and staff. There would be no change to the overall noise environment beyond baseline conditions.

3.13.3.4 Cumulative Effects

Project activities associated with the Proposed Action would result in temporary, localized noise increases. Noise could be compounded by other construction projects identified in **Table 3-1** that would occur concurrently. All development would be implemented near areas already subject to a high level of noise from aircraft operations, which is the primary source of noise on GFAFB. In order to minimize disturbance to local residences, workplaces, and sensitive receptors, noise reduction measures would be implemented. No construction or demolition activities would take place between 10 p.m. and 7 a.m. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to the noise environment would be anticipated with implementation of the Proposed Action.

3.14 SOCIOECONOMICS

3.14.1 Definition of the Resource

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

The ROI for socioeconomics is Grand Forks County.

3.14.2 Affected Environment

3.14.2.1 Population

No components of the Proposed Action would lead to a change in population in the ROI. Therefore, population is not carried forward for analysis in this EA.

3.14.2.2 Employment

The 2023 estimated unemployment rate in Grand Forks County was 2.7 percent, reflective of the state unemployment rate of 2.8 percent. Both unemployment rates were lower than the national rate of 5.2 percent. In the ROI, approximately 71.1 percent of the total population 16 years and older was part of the labor force. Active-duty members of the US Armed Forces made up approximately 3.4 percent of the population in the labor force, while civilians (i.e., anyone not on active duty in the US Armed Forces) made up the other 96.6 percent. In North Dakota and the US, the labor force distribution was approximately 1.7 percent active-duty US Armed Forces and 98.3 civilian, and 0.8 percent active-duty US Armed Forces and 99.2 percent civilian, respectively (USCB, 2023b). The top three industries by percentage of employment (percent of employed civilian population 16 years and over) in the ROI, North Dakota, and the US are summarized in **Table 3-8**.

Table 3-8
Top Three Industries by Location

Location	Industry 1	Industry 2	Industry 3
United States	Educational services, healthcare, social assistance	Professional, scientific, and management; and administrative and waste management services	Retail trade
North Dakota	Educational services, healthcare, and social assistance	Retail trade	Agriculture, forestry, fishing and hunting; and mining
Grand Forks County	Educational services, healthcare, social assistance	Retail trade	Arts, entertainment, and recreation; and accommodation and food services

Source: USCB, 2023b

As can be seen in the table, the top industry by employment in the ROI as well as in the state and nation was the educational services, healthcare, and social assistance industry (USCB, 2023b). Leading employers in the ROI include the University of North Dakota, Altru Health System, and GFPS (Grand Forks Region Economic Development Corporation, 2024).

3.14.2.3 Housing

Selected housing characteristics for 2023 in the ROI, North Dakota, and the US are presented in **Table 3-9.** The ROI reported a rental vacancy rate of 7.1 percent, which was lower than the state rate, but higher than the national rate. The homeowner vacancy rate in the ROI was 0.8, which was lower than both the state and national rates (USCB, 2023c). The rental and homeowner vacancy rates in Grand Forks County indicate that there are housing units available for rent to support some population growth.

Table 3-9
Housing Characteristics

Location	Total Units	% Occupied	Homeowner Vacancy Rate	Rental Vacancy Rate
United States	142,332,876	89.6	1	5.5
North Dakota	374,866	86.7	1.5	9.3
Grand Forks County	33,736	92	0.8	7.1

Source: USCB, 2023c

Housing resources on GFAFB, including accompanied housing and dormitories, are rated as adequate, meaning that they are meeting current mission(s) requirements (GFAFB, 2024a). However, new and emerging mission objectives at GFAFB have prompted discussions related to the need for increased on-

Base housing. Currently, 145 GFAFB-affiliated school-aged (kindergarten through grade 8) dependents of members of the US Armed Forces stationed at GFAFB reside in the City of Grand Forks rather than on Base due to the limited available Base housing. The GFAFB IDP lists goals and objectives for developing new accompanied and unaccompanied housing in the future to meet Base housing demands (GFAFB, 2024a).

As described in **Section 3.14.2.1,** implementation of the Proposed Action would not result in any change to populations in the ROI and would not result in any impacts to housing within the ROI. Therefore, housing is not carried forward for analysis in this EA.

3.14.2.4 Education

Although the state of North Dakota has an open enrollment law that permits students to attend schools outside of the school district in which they live, GFAFBPSD serves the needs of the families of GFAFB, and focuses on military families and family members of school personnel who would like to have their children attend the school where they serve. GFAFBPSD also serves the needs of civilian and AFB contractors who come to GFAFB for work each day and would like to have their children enrolled in a school nearby (Insight to Solutions, 2025). Therefore, students that reside off Base and attend school in other districts who are not affiliated with GFAFB are not included in the analysis of potential effects from implementation of the Proposed Action as they are not the target demographic that GFAFBPSD aims to serve.

There are eight regular[3] local public school districts in the ROI, including GFSD #1 and the GFAFBPSD. GFSD #1 operates 18 schools and had an enrollment of approximately 7,572 students during the 2023/2024 school year. The GFAFBPSD oversees operations of the existing Nathan Twining Elementary and Middle School on the Base, which has provided education for students in kindergarten through grade 8 since the closure of Carl Ben Eielson School at the end of the 2013/2014 school year. The existing Nathan Twining Elementary and Middle School reported an enrollment of 294 students as of the beginning of the 2023/2024 school year, including 11 students that are enrolled in Early Childhood Special Education. There are approximately 145 GFAFB-affiliated school-aged (kindergarten through grade 8) dependents that reside in the city of Grand Forks with their families due to the limited availability of on-Base housing. These school-aged dependents could apply for in-district transfers to go to school in GFAFBPSD and could attend the existing Nathan Twining Elementary and Middle School if their transfers were approved (Insight to Solutions, 2025). The 30 homeschooled students that live on GFAFB may enroll full-time or part-time at the Base public school in the future as well. The existing Nathan Twining Elementary and Middle School does not have the functional capacity to support increased enrollment.

North Dakota continues to promote and incentivize pre-kindergarten programs. GFSD has stated an intention to begin offering pre-kindergarten services and currently operates a Head Start program in other GFSD schools. As it stands, these services are available in other districts within a 20-mile radius of the Base, and it would be opportune for GFAFBPSD to able to offer pre-kindergarten services at the public school on GFAFB (GFAFBPSD, 2024b). The existing Nathan Twining Elementary and Middle School does not have adequate space to support a pre-kindergarten program.

The 2018 FCAR for the existing Nathan Twining Elementary and Middle School included summaries of the findings of functional adequacy and physical condition assessments. The functional adequacy assessment examined both the spatial adequacy and capacity of the school building. The capacity was calculated to be approximately 749 students, but the results of the spatial adequacy analysis determined that the building was not structured in a way that made full utilization of the calculated capacity possible. Per DoD Education Facilities Specifications standard, the existing Nathan Twining Elementary and Middle School building had an inadequate amount of space dedicated to special needs education, food service, and the art room and only provided a marginally acceptable amount of space for the general music room, chemistry science classroom, and computer lab (**Table 3-10**) (GFAFBPSD, 2018b).

[3] A regular local public-school district is locally governed and provides free public elementary or second education. A regular local public-school district includes independent and government dependent (such as a city or county) school districts (National Center for Education Statistics, 2025).

Table 3-10
Facility Condition Assessment Report Spatial Adequacy Results

Space Type	Actual Provided (avg. ft^2)	DoDEA Ed Spec (ft^2)
Special Needs	921	1,600
Food Service	778	1,938
Art Room (All)	910	1,650
General Music Room	1,043	1,500
Science Classroom (Chemistry)	884	1,440
Computer Lab	914	1,300

Source: GFSDB, 2018b
DoDEA = DoD Education Activity; Ed Spec = Education Facilities Specification

The physical condition assessment of the existing Nathan Twining Elementary and Middle School showed that multiple building systems had passed beyond their useful service life and needed immediate replacement, and that several more would exceed their useful service life and need replacement by fiscal year 2023. These systems included, but were not limited to, roof coverings; heating, ventilation, and air conditioning equipment; heating, ventilation, and air conditioning distribution; plumbing fixtures; and floor, wall, and ceiling finishes. The boilers were reported to be unable to keep up with heat demand during extreme cold, and the roof over the large gymnasium in the main school building was found to be leaking (GFAFBPSD, 2018b).

3.14.3 Environmental Consequences

3.14.3.1 Evaluation Criteria

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

3.14.3.2 Proposed Action

Employment

With implementation of the Proposed Action, construction activities associated with the building of the new Nathan Twining School, demolition of the Carl Ben Eielson School, and eventual demolition of the existing Nathan Twining Elementary and Middle School would create a temporary need for local construction and demolition personnel. Therefore, short-term, minor, beneficial impacts to construction-related employment opportunities in the ROI would be anticipated to occur under the Proposed Action.

The increased school capacity and projected rise in enrollment would have the potential to lead to the creation of additional employment opportunities for management, teaching, and facilities maintenance staff at the new Nathan Twining School. Therefore, long-term, minor, beneficial impacts of education/facilities-related employment opportunities in the ROI would be anticipated to occur under the Proposed Action.

Education

With implementation of the Proposed Action, construction of the new Nathan Twining School would provide a GFAFBPSD education facility in the ROI with increased capacity, adequately sized spaces, and improved physical condition. School conditions such as indoor air quality and temperature can have direct impacts

on student academic performance (Eitland & Allen, 2019). Because of this, improved physical building conditions and functional building systems in the new Nathan Twining School would have the potential to result in moderate, long-term, beneficial impacts. The design of the new Nathan Twining School would also remedy the spatial inadequacies found in the existing Nathan Twining Elementary and Middle School building by meeting or exceeding the DoD Education Facilities Specifications standards for the spaces listed in **Table 3-10**.

The new Nathan Twining School would have the capacity for up to 500 students and would be designed and built in such a way that the full capacity could be utilized. This would allow for the GFAFBPSD to accommodate future anticipated enrollment increases and would create more opportunities for eligible students to enroll at the Base school. Further, the currently homeschooled students who live on Base and dependents of members of the US Armed Forces stationed at GFAFB who are currently living off Base and attending GFSD #1 schools would have the opportunity to enroll at the new Nathan Twining School. If those students were able to switch to the new Nathan Twining School, that would open up space and resources at GFSD #1 schools for non-federally connected students. The increased capacity in the new Nathan Twining School would also support GFAFBPSD's goal of providing facilities that can accommodate an increasing number of students beyond that which existing facilities can manage. Further, the increase in functional space in the new school building would provide the opportunity for pre-kindergarten services to be provided in GFAFBPSD.

Overall, long-term, moderate, beneficial impacts to educational resources in the ROI would be anticipated to occur under the Proposed Action.

3.14.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under unsafe and unsuitable conditions for students and staff.

The No Action Alternative would leave Nathan Twining Elementary and Middle School with enrollment demand beyond its capacity and would not support GFAFBPSD's projected growth over the next 30 years. The 30 homeschooled students on the Base and the additional 145 kindergarten through grade 8 students that reside off Base and attend GFSD #1 schools would not have the opportunity to attend a school on GFAFB, and GFAFBPSD would not be able to begin offering pre-kindergarten services. Further, the No Action Alternative would not utilize funding available through Section 8108 of the *Consolidated Appropriations Act of 2023* (Public Law 117-328).

The No Action Alternative would have the potential to result in long-term, moderate, adverse impacts to DoD Education Activity (DoDEA) resources in the ROI due to the sub-par physical conditions of the existing Nathan Twining Elementary and Middle School, which could negatively affect the academic performance of enrolled students over time. The No Action Alternative would also have the potential to result in long-term, minor, adverse impacts on DoDEA resources in the ROI due to the inability of the GFAFBPSD to operate the existing Nathan Twining Elementary and Middle School at its full capacity. This capacity issue would prevent GFAFBPSD from being able to properly accommodate any increased enrollment associated with the school district's projected growth over the next three decades and would put additional strain on the existing but functionally inadequate DoDEA facility in the ROI. There would be no impacts to general education resources in the ROI beyond baseline conditions.

3.14.3.4 Cumulative Effects

The Proposed Action at GFAFB would result in beneficial impacts to DoDEA resources in the ROI by increasing the capacity, creating opportunities for expanded education programs and services, and improving the physical conditions and spatial functionality of the DoDEA facility available to students. The Proposed Action could also have the potential to result in beneficial impacts to non-DoD education resources in the ROI by leading to the availability of more space and resources for non-federally connected students wishing to attend GFSD #1 schools in the future. Of the projects identified in **Table 3-1**, GrandSKY

Business Park would result in direct, beneficial cumulative effects by increasing employment opportunities at GFAFB. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, direct beneficial cumulative effects to socioeconomics would be anticipated to occur with implementation of the Proposed Action.

3.15 PROTECTION OF CHILDREN

3.15.1 Definition of the Resource

Federal agencies are directed by EOs to address disproportionate risks to children that result from environmental health risks and safety risks. Children are vulnerable to environmental exposure, and potential health and safety impacts to children are considered in accordance with EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

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

For the purposes of this analysis, the term "children" is defined as any persons under the age of 18. In this EA, the terms "children" and "youth population(s)" are used interchangeably to refer to this demographic.

The ROI for the protection of children is GFAFB.

3.15.2 Affected Environment

3.15.2.1 Youth Population

The percentage of the population under 18 years of age in 2023 in the ROI was estimated to be 21.2 percent, a similar proportion to the population of children state- and nationwide (23.7 percent and 22.2 percent, respectively) (USCB, 2023a). Although the percentage of youth population in the ROI is not notably larger than in the state or nation, the Proposed Action centers on an elementary and middle school, a facility intended for and primarily used by children. This creates the potential for a disproportionate risk to youth populations. Children with the potential to be at risk from environmental health risks and safety risks related to the Proposed Action would be limited to those that reside on and/or already attend or are permitted to attend a DoDEA school under Department of Defense Education Activity Administrative Instruction 1344.01 Section 4. Non-federally connected students that attend school in other districts are not eligible for enrollment in DoDEA schools are not included in the analysis of potential effects from implementation of the Proposed Action.

3.15.2.2 Environmental Health Risks and Safety Risks

EO 13045 defines "environmental health risks and safety risks'' to mean "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)." Children may be more vulnerable than adults to the adverse effects of environmental contaminants in air, food, drinking water, and other sources because their bodies are still developing. In addition, children have increased potential for exposure to pollutants because they eat, drink, and breathe more, in proportion to the size of their bodies, than adults (Federal Interagency Forum on Child and Family Statistics, 2023).

GFAFB is located in an AQCR that is in attainment/unclassifiable for all criteria air pollutants (see **Section 3.6.2**) and the highest annual emission rate from construction activities associated with the Proposed Action would be below the insignificance indicator value (see **Section 3.6.3.3**).

The 2024 GFPS AHERA report identified ACM at the existing Nathan Twining Elementary and Middle School (GFPS, 2024a). The presence of and potential for exposure to asbestos in the existing Nathan Twining Elementary and Middle School building is a primary environmental health risk and safety risk to children. A substantial amount of ACM is present in floor tiles and mastic (adhesive used for flooring) and

was also identified in plaster ceilings; floor and wall finishes are both components of expired building systems in the existing school building (see **Section 3.11.3.2, Asbestos**) (GFAFBPSD, 2018b). Continued deterioration of these building systems puts students at a continued risk of exposure to asbestos. A comprehensive pre-demolition hazardous material abatement was completed at Carl Ben Eielson School in February 2025 and ACMs have been removed (see **Section 3.11.2.2, Asbestos**) (GFPS, 2024b; Integrity Environmental, 2025). Therefore, ACMs in Carl Ben Eielson School will not be discussed further as an environmental health and safety risk to children in the ROI.

The existing Nathan Twining Elementary and Middle School was built prior to the 1978 ban on LBP; therefore, it is likely that LBP was used in the building (see **Section 3.11.3.2, Lead-Based Paint**). The deteriorated wall finishes within the existing structure puts students at risk of exposure to LBP. The Carl Ben Eielson School was also built prior to the 1978 ban and its continued existence puts children at risk of potential exposure to LBP. No concerns regarding drinking water quality or contaminated groundwater (see **Sections 3.8.2.3, 3.11.2.4, and 3.12.2.4**) have been identified in the ROI and are not considered to be environmental health risks or safety risks to children under the Proposed Action. Neither drinking water nor groundwater will be discussed further.

3.15.3 Environmental Consequences

3.15.3.1 Evaluation Criteria

Disproportionate impacts on children could occur if a proposed action creates environmental health risks or safety risks to the human population that fell disproportionately on youth populations. Environmental health risks or safety risks created by the Proposed Action could disproportionately impact children if the risks:

- predominately burden children, or
- pose a level of risk to children that is appreciably more severe or greater in magnitude than the level of risk posed to non-youth populations.

3.15.3.2 Proposed Action

Under the Proposed Action, Carl Ben Eielson School would be demolished to allow for construction of a new Nathan Twining School. School programming would take place in the new school building. The existing Nathan Twining Elementary and Middle School, where classes would continue to be held until the new facility became operational, is located approximately 2,000 ft from the proposed demolition and construction activity that would be occurring at the Carl Ben Eielson School project site. At that distance, localized air quality impacts from earthwork and equipment emissions that would occur during construction and demolition activities would not be anticipated to disproportionately impact youth populations at the existing Nathan Twining Elementary and Middle School.

Upon the establishment of the new Nathan Twining School, all operations would be transitioned out of the existing Nathan Twining Elementary and Middle School in preparation for its eventual demolition. School programming would take place in the new Nathan Twining School building. Students would no longer be at risk from the environmental health risks and safety risks presented by the potential for exposure to ACM and LBP inside the existing Nathan Twining Elementary and Middle School building. Construction of the new Nathan Twining School would provide DoDEA school-eligible students in the ROI with a safe, updated education facility and would eliminate the environmental health risks and safety risks associated with the existing facility. Therefore, long-term, moderate, beneficial impacts related to protection of children in the ROI would be anticipated to occur under the Proposed Action.

Construction and demolition activities that would take place at the Carl Ben Eielson School project site while students attended classes at the existing Nathan Twining Elementary and Middle School would occur at a great enough distance that they would not be anticipated to disproportionately impact youth populations. Therefore, no disproportionate, adverse impacts to children in the ROI from environmental health risks and safety risks would be anticipated to occur under the Proposed Action.

3.15.3.3 No Action Alternative

Under the No Action Alternative, the status and use of the closed Carl Ben Eielson School and existing Nathan Twining Elementary and Middle School would not change. Carl Ben Eielson School would remain unused, and Nathan Twining Elementary and Middle School would continue to operate under unsafe and unsuitable conditions for students and staff. The existing Nathan Twining Elementary and Middle School building would continue to deteriorate, and the potential for children attending the school to be exposed to ACM and LBP would remain, resulting in continued environmental health risks and safety risks. As a result, the No Action Alternative would be expected to have moderate, long-term, adverse impacts to the protection of DoDEA school-eligible children in the ROI. This adverse impact would be disproportionate, as youth populations would bear the primary burden of the associated environmental health risks and safety risks.

Further, the No Action Alternative would leave Nathan Twining Elementary and Middle School with enrollment demand beyond its capacity and would not support GFAFBPSD's projected growth over the next 30 years. The additional 145 dependents of members of the US Armed Forces stationed at GFAFB in kindergarten through grade 8 that reside in Grand Forks and attend GFSD #1 schools would not have the opportunity to attend school on GFAFB. The No Action Alternative would not utilize funding available through Section 8108 of the *Consolidated Appropriations Act of 2023* (Public Law 117-328).

Cumulative Effects

The Proposed Action at GFAFB would result in beneficial impacts to the protection of DoDEA school-eligible children in the ROI by providing federally connected students with a safe, suitable education facility, removing the environmental health risks and safety risks associated with the existing Nathan Twining Elementary and Middle School. Of the projects listed in **Table 3-1**, none would have an impact on the youth population or environmental health and safety risks related to children. When considered in conjunction with the effects of other past, present, and reasonably foreseeable GFAFBPSD actions at GFAFB, no significant cumulative effects to protection of children would be anticipated to occur with implementation of the Proposed Action.

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Nett Lake, MN 55772

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Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana
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Lame Deer, MT 59043

Frank Star Comes Out, President
Oglala Sioux Tribe
PO Box 2070
107 West Main Street
Pine Ridge, SD 57770

Darrell Seki, Chairman
Red Lake Band of Chippewa Indians, Minnesota
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Red Lake, MN 56671

Kathleen Wooden Knife, President
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Rosebud, SD 57570

Alonzo Denney, Chairman
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108 Spirit Lake Ave W.
Niobrara, NE 68760

Cole W. Miller, Chairperson
Shakopee Mdewakanton Sioux Community of Minnesota
2330 Sioux Trail NW
Prior Lake, MN 55372

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Agency Village, SD 57262-0509

Lonna Jackson-Street, Chairperson
Spirit Lake Tribe, North Dakota
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Jeb Williams, Director
North Dakota Game and Fish Department
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Bismarck, ND 58501

Maria Effertz, Director
North Dakota Department of Commerce Division of Community Services
Century Center, 1600 E Century Ave., Ste 2
PO Box 2057
Bismarck, ND 58502-2507

Deb Thomas, Deputy Regional Administrator
USEPA Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

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Bismarck, ND 58505-0300

Andrew Stahl, State Health Officer
North Dakota Department of Health
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Bismarck, ND 58505-0200

Kevin M. Gietzen, District Conservationist
USDA – Natural Resources Conservation Svc
Natural Resources Conservation Service Grand Forks Service Center
4775 Technology Circle Suite 1B
Grand Forks, ND 58203-5635

U.S. Army Corps of Engineers – North Dakota
Regulatory Office
2219 University Drive
Bismarck, ND 58504

Michael Anderson, Commissioner
North Dakota State Water Commission
City Council Chambers225 N 4th St
Grand Forks, ND 58203

L. David Glatt, Director
North Dakota Department of Environmental Quality
Environmental Health Section
PO Box 55220
Bismarck, ND 58506-5520

Grand Forks School Board
Mark Sanford Education Center, PO Box 6000
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Jessica Johnson,
U.S. Fish and Wildlife – North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501

Luke Toso, North Dakota Deputy
Field Supervisor
U.S. Fish and Wildlife – North Dakota Field Office
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Bismarck, ND 58501

Terry Brenner, Superintendent
Grand Forks Public Schools
2400 47th Ave S
Grand Forks, ND 58201

Cindy Johnson
Grand Forks Public Schools
2400 47th Ave S
Grand Forks, ND 58201

Grand Forks Public Library
2110 Library Circle
Grand Forks, ND 58201

University of North Dakota Legal Library
(Thromodsgard Law Library)
2968 2nd Ave, N Stop 9004
Grand Forks, ND 58202

North Dakota State University Library
1201 Albrecht Boulevard
PO Box 6050
Fargo, ND 58108

Grand Forks Public Schools Advances Twining School Project on Grand Forks Air Force Base, Strengthening Community and Supporting Military Families

Grand Forks Public Schools (GFPS) is excited to share the latest developments in the Nathan F. Twining School project, a significant community-centered initiative to build a new school located on the Grand Forks Air Force Base. The new building will be constructed at 1238 Louisiana Street, the current location of the Carl Ben Eielson School. This building is not presently utilized and is located approximately .75 miles from the current Twining School, the school targeted for replacement. This complex and collaborative effort will be made possible through partnerships with Grand Forks Air Force Base Public School District 140, the Grand Forks Air Force Base (AFB), the Office of Local Defense Community Cooperation's (OLDCC) Public Schools on Military Installations (PSMI) program, and other stakeholders. Anticipated timelines indicate construction beginning in summer 2025 with students placed in this new learning environment in January of 2028.

The new Nathan F. Twining School will be a future-ready learning environment for preK- grade 8, focused on providing military affiliated students with a high quality education through the principles of STEM learning. A design that celebrates the values of our military personnel and provides an enhanced quality of life for our military families. This initiative reflects GFPS's commitment to ensuring that students and families who choose the Grand Forks AFB for its robust support services have access to a premier educational facility that meets their unique needs. As the "Center of the Community," Twining serves as a central gathering place for military families, reflecting the past, present, and future of the Grand Forks AFB. The new facility will build on this legacy while providing state-of-the-art resources to enrich student learning.

The PSMI program will provide 80% of the funding needed upon the acceptance of proposals for a school design and school build, meeting the criteria for a building designed to OLDCC program required specifications of LEED Silver Energy Efficiencies Requirements and NET ZERO specifications, allowing for long term sustainability efforts and future AFB family needs. The 20% match funds required are slated to come from federal impact aid dollars, District 140's only source of revenue. The district is working with state legislators to secure a low interest loan to fund this project with bill drafts in process for the legislative session beginning in January. OLDCC funding through the PSMI program is by invitation only, based upon a school's placement on the Secretary of Defense approved Department of Defense 2018 Public School on Military Installation Prioritized List and the availability of appropriated funding. District 140 was invited to begin the proposal in the spring of 2023. The District is currently in Step 3 of a 4-step process toward completion, with an anticipated invitation to apply for a BUILD grant following a favorable Federal Evaluation Team (FET) Site Visit taking place November 13.

GFPS extends its gratitude to the men and women of the 319 Mission Support Group, the Civil Engineering Squadron and others, whose efforts continue to be invaluable to this project. We also thank the Twining School staff who have provided input and shared insights influencing design, District 140 School Board and AFB leadership, whose consultations on the design and

AF protocols have helped move this project forward and will assure a future facility that meets the highest standards for our military-connected students. Additionally, a heartfelt thank you to our project partners, including the team at JLG, for their commitment to making this vision a reality.

GFPS remains committed to keeping the community informed as we move forward with this ambitious project. With continued support, Twining School will not only be an educational institution but a place of community, strength, and growth for generations to come.

GRAND FORKS PUBLIC SCHOOLS
Growing together to enrich the world.

Dr. Terry Brenner
Superintendent of Schools

Phone: 701.787.4880
Fax: 701.772.7739
tbrenner270@mygfschools.org

MEMORANDUM

TO: Grand Forks Air Force Base School Board Members
FROM: Dr. Terry Brenner, Superintendent of Schools
SUBJECT: Public Schools on Military Installations Grant Opportunity
DATE: April 18, 2023

As indicated in a previous edition of Friday Focus, Grand Forks Public School District #140 has been invited as one of ten school districts to apply for a portion of $650 million related to construction projects at Nathan Twining Elementary & Middle School. This is exciting! With some restrained enthusiasm, there is a 20% match requirement. Today's communication is more of a high-level overview as we will learn more in the near future.

From what we presently understand, there are 157 public schools on military installations across the country. 70 school districts were considered in need of facility attention. Of those 70, personnel from the Office of Local Defense Community Cooperation identified 10 schools for granting consideration.

We were first notified of the opportunity in March with a whirlwind of subsequent meetings scheduled within minutes. District Grant Coordinator Taunya Schleicher, Business Manager Brandon Baumbach, Cindy Johnson, and I have been meeting weekly in preparation for Taunya, School Board President Michelle Sheppard, Col David Castor, and me traveling to Alexandria, VA for a 2-day workshop on May 8-9. Taunya and I will be workshop participants while President Sheppard and Col Castor will serve in the role of observers.

Prior to the May 8-9 workshop, we will put together a comprehensive presentation relative to the facility needs at Twining. This document is due April 28 and we will receive feedback on this work. We have combed through all of the facility assessments completed on Twining to ensure we are looking at the whole facility. Is this a remodel? Is this a completely new construction? With a 20% local match, it may be difficult to build completely new, however, we will look at all funding mechanisms and consider all options before making any final determination.

From:	Janell Regimbal
To:	david.castor@us.af.mil; linman@gra.midco.net; lea.greene@us.af.mil; SCHROEDER, JENNIFER L CIV USAF ACC 319 FSS/FSYC; Laura Vorhies (lvorhies85@gmail.com); Chad Kurtyka; Marge Myrold (mmyrold020@mygfschools.org); Delilah Poole (dpoole010@mygfschools.org); BECKER, CAROLYN J CIV USAF ACC 319 FSS/FSY; Alexis Loomer (aloomer020@mygfschools.org)
Cc:	NEVIUS, KELSEY N MSgt USAF ACC 319 SFS/MSG/CCE
Subject:	Invitation to Open House Workshop related to Twining New School Build
Date:	Thursday, August 10, 2023 2:57:00 PM

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*Join us, as you are able, for an **Open House Workshop** where you can learn more about the upcoming design process for a proposed new Twining K-8 replacement school, participate in hands-on activities, and share your ideas for the future of education on the Grand Forks Air Force Base. The staff of JLG Architects want to hear YOUR ideas and have you help shape the design process. They will be onsite during this time to facilitate an interactive process with the AFB community. All are welcome!*

***Where**: Community Activities Center*

***When**: Tuesday, August 15th*
between 9 am - 1pm.

***Format**: Attendees are invited to come and go as per the amount of time they have available to attend. Join us if you have as little as 15 minutes to learn and share or please plan to stay longer for further discussion.*

For more information, please contact Janell Regimbal at janell@insighttosolutions.com or (701) 741-9110. Janell is providing project management support for this project and is a contractor of the GFPS.

With gratitude,
Janell Regimbal
Founder/Owner
Insight to Solutions
(701)741-9110 cell
janell@insighttosolutions.com
Home | Insight to Solutions

"Partnership is not a legal contract between two equal individuals. It's an emotional alliance between two people who are committed to each other's success." – Warren Buffet, businessman, investor, and philanthropist

NOTICE OF SPECIAL MEETING OF THE SCHOOL BOARD

GRAND FORKS AIR FORCE BASE PUBLIC SCHOOL DISTRICT #140

Wednesday, June 7, 2023 - 11:30 AM

via Zoom

https://mygfschools.zoom.us/j/85427715217?pwd=dTBhNnVqekV4enRMYllwL0U3LzAxdz09

Meeting ID: 854 2771 5217; Passcode: MRgU5X

Dial by your location: +1 312 626 6799

AGENDA

1. Call or Order
2. Consideration of Request for Proposals for Design Services at Nathan F. Twining Elementary and Middle School
3. Adjournment

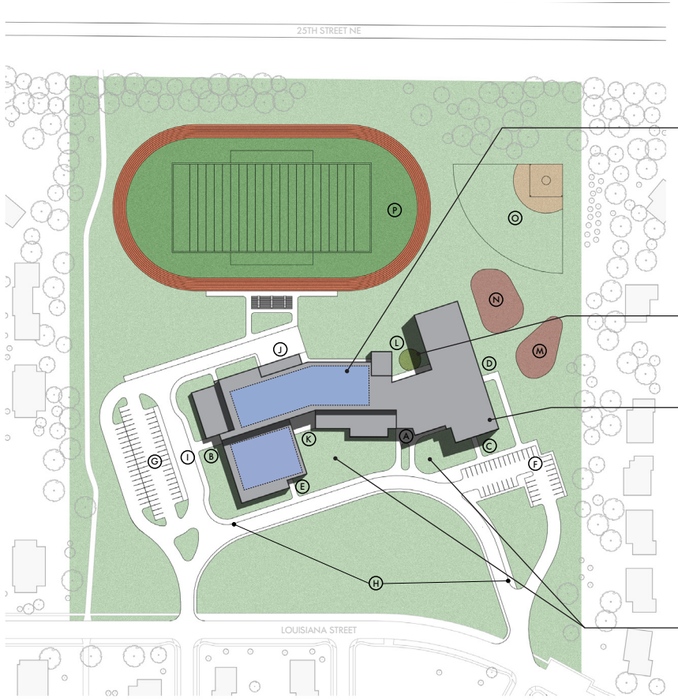
Persons with disabilities who may need assistance to access the meeting should call the superintendent's office at 787-4880 at least 24 hours prior to this meeting.

NEW TWINING PREK-8

OCTOBER 2023

SITE PLAN

The new Twining school building will be approx. 110,000 square feet with capacity for 500 students in grades PreK-8. The reconfigured site, formerly Carl Ben Eielson Elementary, will include new athletic fields, parking, and drop-off lanes. The project is made possible by the Public Schools on Military Installation (PMSI) program, which offers to split project costs 80:20 between federal and local sources.



A MAIN ENTRY / 1ST - 5TH GRADE PICKUP & DROP-OFF
B STAFF & EVENT ENTRY
C EARLY CHILDHOOD & PRE-K PICKUP & DROP-OFF
D KINDERGARTEN PICKUP & DROP-OFF
E 6TH - 8TH GRADE PICKUP & DROP-OFF
F EARLY CHILDHOOD - KINDERGARTEN PARENT PARKING LOT
G STAFF & EVENT PARKING LOT
H VEHICLE QUEING FOR 1ST - 8TH GRADE PARENT PICKUP & DROP-OFF
I QUEING FOR BUS PICKUP & DROP-OFF
J RECEIVING & DELIVERIES
K OUTDOOR DINING
L OUTDOOR LEARNING
M KINDERGARTEN - 1ST GRADE PLAYGROUND
N 2ND - 5TH GRADE PLAYGROUND
O SOFTBALL / KICKBALL FIELD
P FOOTBALL FIELD & SYNTHETIC RUNNING TRACK

SOLAR PHOTOVOLTAICS

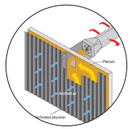
Solar photovoltaic (PV) panels can offset a school's energy costs, while providing hands-on STEM learning opportunities for students when paired with a visible energy dashboard.

OUTDOOR CLASSROOM

Outdoor classrooms bring the learning beyond the building in butterfly gardens, planting beds, and outdoor play. These spaces let children connect to the natural world and get outdoors during the day.

PASSIVE BUILDING TECHNOLOGIES

Innovative passive technologies can reduce energy use. Transpired Solar Collectors, shown above utilize solar heat gain to preheat outside air going into the HVAC system, even during the coldest months of the winter.



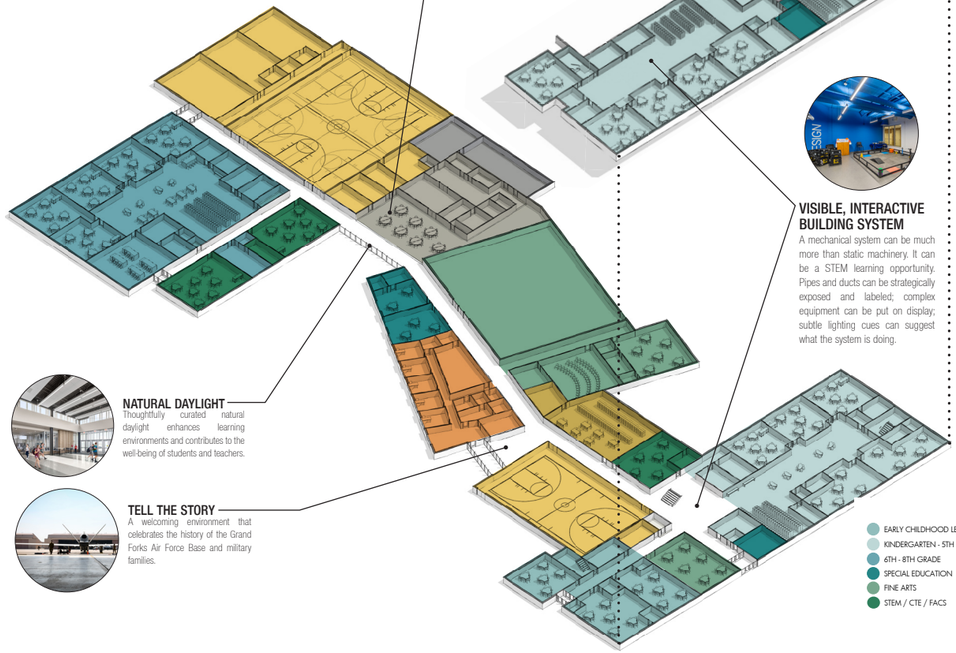
RAIN GARDENS

Rain gardens naturally filter stormwater runoff and reduce impact on stormwater infrastructure, while fostering an understanding of water conservation and biodiversity.

FLOOR PLAN

BUILDING DASHBOARD

An interactive dashboard can allow students to see real-time building information, such as energy and water use, temperature and humidity, and indoor air quality.



VISIBLE, INTERACTIVE BUILDING SYSTEM

A mechanical system can be much more than static machinery. It can be a STEM learning opportunity. Pipes and ducts can be strategically exposed and labeled; complex equipment can be put on display; subtle lighting cues can suggest what the system is doing.

NATURAL DAYLIGHT

Thoughtfully curated natural daylight enhances learning environments and contributes to the well-being of students and teachers.

TELL THE STORY

A welcoming environment that celebrates the history of the Grand Forks Air Force Base and military families.

- EARLY CHILDHOOD LEARNING & PRE-K
- KINDERGARTEN - 5TH GRADE
- 6TH - 8TH GRADE
- SPECIAL EDUCATION
- FINE ARTS
- STEM / CTE / FACS
- ATHLETICS
- MEDIA
- ADMINISTRATION
- CAFETERIA / KITCHEN
- BUILDING SUPPORT

Content created by JLG Architects

View From Media Center Looking South
Front cover: West Perspective

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

January 30, 2024

319 CES/CC
525 Tuskegee Airmen Blvd.
Grand Forks AFB, ND 58205-6434

Mr. Jeb Williams
Director
North Dakota Game and Fish Department
100 North Bismarck Expsy
Bismarck, ND 58501

Dear Mr. Jeb Williams:

The United States (US) Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with constructing a new Nathan Twining Elementary and Middle School. The new building would be constructed at 1238 Louisiana St, Grand Forks Air Force Base (GFAFB), which is the current location of the Carl Ben Eielson School Building. All development under the Proposed Action would occur on the GFAFB, on previously developed property. **Attachment 1** shows the proposed site plan for the new elementary and middle school (K-8) campus, including parking, playgrounds, and athletic fields. **Attachment 2** shows the existing school site (Callout B) and proposed site (Callout C); these are also the locations for the demolition.

Proposed Action

The Proposed Action is to construct a new campus to replace Nathan Twining Elementary and Middle School and demolition of the existing Carl Ben Eielson School and later demolition of the existing Nathan Twining Elementary and Middle School.

The Carl Ben Eielson School building is not presently utilized and is located approximately 0.75 miles from the current Twining School. By utilizing this site for the future Twining School, no disruption in education for current students would occur while the site is prepared, as well as throughout the duration of the building's construction. There would be no relocation costs for this alternative.

This action demolishes the existing Carl Ben Eielson school and constructs the new Twining School on this site. This location is in closer proximity to the privatized base housing, increasing walkability to/from school and is closer to the main gate. Additionally, this building site can be sectioned off during construction so contractors can work without gaining entrance to the AFB through the main gate. The proposed construction will meet state and federal design guidelines, capacity requirements, updated energy

requisites, and technology needs. This EA proposes to evaluate the new Twining School's potential impacts of demolition, construction, and operation.

Purpose and Need

The purpose of the Proposed Action in this EA is to construct a new K-8 campus to replace Nathan Twining Elementary and Middle School. The proposed campus would house students on the GFAFB and include a building sized to house approximately 500 students, with new parking, drop off lanes, and athletic fields. The Proposed Action would include demolition of the existing Carl Ben Eielson School, construction of the new school campus, and after the new school is built and operational, demolition of the existing Nathan Twining Elementary and Middle School. The new school building would be built to a minimum of LEED Silver certification as required by potential funding sources.

The need for a new school has been established with previous plans and studies. Renovation of existing education buildings would not address the structural or security concerns with the existing buildings. Additionally, any renovation costs are estimated to exceed more than half of the replacement value of the building. This has been considered in project development but helps support the need for the Proposed Action.

Environmental Assessment

The EA assesses the potential environmental impact of the Proposed Action and No Action Alternative. Potential impacts identified for the evaluation in the EA include: air quality, water resources, safety and occupational health, hazardous/solid materials/waste, biological resources, cultural resources, and geology and soils. The EA will also examine cumulative effects when combined with past, present, and reasonably foreseeable actions at the GFAFB. To aid in this process we request your input in identifying general or specific issues you believe should be addressed in this EA.

Granting Agency

This project is seeking design funding from the Office of Local Defense Community Cooperation (OLDCC), and will be seeking future funding for construction.

We intend to notify your agency when the Draft EA is completed and welcome comments and input at that time as well. Please inform us if someone else within your agency other than you should receive the Draft EA. Due to the timing of the project and subsequent environmental analysis, please provide your response within 30 days of the receipt of this letter.

Please send your response via postal mail or email (preferred) to:

Mr. Robert Greene, 319 CES/CENPL
525 Tuskegee Airmen Blvd
Grand Forks AFB, ND 58205-6434
Phone: 701.747.4664
Email: reobert.greene.13@us.af.mil

The DAF appreciates your support of its military mission at the GFAFB. Thank you for your time and assistance in this matter. We look forward to your response.

Sincerely,

BENTLEY.WILLIAM.E.1270112575 Digitally signed by BENTLEY.WILLIAM.E.1270112575 Date: 2024.01.29 09:11:37 -06'00'

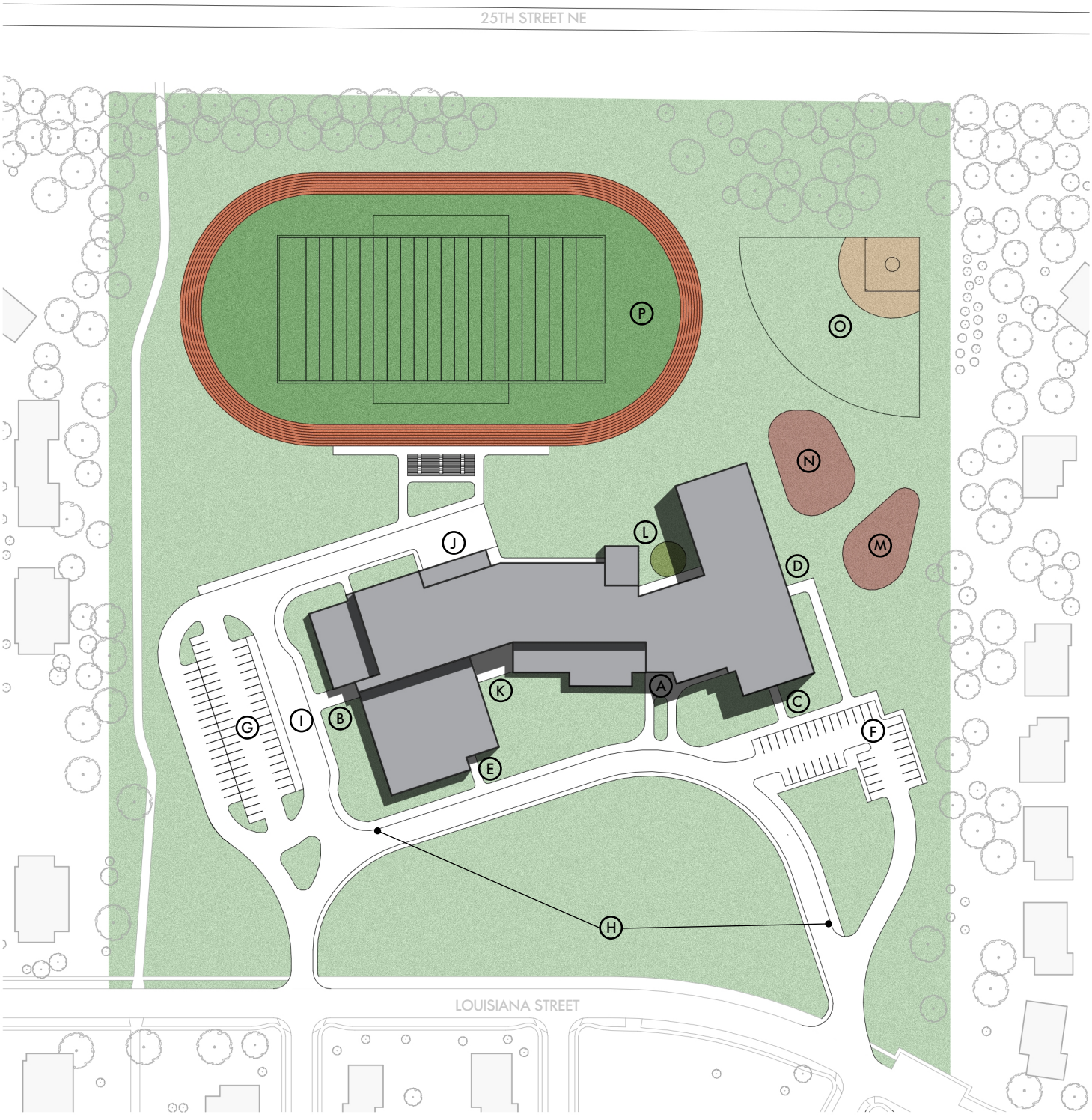
WILLIAM E. BENTLEY, Lt Col, USAF
Base Civil Engineer

Attachments:

1. Map of Proposed Site Plan, September 2023
2. Map of existing Nathan Twining Elementary and Middle School, as well as existing Carl Ben Eielson School

Attachment 1

- (B) STAFF & EVENT ENTRY
- (C) EARLY CHILDHOOD & PRE-K PICK-UP & DROP-OFF
- (D) KINDERGARTEN PICK-UP & DROP-OFF
- (E) 6TH - 8TH GRADE PICK-UP & DROP-OFF
- (F) EARLY CHILDHOOD - KINDERGARTEN PARENT PARKING LOT
- (G) STAFF & EVENT PARKING LOT
- (H) VEHICLE QUEING FOR 1ST - 8TH GRADE PARENT PICK-UP & DROP-OFF
- (I) QUEING FOR BUS PICK-UP & DROP-OFF
- (J) RECEIVING & DELIVERIES
- (K) OUTDOOR DINING
- (L) OUTDOOR LEARNING
- (M) KINDERGARTEN - 1ST GRADE PLAYGROUND
- (N) 2ND - 5TH GRADE PLAYGROUND
- (O) SOFTBALL / KICKBALL FIELD
- (P) FOOTBALL FIELD & SYNTHETIC RUNNING TRACK



TWINING SCHOOL

SITE PLAN

09/15/23 | JLG 23238 |

Attachment 2

A = Main Gate/Entry
B = Current School Site
C = Proposed School Site
D = Base Exchange
E = GFAFB Library
F = Community Activity Center
G = GFAFB Commissary
H = Fitness & Aquatics Center
I = Education Center
J = Prairie Rose Chapel
K = Child Development Center
L = Sunflower Chapel
M = GFAFB Clinic
N = Balfour Beatty Community Center
O = Youth Center

DEPARTMENT OF THE AIR FORCE
319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

May 10, 2024

Colonel Timothy A. Monroe
319 RW/CC
460 Steen Blvd
Grand Forks AFB ND 58205-6434

Dyan Youpee
Tribal Historic Preservation Officer
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
PO Box 1027
Poplar MT 59255

Dear Dyan Youpee

The purpose of this letter is to initiate project consultation for construction and demolition of Grand Forks Public Schools on Grand Forks Air Force Base (GFAFB) property with the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. 306108) and its implementing regulations at 36 CFR §800.3(f)(2). We invite you to provide any information on potential properties of cultural and/or religious significance to your tribe within the Area of Potential (APE) (Atch 1).

The APE includes two buildings, plus the total existing area leased to Grand Forks Public School System (GFPSS) (approximately 38 acres). GFAFB is proposing to construct a new Elementary and Middle School (K-8) Campus on installation owned property leased by the GFPSS to address structural and security concerns. The new campus will be sized to serve approximately 500 students, and will include a new parking area, drop-off area, and athletic fields. The proposed project entails demolition of the existing Carl Ben Eielson School and Nathan Twining Elementary and Middle School, with reconstruction within the existing Carl Ben Eielson School footprint (Atch 2). The Carl Ben Eielson School was built in 1959, and the Nathan Twining Elementary and Middle School was built in 1961; neither building has been evaluated for listing on the National Register of Historic Places (NRHP). GFAFB has determined the proposed project constitutes an undertaking as defined in 36 CFR §800.16(y).

Due to the extensive prior disturbance and construction within the APE, GFAFB has determined an archaeological survey is not necessary. However, an unanticipated discovery plan will be implemented if any cultural deposits are found. To our knowledge, there are no known cultural resources in the APE. If any potentially eligible cultural resources are identified in the APE, all impacts from all activities will be considered and can include potential direct and indirect effects if applicable. Direct effects might include, but are not limited to, ground disturbance, vibration, building modification and new construction, and staging and equipment storage. Indirect effects may perhaps include noise and aesthetic interference if appropriate to a specific circumstance.

Should you identify any properties of cultural and/or religious significance to your tribe within the APE, please also comment on any potential adverse impacts to those resources to us. Both existing school buildings will be evaluated for listing in the NRHP by consultants hired via GFPSS. We have also sent this consultation request to the North Dakota State Historic Preservation Office and to federally affiliated tribes with GFAFB as well (Atch 3).

GFAFB is also in the process of preparing an Environmental Assessment to evaluate the potential environmental consequences of the undertaking; a notification letter dated 30 Jan 2024, was sent to you regarding that effort and additional correspondence and information related to the Environmental Impact Analysis Process will be forthcoming.

If you have any questions, my contact is Ms. Kristen Rundquist, 319 CES/CEIE, kristen.rundquist@us.af.mil. Thank you in advance for your assistance in this effort and we look forward to hearing from you.

Sincerely

TIMOTHY A. MONROE, Colonel, USAF
Commander

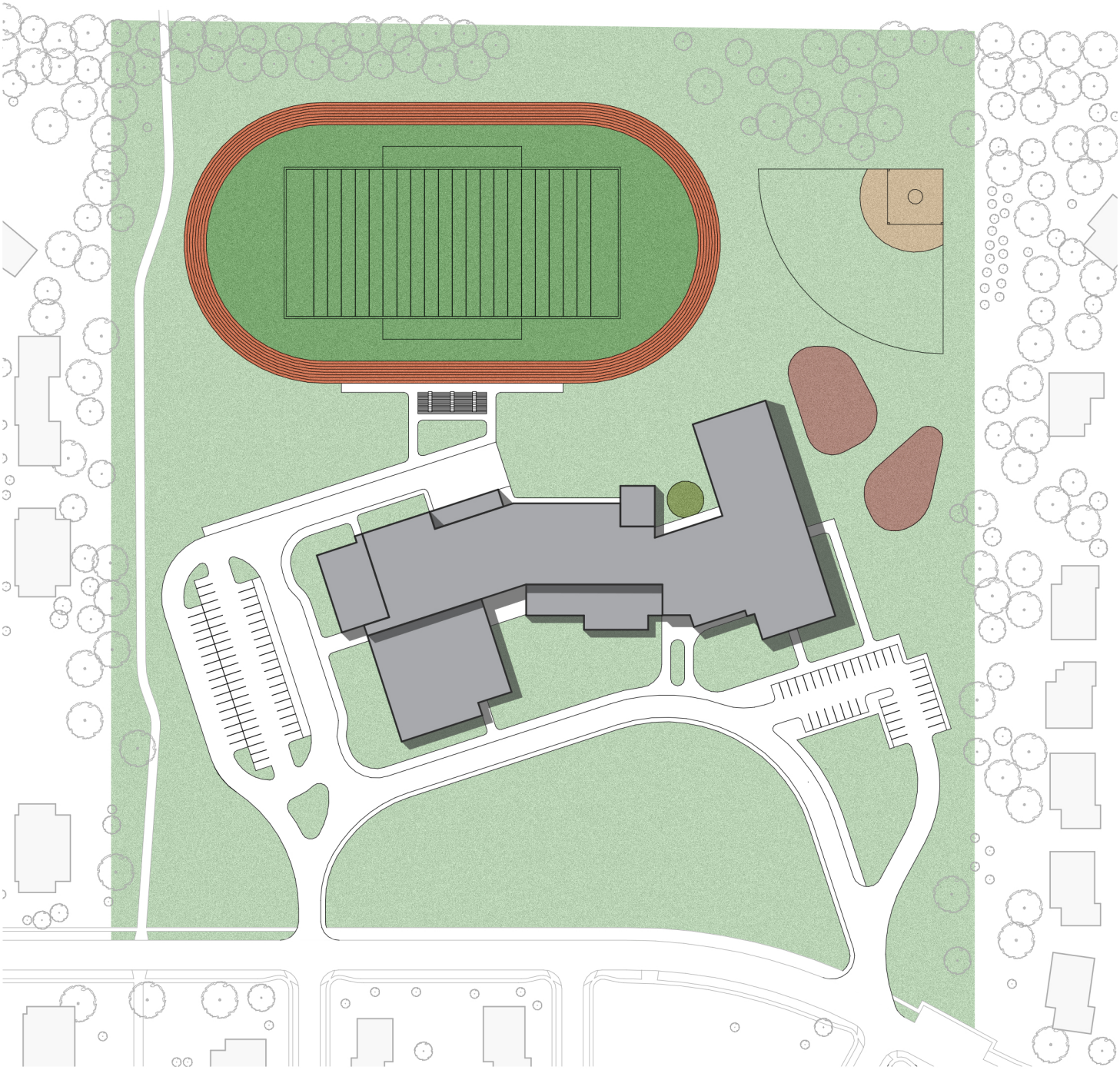
Attachments:
1. Area of Potential Effect
2. New School Construction Footprint
3. Distribution List

cc: Floyd Azure, Chairperson


Attachment 1
Area of Potential Effect
Grand Forks Public School Demolition and Construction, Grand Forks Air Force Base
Area of Potential Effect (38 Acres)
Roads
Buildings
Grand Forks Air Force Base Boundary
Turtle River
Nathan Twining Elementary and Middle School Proposed for Demolition
Vacant Carl Ben Eielson School Proposed for Demolition & Construction Site for New Campus
Dorm Pond
Grand Forks AFB Lagoons
Steen Blvd
Main Gate
Eielson St
To City of Grand Forks
US HWY 2
South Gate
Emerado
0
0.25
0.5 Miles

Attachment 2

A MAIN ENTRY / 1ST - 5TH GRADE PICK-UP & DROP-OFF



Distribution List

North Dakota State Historic Preservation Officer
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Bois Forte Band of Chippewa Indians of Minnesota Chippewa Tribe
Cheyenne and Arapaho Tribes
Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota
Chippewa Cree Indians of the Rocky Boy's Reservation, Montana
Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota
Crow Tribe of Montana
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa of Minnesota Chippewa Tribe
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
Grand Portage Band of Lake Superior Chippewa
Leech Lake Band of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota
Lower Sioux Indian Community Council
Mille Lacs Band of Ojibwe of Minnesota Chippewa Tribe of Minnesota Chippewa Tribe
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana
Oglala Sioux Tribe
Red Lake Band of Chippewa Indians, Minnesota
Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota
Santee Sioux Nation, Nebraska
Shakopee Mdewakanton Sioux Community of Minnesota
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota
Spirit Lake Tribe, North Dakota
Standing Rock Sioux Tribe of North and South Dakota
Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota
Turtle Mountain Band of Chippewa Indians of North Dakota
Upper Sioux Indian Community
White Earth Ojibwe of Minnesota Chippewa Tribe
Yankton Sioux Tribe of South Dakota

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

SEP 2 7 2024

Mr. Lance Landon
319 CES/CD
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Dr. Bill Peterson
State Historic Preservation Officer
State Historical Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Ave
Bismarck ND 58505

Dear Dr. Peterson

On 10 May 2024, the Department of the Air Force, Grand Forks Air Force Base (GFAFB) initiated 36 CFR §800 consultation with your office for the demolition of the Carl Ben Eielson Elementary School and Nathan F. Twining Elementary and Middle School and subsequent construction of a new Elementary and Middle School Campus (ND SHPO Ref.: 24-9033). Additionally, GFAFB initiated consultation with federally affiliated American Indian tribes available (Atch 1). We received a return letter from your office on 14 Jun 2024 concurring with the Area of Potential Effect (APE) and the determination that, due to previous disturbance, an archaeological survey was not required. At SHPO's request, an inadvertent discovery plan for the undertaking was provided and accepted (Atch 2). The Flandreau Santee Sioux Tribe and the Leech Lake Band of Chippewa both responded with interest in consultation related to inadvertent discoveries during ground disturbance.

The National Register of Historic Places (NRHP) evaluation and associated documentation of the two facilities located within the APE, the Carl Ben Eielson Elementary School and the Nathan F. Twining Elementary and Middle School is attached for your review (Atch 3). Based on the report, GFAFB has determined the Nathan F. Twining Elementary and Middle School (32GF3892) ineligible for listing on the NRHP due to lack of integrity, and the Carl Ben Eielson Elementary School (32GF3891) eligible for listing on the NRHP under Criteria A and C. We request your concurrence on these determinations as specified in 36 CFR §800.4(c)(2).

Based on the above determination, the proposed undertaking will result in an adverse effect to the Carl Ben Eielson Elementary School (32GF3891) and GFAFB requests your concurrence in this determination as specified in 36 CFR §800.5(d)(2). To resolve the adverse effect, GFAFB shall continue consultations with your office to develop a Memorandum of Agreement and invite the Advisory Council on Historic Preservation, the Grand Forks Public School District, the Office of Local Development Community Cooperation and affiliated American Indian Tribes to participate as appropriate.

Please send your comments and/or questions to Ms. Kristen Rundquist, 319 CES/CEIE, kristen.rundquist@us.af.mil. Thank you in advance for your assistance in this effort and we look forward to hearing from you.

Sincerely

LANCE E. LANDON, GS-13, DAF
Deputy Base Civil Engineer

Attachments:
1. Distribution List
2. Inadvertent Discovery Plan
3. Documentation of the Grand Forks Air Force Base Eielson Elementary School and Twining Elementary and Middle School in Grand Forks County, North Dakota

cc:
Grand Forks Public School District
Office of Local Defense Community Cooperation

Distribution List

North Dakota State Historic Preservation Officer
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
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Upper Sioux Indian Community
White Earth Ojibwe of Minnesota Chippewa Tribe
Yankton Sioux Tribe of South Dakota

Inadvertent Discovery Plan

Chapter 7.4 of the Integrated Cultural Resources Management Plan of Grand Forks Air Force Base

- At minimum, annually review all MOA/PAs in place to ensure that compliance measures are on schedule and resources are in place to meet stipulations. Agreement reviews can be accomplished at the same time as ICRMP annual reviews.
- Per MOA/PA stipulations, consult with agreement concurring parties to ensure MOA/PA stipulations are being met and determine if adverse impacts to historic properties, including privatized housing or other privatized assets, have occurred (if applicable).
- Work with the installation Housing and Real Properties managers to review all agreements for privatized housing and determine if properties have been evaluated for NRHP eligibility (if applicable).
- Work with AFCEC CRMM, proponent, and agreement signatories, as appropriate, to correct any deficiencies identified in meeting stipulations of executed MOAs or PAs.

7.4 Discoveries of Archaeological Resources and NAGPRA Cultural Items

Applicability Statement:

This SOP applies to all USAF installations that contain or potentially contain archaeological resources and/or NAGPRA cultural items. Installations that have agreements with tribes concerning the treatment of these two types of resources in discovery situations should include those procedures, in addition to the SOP described below. Cite the title and date of the agreement(s) when summarizing the procedures and ensure a copy of the agreement(s) is appended to the ICRMP.

Background/Overview:

Accidental or unanticipated discoveries of archaeological resources may occur on USAF controlled lands. When discoveries occur, the proper actions must be taken to minimize damage to these resources and to ensure that legal requirements are met. The relevant statute is Archaeological Resources Protection Act (ARPA) and the regulation is 32 CFR Part 229, Protection of Archaeological Resources.

There is also an important legal subset of archaeological resources, which includes NAGPRA cultural items (i.e., Native American human remains, associated or unassociated burial artifacts, and objects of cultural patrimony). The relevant regulation is 43 CFR Part 10, Native American Graves Protection and Repatriation Regulations. See the Cultural Resources Management Playbook for detailed guidance on the requirements of NAGPRA and this regulation.

It is a federal offense, under the provisions of ARPA and 32 CFR Part 229, to excavate, remove, damage, or otherwise deface any archaeological resources located on federal lands, without authorization. The provisions of ARPA apply to archaeological material greater than 100 years in age, regardless of the NRHP status of the site where they are found. Any person wishing to excavate or remove archaeological resources from an USAF installation must apply for an ARPA permit. USAF-contracted work is exempted from the permitting provision of ARPA. In the event of a permit request, the installation CRM should notify the AFCEC Section CRMM. Detailed information to assist in facilitating ARPA permitting is available in the Cultural Resources Management Playbook.

Procedure:

USAF or contractor personnel that make or become aware of a potential archaeological discovery on installation lands should:

- Immediately notify the CRM of the nature and location of the discovery

- Immediately cease potentially damaging activities and take efforts to ensure protection of resources until arrival of the CRM or designee

The CRM should:

- Notify Security Forces of the discovery
- Ensure that all archaeological items are left in place and that no further disturbance is permitted to occur
- Sufficiently identify the location of the discovery to provide efficient relocation, yet take efforts to minimize the types of signs that could attract personnel and place the discovery in danger
- Direct installation personnel and contractors to take efforts to resume mission-associated activities in a reasonable and timely manner

Security Forces should:

- Notify the Wing Commander regarding the location, nature, and circumstances of the discovery
- Provide security/protection for the site to prevent unauthorized disturbance, looting, or vandalism

If human remains are discovered or if there is sufficient reason to suspect that human remains are present (such as the observation of an oval-shaped rock or earthen mound), the CRM should:

- Determine (with the aid of a coroner or forensic anthropologist) if the remains are human, and whether or not they are associated with an archaeological deposit
- If the remains are not human, and not associated with an archaeological deposit, work may continue
- If the remains are human, Security Forces should notify local law enforcement agency and a coroner, who will determine if the remains are recent, or ancient (with the aid of a forensic anthropologist). If the human remains are modern, the matter may become the responsibility of law enforcement officials who will determine when project activities may resume
- Invite consultation with Native American tribes, as appropriate. If a qualified professional finds the human remains to be Native American, the provisions of NAGPRA apply. Follow the procedures outlined in 43 CFR Part 10 or in existing installation NAGPRA agreements with tribes

7.5 Accidents and Emergencies Affecting Historic Properties

Applicability Statement:

This SOP applies to all USAF installations.

Background/Overview:

Federal laws and regulations provide exceptions to the standard Section 106 and 110 reviews that may be used in times of emergency. Immediate rescue and salvage operations conducted to preserve life or property are exempt from the provisions of Sections 106 and 110 and the procedures outlined in 36 CFR § 800.12. Per 36 CFR Part 78, the Secretary of the Air Force may waive all or part of the USAF's Section 106 responsibility on a specific undertaking if the Secretary determines the existence of an imminent major natural disaster or a threat to national security. Such waivers will not exceed the period of the emergency, and generally do not extend to reconstruction or other activities beyond those immediately required to prevent endangerment of human life or property.

Procedure:

Documentation of the Grand Forks Air Force Base Eielson Elementary School & Twining Elementary and Middle School in Grand Forks County, North Dakota

By:
Emilie S. Arnold, MHP, MA

Prepared for:
Advanced Engineering and Environmental Services, Inc. (AE2S)

On behalf of:
Grand Forks Public Schools

Prepared by:
Beaver Creek Archaeology, Inc.
1632 Capitol Way
Bismarck, ND 58501
www.bcarch.org

Amanda Baker, Principal Investigator
Wade Burns, Project Director

NDSHPO Ref. No.: 24-9033
BCA Project No.: 2024-1306
June 2024

FOR OFFICIAL USE ONLY: DISCLOSURE OF SITE LOCATIONS PROHIBITED (43 CFR 7.18)

MANUSCRIPT DATA RECORD FORM

1. Manuscript Number:
2. SHPO Reference #: **24-9033**
3. Author: **Emilie S. Arnold, MHP, MA**
4. Title: **Documentation of the Grand Forks Air Force Base Eielson Elementary School and Twining Elementary and Middle School in Grand Forks County, North Dakota**
5. Report Date: **June 2024**
6. Number of Pages: **38**
7. Type – I, T, E, O: **I**

   I=Inventory; T=Formal Testing; E=Excavation; O=Other
8. List formally tested or excavated sites (not probes): **None**
9. Acres: **N/A**

Abstract

Advanced Engineering and Environmental Services, Inc. (AE2S), on behalf of Grand Forks Public Schools (the Proponent), contracted Beaver Creek Archaeology, Inc. (BCA) to document two school buildings on the Grand Forks Air Force Base (GFAFB). The proposed project consists of the demolition of both schools in favor of the construction of a new school to accommodate the student population on the base. The proposed project seeks to use federal funds to aid in the facilitation of this effort.

The purpose of this investigation was to record and evaluate the potential National Register of Historic Places (NRHP) eligibility of the Carl Ben Eielson Elementary School and the Nathan F. Twining Elementary and Middle School. As part of this process, BCA conducted a literature review, photographed both schools in detail, submitted North Dakota Cultural Resource Survey (NDCRS) site forms for each building, and prepared this cultural resource evaluation report.

The two schools were each newly recorded cultural resource sites with the North Dakota State Historic Preservation Office (SHPO). The Carl Ben Eielson Elementary School is currently vacant and is used to store equipment and was recorded as 32GF3891. Site 32GF3891 is recommended *eligible* for the NRHP under Criteria A and C. The Nathan F. Twining Elementary and Middle School is currently active and serves to educate the students on the GFAFB and was recorded as 32GF3892. Site 32GF3892 is recommended *not eligible* for the NRHP.

Consequently, as Eielson Elementary (32GF3891) has been recommended as eligible and is to be demolished by the proposed project, BCA recommends a finding of ***Historic Properties Affected*** for the proposed project as described herein.

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Acronyms and Abbreviations

AFB: Air Force Base
AMSL: Above Mean Sea Level
BCA: Beaver Creek Archaeology, Inc.
BRAC: Base Realignment and Closure
CFR: Code of Federal Regulations
CRM: Cultural Resource Management
DOD: Department of Defense
GFAFB: Grand Forks Air Force Base
GPS: Global Positioning System
GSV: Ground Surface Visibility
MPDF: Multiple Property Documentation Form
MS#: Manuscript Number
NHPA: National Historic Preservation Act
NRHP: National Register of Historic Places
Proponent: Grand Forks Public Schools
Quad: Quadrangle
R: Range
S: Section
SHPO: State Historic Preservation Office
SHSND: State Historical Society of North Dakota
SITS: Smithsonian Institute Trinomial System
STP: Shovel Test Probe
TCP: Traditional Cultural Property
Twp: Township
USACE: United States Army Corps of Engineers
USDA: United States Department of Agriculture
USGS: United States Geological Survey

Introduction

Advanced Engineering and Environmental Services, Inc. (AE2S), on behalf of Grand Forks Public Schools (the Proponent), contracted Beaver Creek Archaeology, Inc. (BCA) to document two school buildings on the (GFAFB). The purpose of this investigation was to record and evaluate the potential National Register of Historic Places (NRHP) eligibility of the Carl Ben Eielson Elementary School and the Nathan F. Twining Elementary and Middle School. As part of this process, BCA conducted a literature review, photographed both schools in detail, submitted North Dakota Cultural Resource Survey (NDCRS) site forms for each building, and prepared this cultural resource evaluation report. The report will be submitted to the Department of Defense (DOD)–GFAFB and the North Dakota State Historic Preservation Office (SHPO).

The proposed project consists of the removal of the vacant Carl Ben Eielson Elementary School for the purpose of constructing a new Nathan Twining K-8 school on its lot, then also removing the original Twining Elementary and Middle School after the new school has been built. The proposed project is located on the GFAFB, with the school sites leased to Grand Forks Public Schools and the buildings themselves belonging to the Grand Forks County (see Table 1 for project location details). This report will detail the architectural evaluation of each school, as well as the historic context of the two schools.

The legal locations for each school are presented below in a tabular format as depicted on the United States Geological Survey (USGS) 7.5' Emerado Quadrangle (Quad) map in Appendix A.

Table 1. School Location

School Name	Township	Range	Section	Legal Location	USGS Quad Map
Nathan F. Twining Elementary and Middle School (32GF3892)	152N	53W	24	SW¼ NE¼ SE¼ & N½ SE¼ SE¼	Emerado
Carl Ben Eielson Elementary School (32GF3891)			25	S½ SE¼ NE¼ & N½ NE¼ SE¼	

Objective

Due to the involvement of the DOD – GFAFB in the project, in addition to the proposed use of federal funds, the applicant is complying with the federal laws and regulations of the Section 106 process under the National Historic Preservation Act (NHPA), as amended and defined in 36 CFR 800. The NHPA requires the agency to consider what effects the undertaking will have on Historic Properties within the survey area, and the agency requires that the applicant provide the necessary data in order for the agency to consider such effects. The three central objectives of this study are to assist the DOD and Grand Forks Public Schools with their compliance obligations, identify and assess project impacts to historic properties, and provide National Register of Historic Places (NRHP) recommendations for historic properties encountered within the project area. In addition, the scientific objective of the study is to gather more comparative information that can be used to answer questions posed in the state plan.

Historic Properties, as defined in the NHPA [54 U.S.C. § 300308], consist of any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource." Cultural resource(s) is a generic and overarching term used by

Cultural Resource Management (CRM) professionals and can be used in reference to different site types, including archaeological, historical, and architectural sites, as well as properties of traditional, cultural, or religious importance that may or may not be eligible for inclusion on the NRHP.

Site Evaluation Criteria

To be eligible for inclusion on the NRHP, a site must usually be more than 50 years old, and retain sufficient historic integrity to communicate significance based on one or more of the following seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Furthermore, the site must meet at least one of the following criteria:

(a) Be associated with events that have made a significant contribution to the broad patterns of our history; or
(b) Be associated with the lives of persons significant in our past; or
(c) Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinctions; or
(d) Have yielded, or may be likely to yield, information important in prehistory or history.

In addition, cultural resources that hold traditional, cultural, or religious significance may be eligible for the NRHP if the National Register Criteria mentioned above are met.

The two schools for this project were also compared against the Multiple Property Documentation Form (MPDF) "Mid-Century Schools in Grand Forks, North Dakota 1949-1965," written in 2020 and expanding on research for a 2013 MPDF for the Grand Forks Historic Preservation Commission. "Mid-Century Schools in Grand Forks, North Dakota 1949-1965" evaluates twelve Grand Forks schools of a similar age to the schools discussed in this report. Neither the Eielson School nor the Twining School were evaluated when this MPDF was written; however, it provides a useful framework for the evaluation of other mid-century schools in Grand Forks County.

Grand Forks Air Force Base School History

The GFAFB is a Cold War-era military installation located within Grand Forks County, approximately 14 miles west of the city of Grand Forks located in North Dakota. The DOD chose the base's location and acquired land in 1954, beginning construction of the base in 1956. The design and construction of the base was contracted out to the U.S. Army Corps of Engineers (USACE) by the Air Force. The base's primary architect, selected by the USACE, was the Fargo-based firm Kurke & Associates (Allen and Josse 2011:1-2).

The base was sufficiently complete by February 1957 for the activation of the 478th Fighter Group, but construction of housing units for personnel and their families would not begin for another year (Allen and Josse 2011:1-2; The Bismarck Tribune 28 February 1958a:5). Concurrently, the USACE proposed the construction of an elementary and middle school to serve the families of incoming base personnel, with the federal government financing the school's construction while the Grand Forks school district would own and operate it (The Bismarck Tribune 6 March 1958b:15). The GFAFB's high school students attended Grand Forks schools outside the base (Mandan Daily Pioneer 24 November 1958:12).

Operations at the base expanded in 1959 with the activation of the Semi Automatic Ground Environment, a computational data coordination program, as well as the 905th Air Refueling Squadron under the Strategic Air Command (Allen and Josse 2011:1-2). As the functions of the base grew, so did the need for personnel, along with the needs of their families. Construction of the base's first school, the Eielson School, began in November 1959 (The Minot Daily News and Optic

Reporter 5 November 1959:5). Funding for the construction of the base's second school, the Twining School, was requested a week later (The Minot Daily News and Daily Optic Reporter 12 November 1959:5).

The GFAFB continued to add new operations in 1960 and 1962, replacing the 478th Fighter Group with the 478th Fighter Wing, transferring the Strategic Air Command to Grand Forks from Homestead AFB in Florida, installing the 319th Bombardment Wing, and transferring the base from Air Defense Command to Strategic Air Command (Allen and Josse 2011:2-1, 2-2). In 1963, a "transitional year in Cold War strategy," the Grand Forks Air Defense Sector was deactivated (Allen and Josse 2011:2-2). Over the course of this period, the 18-classroom Eielson School opened (1960), followed by the 16-classroom Twining School (1962). Both were designed by the Grand Forks firm Grosz and Anderson.

In 1964, a 22-classroom Grosz and Anderson addition was announced for the Twining School, more than doubling the school's capacity and reflecting the continuing growth of the base's civilian population (The Bismarck Tribune 23 September 1964:14). According to Grand Forks Public Schools, an addition for the Eielson School, with an estimated 12 classrooms and a multipurpose space, also by Grosz and Anderson, was completed in 1965, the same year that "the built environment of GFAFB was largely developed as a coherent military landscape of utilitarian hangar, missile, ammunition storage, and support structures" (Allen and Josse 2011:2-2). A second seven-classroom addition for the Twining School, designed by Grand Forks firm Wells, Denbrook & Assoc., Inc., was constructed in 1966, the same year that the base became the headquarters of the 321st Strategic Missile Wing (Allen and Josse 2011:1-2).

For a long period of time, no modifications were made at either school. As the schools continued operating as normal, requirements for personnel evolved alongside the military's operational needs. In the 1970s, the base's fighter-interceptor squadron and the Semi Automatic Ground Environment were both deactivated (Allen and Josse 2011:1-2). Concurrently in 1972, as the Eielson School reached student capacity, it became a Kindergarden-6th grade school, with its 7th and 8th grade students transferred to the Twining School (Davis 2012). In 1993, the same year that the mission focus of the 319th Bombardment Wing changed to air refueling, 6th graders were also transferred from Eielson to Twining (Allen and Josse 2011:1-2; Davis 2012).

In 1998, the Strategic Missile Wing was deactivated pursuant to Base Realignment and Closure (BRAC) Commission recommendations (Allen and Josse 2011:1-2). As a result of these reorganizations, enrollment at the Eielson and Twining schools dropped steeply in the late 1990s, and by 2001, the Eielson School became a K-3 school, with the Twining School enrolling grades 4-8 (Davis 2012). Following these changes to the base's operations, the Twining School received a gymnasium addition designed by Widseth Smith Nolting & Assoc. in 2003.

The BRAC Commission recommended a realignment for the GFAFB in May 2005, which "removed the tanker mission and significantly lowered personnel levels" (Allen and Josse 2011:2-3). The following year, the base began the process of removing its original Accompanied Personnel Housing, first constructed in 1958 (Allen and Josse 2011:3-1). In 2014, the base consolidated the student population in response to "declining student population and reductions in federal school funding" (Dobrydney 2014). The GFAFB closed the Eielson School in order to solely operate the Twining School, although it still maintained the Eielson building in the event that the base would require additional school capacity in the future (The Bismarck Tribune 17 April 2014:2B; Dobrydney 2014). In 2023, the Grand Forks School District was selected as one of ten recipients of federal funds to refurbish old or build new schools located within defense installations, and the district plans to replace the Twining School due to its structural and functional deficiencies (Banish 2023).

Beaver Creek
ARCHAEOLOGY

1306- GFAFB School Recordation Eielson and Twinings Schools
AE2S
T152N R53W Sec. 24 & 25
Emerado Quad. Map
Turtle River Drainage
Grand Forks County, North Dakota

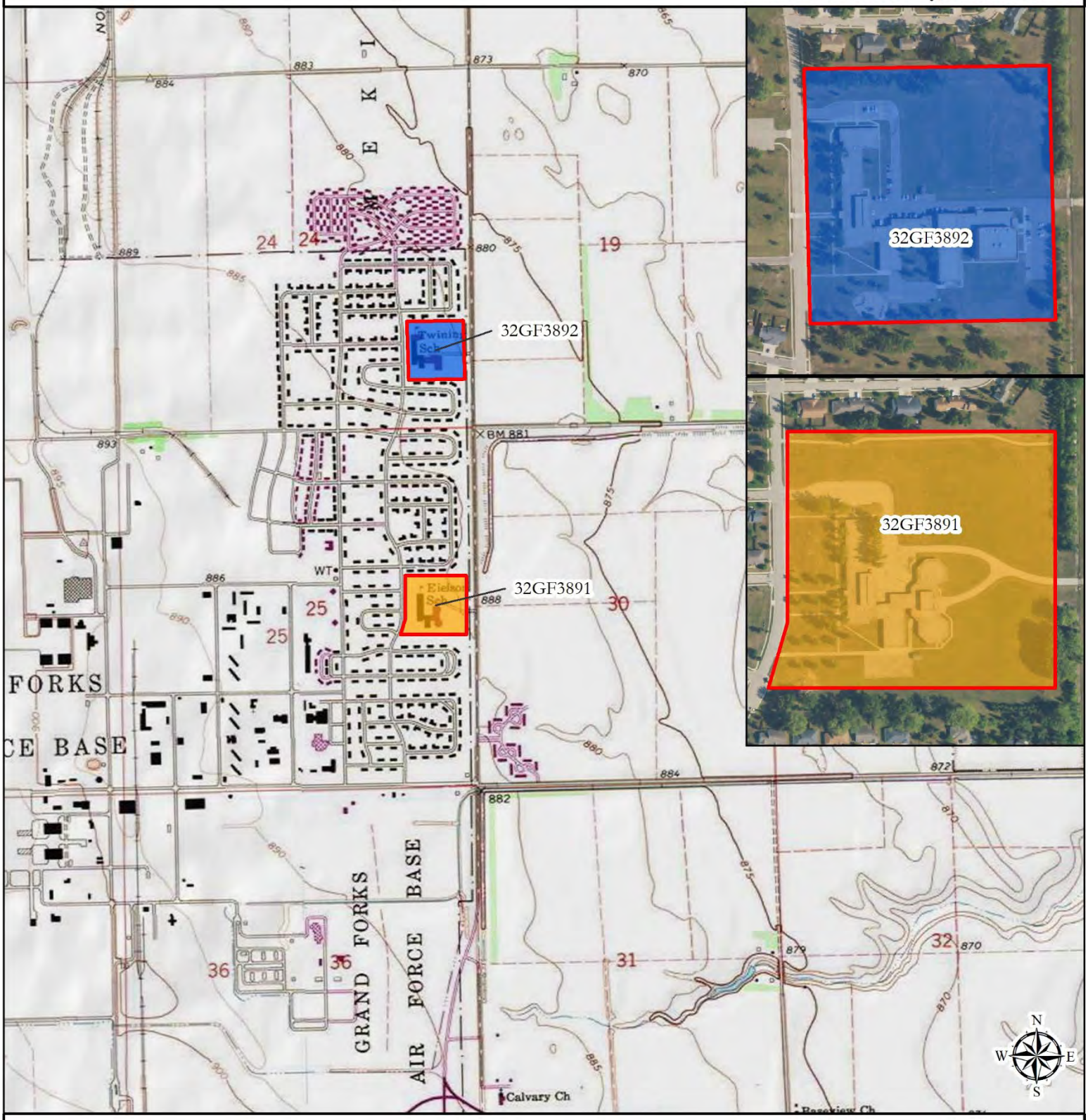

Figure 1. Project map.

Legend

- Inventory Area (35 acres)

Cultural Resources

- Eligible Site
- Ineligible Site

0 200 400 800 1,200 1,600 Meters
0 0.125 0.25 0.5 0.75 1 Miles

Base Map: USGS 7.5'
Scale: 1:24,000
UTM NAD83 Zone 14

GE

Literature Search

On March 28, 2024, BCA conducted a literature search at the North Dakota SHPO in Bismarck, North Dakota. The literature search is used to indicate the types, distribution, and density of cultural resources within and near the proposed project area. This is done by checking individual files at the North Dakota SHPO. The literature search revealed that both schools had been previously reviewed and considered for NRHP eligibility, but neither had been formally recorded as a site. Both schools had been previously found to be not eligible for the NRHP under MS# 012663.

Project Personnel and Inventory Conditions

On March 11, 2024, Amanda Baker and Gregory Erickson completed the field photographic documentation of both school sites with Emilie Arnold serving as the Architectural Historian and Wade Burns serving as the Project Director.

Weather conditions consisted of partly cloudy skies, and the temperature was approximately 50°F. The project area was located within the Red River Valley in the Turtle River drainage system. The elevation of the inventory area was approximately 888'-889' above mean sea level (AMSL) at the Eielson School and 881'-884' AMSL at the Twining School.

Carl Ben Eielson Elementary School (32GF3891)

Site 32GF3891 is the Carl Ben Eielson Elementary School, a single-story school building with a poured concrete foundation, reinforced concrete block walls with orange brick veneer, and a flat roof. Its appearance is characterized by its fixed 1/1 industrial windows. These have been ganged into groups of four, with casements for the two central bottom panes, and arranged in ribbons across the facades of the school's original structure. These 1/1 industrial windows with bottom casements are also seen ganged into threes or as single units in the walls of the addition. Ribbons of square metal panels colored to match the brick run above the windows. There are also large bays of glass brick high on the east and west sides of the gymnasium, some of which are damaged.

The school was designed as an 18-classroom facility by Grand Forks architectural firm Grosz and Anderson in 1959 (Mandan Daily Pioneer 17 December 1958:2). It was named for North Dakota native and Arctic explorer Carl Ben Eielson (1897-1929). Ground broke for the construction of the school in November 1959 (The Minot Daily News and Optic Reporter 5 November 1959:5). The original school building had an irregular but rectilinear plan. An addition, also designed by Grosz and Anderson, was constructed on the east/rear of the building. According to Grand Forks Public Schools, this was completed in 1965. The addition included two octagonal wings to the north and south of an elongated octagonal plan. The overall plan of the school measures approximately 340 feet east-to-west by 295 feet north-to-south. The school operated from 1960 through 2014, when the school was closed by the GFAFB (The Bismarck Tribune 17 April 2014:2B).

The school was previously evaluated in 2011 for NRHP eligibility, though not recorded as a site with the SHPO at that time, by Michael Allen and Lynn Josse for their "Final Cultural Resource Survey of Historic Place Evaluation of Historic Buildings, Structures and Sites, Grand Forks Air Force Base, Grand Forks County" (MS #012663). While Allen and Josse stated that the school's Grand Forks County ownership meant that Grand Forks AFB did not have copies of any documentation related to this school for them to evaluate, they judged that the school lacked historic integrity and NRHP eligibility, in part because they claimed the windows were "now infilled at the top with stucco above ribbons of metal windows" and that the school now had "large areas of glass block on [the gymnasium's] east and west walls where ribbon windows were originally located" (Allen and Josse 2011:4-288).

Figure 2. The Carl Ben Eielson School ca. 1960s (State Historical Society of North Dakota [SHSND] 2024a).

Grand Forks Public Schools provided a digital copy of the school's original blueprints, which Allen and Josse had been unable to access, to BCA for review. This document showed that the observed presence of glass block, which Allen and Josse alleged to be a modification, was in fact original to the architectural design. The specifications drafted by Grosz and Anderson showed that the panels running over top of the windows were designed to contain porcelain enamel and Thinlite glass block panels (Figure 2, Figure 3). According to Grand Forks Public Schools, the windows were updated with new units and EIFS (Exterior Insulation and Finishing System) cladding in 2005. The EIFS cladding, ribboned over the tops of the window units, gives the fenestration a similar visual rhythm when compared to the appearance of the porcelain enamel and Thinlite as constructed.

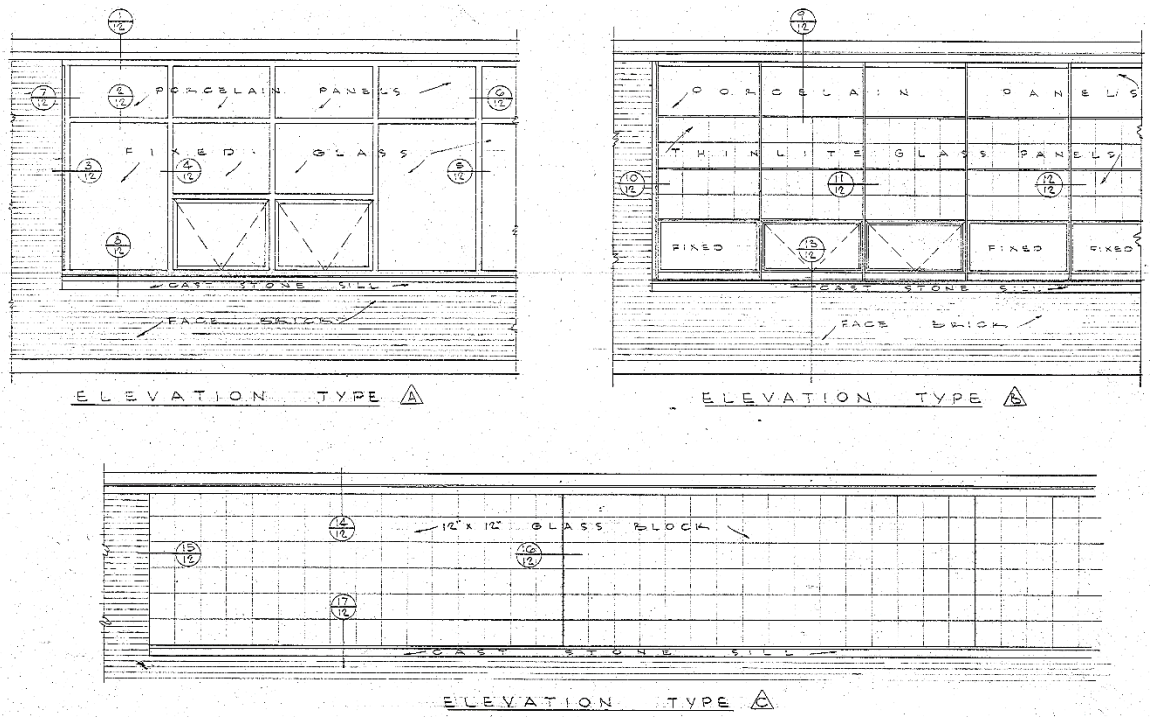

Figure 3. Detail of "Window Types" from Sheet 12 of the 1959 Grosz and Anderson plans for the Eielson School, courtesy Grand Forks Public Schools.

Allen and Josse's evaluation also stated, "Additions to the original section of [the school] have altered [its] scale and footprint" (Allen and Josse 2011:4-289). While the 1965 addition certainly modified the school's footprint, its scale (that is, the proportions of the building's elements to the whole) remained the same, chiefly due to its single-story height Furthermore, both the original 1959 school and its 1965 addition were designed by the same architectural firm and constructed within the period of significance described by the 2020 MPDF, "Mid-Century Schools in Grand Forks, North Dakota 1949-1965," suggesting the addition contributes to the building's overall architectural significance rather than detracting from it, as Allen and Josse had claimed (Allen and Josse 2011:4-288).

The Eielson School is in good physical condition. Although a few windows had been boarded and a handful of glass bricks are damaged, it possesses all aspects of historic integrity, with particular strength of integrity of design, materials, workmanship, and location.

Under Criterion A, a site would be considered for the NRHP nomination if it can be associated with an event that is significant to history. The school is significant to the state's education history, and specifically as a local example of the national, mid-century movement for progressive educational reform, described in "Mid-Century Schools in Grand Forks, North Dakota 1949-1965." As with the other schools evaluated in the MPDF, the progressive principles of its design included classrooms "constructed to engage contemporary pedagogical ideas and educational delivery" with "[new] open spaces with flexible furniture … intended to foster a more interactive and student-centered learning environment" (correspondence with Dr. Terry Brenner, Grand Forks Public Schools Superintendent; Caraher 2020:E-14-E-16). For its associations with these aspects of contemporary educational practice, the Eielson School is recommended eligible under Criterion A.

Under Criterion B, a site would be considered eligible if it can be associated with the lives of significant persons in our past. Research did not find connections to any such persons. For this reason, the Eielson School is recommended not eligible under Criterion B.

Under Criterion C, a site could be considered eligible if it (a) embodies a distinctive characteristic of a type, period, or method of construction; (b) represents the work of a master; (c) possesses high artistic value, or (d) represents a significant and distinguishable entity whose components may lack individual distinction. The mid-century design of the school is consistent with the design tenets highlighted by the "Mid-Century Schools in Grand Forks, North Dakota 1949-1965" MPDF: "one-story brick structures with flat roofs [that showed] a distinct architectural departure from the two- and three-story schools of the early decades of the twentieth century … [with] sprawling, low elevation designs, replete with long banks of windows for maximizing natural light" (Caraher 2020:E-1). The school and its addition were designed by Grosz and Anderson, one of three architectural firms employed by the Grand Forks Board of Education as identified in the MPDF (Caraher 2020:E6-E7). Grosz and Anderson also designed the architecturally similar and NRHP-eligible Valley Junior High School (Caraher 2020:F-21-F-22). The school is therefore recommended eligible under Criterion C at the local level as an intact example of a mid-century school and for its association with Grosz and Anderson.

Under Criterion D, if a site has yielded or is likely to yield information important to our history or prehistory it could be eligible for the NRHP consideration. A site visit did not reveal any such potential, and the site is not likely to possess information potential not already located in current documentation. Therefore, the Eielson School is recommended not eligible under Criterion D.

Figure 4. Overview of the Carl Ben Eielson Elementary School, west façade, view to the southeast.

Figure 5. Overview of the Carl Ben Eielson Elementary School, west façade, view to the east-southeast.

Figure 6. Overview of the Eielson School, west façade, view to the east-northeast.

Figure 7. Overview of the Eielson School, southwest corner, view to the northeast.

Figure 8. Eielson School entrance, view to the east.

Figure 9. Eielson School name on the south side of the west façade, view to the northeast.

Figure 10. Typical ribboned windows seen on the Eielson School west facade, view to the east-northeast.

Figure 11. Overview of the Eielson School, south facade, view to the north.

Figure 12. Eielson School south façade, original construction (left) and addition (center, right), view to the north.

Figure 13. Overview of the Eielson School's southeast corner: octagonal addition (foreground) with original construction (background left), view to the northwest.

Figure 14. Overview of the Eielson School's east façade/addition, looking west-southwest.

Figure 15. Overview of the Eielson School's northwest corner: octagonal addition (left), original construction (right), view to the south.

Figure 16. Northern octagonal addition (Eielson School), view to the south.

Figure 17. Overview of Eielson School original construction with gymnasium at far left, view to the southwest.

Figure 18. Exterior of Eielson School gymnasium, view to the southwest.

Figure 19. Modern detached garage building at Eielson School site, view to the northeast.

Figure 20. Modern shed outbuilding at Eielson School site, view to the south.

Nathan F. Twining Elementary and Middle School (32GF3892)

Site 32GF3892 is the Nathan F. Twining Elementary and Middle School, a one-story school building with one two-story wing and a poured concrete foundation, reinforced concrete block walls with beige brick veneer, and a flat roof. Its appearance is characterized by its flat planes and fixed 1/1 industrial windows. On the facades of the earliest section of the school, these windows have been ganged into groups of four, with casements for the two central bottom panes, and arranged in ribbons. These 1/1 industrial windows with bottom casements are also seen ganged into twos and threes or as single units in the walls of the 1960s additions. The windows on the two-story addition are similar 1/1 industrial fixed windows grouped in twos or as singles, but the top pane is taller. Ribbons of square metal panels painted to match the brick run above the windows.

Figure 21. The Nathan F. Twining School ca. 1963 (State Historical Society of North Dakota [SHSND] 2024b).

Funding for the construction of the Twining School was requested in 1959. The 16-room one-story school, designed by Grand Forks architect Grosz and Anderson, opened in 1962 (The Bismarck Tribune 7 March 1962:20). The school was named for General Nathan F. Twining, the third chief of staff of the Air Force who also served as chairman of the joint chiefs of staff (Davis 2012). As initially constructed, the Twining School had an almost identical footprint to the original Eielson School, also designed by Grosz and Anderson, and was very similar in appearance. In 1964, the construction of a 22-room addition for the Twining School was announced (The Bismarck Tribune 23 September 1964:14). This addition, located at the southeast side of the building, was designed by Grosz and Anderson as well, and it included a two-story wing. In 1966, Grand Forks architectural firm Wells, Denbrook & Assoc., Inc., designed a second addition for the north side of the school, one story tall and containing seven classrooms. In 2003, Grand Forks architectural firm Widseth Smith Nolting & Assoc. designed a gymnasium addition for the school, which was constructed on the east side of the first addition.

The Twining School was also previously evaluated (and, like the Eielson School, not recorded with the SHPO) in 2011 by Michael Allen and Lynn Josse. As with the Eielson School, Allen and Josse did not review blueprints for the Twining School for their evaluation of the building's integrity and

eligibility. Again, they presumed that the building's original porcelain enamel panels were stucco infill and that areas of glass block were not original to the building (Allen and Josse 2011:4-294). While the only 1961 Twining School plan Grand Forks Public Schools could provide to BCA for review was its electrical, plumbing and heating, and ventilating schematics, the original construction for the Eielson and Twining schools are so similar that these elements may logically be assumed to be original in the Twining School as well.

As with the Eielson School, Allen and Josse found that the Twining School was not eligible for the NRHP. BCA agrees with this assessment. Although the Twining School is in good physical condition, the school's additions by different architects in 1966 and 2003 negatively impact its scale and integrity of design. One of its additions is also two stories in height, breaking with the unifying design principles of "one-story brick structures with flat roofs" characterizing mid-century schools of this type (Caraher 2020:E-1). Because of its additions, the school lacks historic integrity and does not represent an intact mid-century example of a Grand Forks school building, as described in "Mid-Century Schools in Grand Forks, North Dakota 1949-1965."

Under Criterion A, a site would be considered for the NRHP nomination if it can be associated with an event that is significant to history. The school is associated with the GFAFB and also with the broad patterns of education history in the state of North Dakota, but it does not represent significant contributions to the history of either. The site is recommended not eligible under Criterion A.

Under Criterion B, a site would be considered eligible if it can be associated with the lives of significant persons in our past. Research did not find connections to any such persons. For this reason, the Twining School is recommended not eligible under Criterion B.

Under Criterion C, a site could be considered eligible if it (a) embodies a distinctive characteristic of a type, period, or method of construction; (b) represents the work of a master; (c) possesses high artistic value, or (d) represents a significant and distinguishable entity whose components may lack individual distinction. The school does not meet these qualifications, and it is recommended not eligible under Criterion C.

Under Criterion D, if a site has yielded or is likely to yield information important to our history or prehistory it could be eligible for the NRHP consideration. A site visit did not reveal any such potential, and the site is not likely to possess information potential not already located in current documentation. Therefore, the Twining School is recommended not eligible under Criterion D.

Figure 22. View of Twining School's southwest side looking northeast.

Figure 23. View of Twining School's southwest side looking northeast. Left and center: original 1962 school; background right: 1964 addition.

Figure 24. View of Twining School's south side looking north. Left: original 1962 construction; center right and far right: 1964 addition.

Figure 25. View of Twining School's south side looking north. Left and center: 1964 addition; far right: 2003 addition.

Figure 26. View of Twining School's south side looking north-northwest. Far left/background: original 1962 school; center: 1964 addition; far right: 2003 addition.

Figure 27. View of Twining School's east side (2003 addition) looking west.

Figure 28. View of Twining School's east side (2003 addition) looking west-southwest.

Figure 29. View of Twining School's north side looking southwest. Left: 2003 addition; right: 1964 addition; far right: original 1962 construction.

Figure 30. View of Twining School's north side looking south. Left and center: 2003 addition; far right: 1964 addition.

Figure 31. View of Twining School's north side looking southwest. Left: 1964 addition; far right: original 1962 construction.

Figure 32. View of Twining School's north side looking south. Left: 1964 addition; far right: original 1962 construction.

Figure 33. View of Twining School's east side looking west. Left and middle: original 1962 construction; far right: 1966 addition.

Figure 34. View of Twining School's northeast side looking southwest. Left: original 1962 construction; right: 1966 addition.

Figure 35. View of Twining School's northeast side (1966 addition) looking southwest.

Figure 36. View of Twining School's west side looking east-southeast. Left and middle: 1966 addition; right: original 1962 construction.

Figure 37. View of Twining School's west side (original 1962 construction) looking east-southeast.

Figure 38. View of Twining School's west side (original 1962 construction) looking southeast.

Figure 39. West façade Twining School entry, original 1962 construction, looking east.

Figure 40. Twining School entrance and lettering, original 1962 construction, view to the north-northeast.

Figure 41. Twining School lettering, view to the east-southeast.

Figure 42. Twining School entrance and sign, view to the east-southeast.

Figure 43. Modern detached garage at the Twining School site, view to the southeast.

Figure 44. Modern detached garage at the Twining School site, view to the northwest.

Figure 45. Modern shed at the Twining School site, view to the northeast.

Figure 46. Modern shed at the Twining School site, view to the southwest.

Management Summary

Beaver Creek Archaeology, Inc. documented two school buildings on the GFAFB. The location of the proposed project and the location of the two schools can be seen in Figure 1.

The literature search revealed that both schools had been previously reviewed and considered for NRHP eligibility, but neither had been formally recorded as a site. Both schools had been previously found to be not eligible for the NRHP under MS# 012663. During the documentation, two new cultural resources were recorded: Site 32GF3891, the Carl Ben Eielson Elementary School, and Site 32GF3892, the Nathan F. Twining Elementary and Middle School.

Site 32GF3891, the Eielson School, is recommended *eligible* for the NRHP under Criterion A for historical associations with North Dakota educational history and under Criterion C as an intact example of the distinctive design of mid-century school buildings constructed by Grosz and Anderson, one of three architectural firms hired by the Grand Forks Board of Education within this time period to construct significant examples of the style. Site 32GF3892, the Twining School, is recommended *not eligible* for the NRHP due to a lack of historic integrity, specifically integrity of design.

Consequently, as Eielson Elementary (32GF3891) has been recommended as eligible and is to be demolished by the proposed project, BCA recommends a finding of ***Historic Properties Affected*** for the proposed project as described herein.

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DEPARTMENT OF THE AIR FORCE
319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

Mr. Lance Landon
319th CES/CD
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Mr. Reid Nelson
Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington DC 20001

Dear Reid Nelson

The Department of the Air Force (DAF), Grand Forks Air Force Base (GFAFB), North Dakota (ND), with the Grand Forks Public School District (GFPSD) proposes to demolish two school buildings and associated infrastructure; and will additionally construct a new elementary and middle school campus on installation property (ND SHPO Ref.: 24-9033, Atch 1). One school, Carl Ben Eielson Elementary School (32GF3891), was determined eligible for the National Register of Historic Places under Criteria A and C by the DAF wherein the ND SHPO concurred with this finding (Atch 2). By the present letter, the DAF is notifying you in reference to 36CFR§800.6(1). It is suggested the proposed undertaking does not involve criteria likely to cause the ACHP to participate in development of the anticipated memorandum of agreement (MOA) to resolve adverse effects due to the destruction of the identified eligible historic property. The DAF does not anticipate any disagreement between consulting parties during the MOA development.

GFAFB will email to the ACHP portal 'e106@achp.gov' an electronic ACHP e106 Form and associated attachments (Atch 3) to provide documentation as specified by 36CFR§800.11(e). The anticipated mitigation proposed in the draft MOA includes constructing a physical and digital exhibit of the historic property as part of the new school facility. This resolution informally appears satisfactory among SHPO, Grand Forks Public School District, Office of Local Defense Community Cooperation (OLDCC, grant funding agency), and GFAFB consulting properties.

Please let us know within 15 days of your receipt of this letter and the separate ACHP e106 Form if you wish to participate in development of this MOA. For questions, please contact Ms. Ayla Morehouse, Cultural Resources Manager, by email ayla.morehouse@us.af.mil or office phone 701-747-6154. Thank you for your consideration of this matter, and for your agency's support on Section 106-related endeavors at the GFAFB.

Sincerely

LANDON.LANCE.ERIC.1458635028 Digitally signed by LANDON.LANCE.ERIC.1458635028 Date: 2024.12.09 10:08:53 -06'00'

LANCE E. LANDON, GS-13, DAF
Deputy Base Civil Engineer

Attachments:
1. ND SHPO Ref. 24-9033
2. ND SHPO Concurrence
3. ACHP e106 Form
4. Supplemental Documents

Distribution List
ND SHPO
GFPSD
OLDCC

Attachment 1

STATE HISTORICAL SOCIETY
OF NORTH DAKOTA

HISTORY FOR everyone.

November 7, 2024

Ms. Kristen Rundquist
319 CES/CEIE
Grand Forks AFB, ND 58205
kristen.rundquist@us.af.mil

ND SHPO Ref.: 24-9033 GFAFB Public School Replacement in portions of [T152N R53W Section 24] in Grand Forks County, North Dakota

Dear Ms. Rundquist,

We reviewed ND SHPO Ref.: 24-9033, the proposed demolition of the Carl Ben Eielson Elementary School and Nathan F. Twining Elementary and Middle School and subsequent construction of a new Elementary and Middle School Campus. We concur that the Carl Ben Eielson Elementary School is eligible for listing in the National Register of Historic Places (NRHP) and that the Nathan F. Twining Elementary and Middle School is not eligible for listing in the NRHP. As a result, we further concur this project would result in an "Adverse Effect." We look forward to further consultation for the development of a Memorandum of Agreement.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Lorna Meidinger, Lead Historic Preservation Specialist at (701) 328-2089 or lbmeidinger@nd.gov

Sincerely,

for William D. Peterson PhD
State Historic Preservation Officer
(North Dakota)

24-9033

North Dakota Heritage Center & State Museum
612 East Boulevard Avenue
Bismarck, ND 58505-0830

701.328.2666
histsoc@nd.gov

history.nd.gov
statemuseum.nd.gov

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

SEP 2 7 2024

Mr. Lance Landon
319 CES/CD
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Dr. Bill Peterson
State Historic Preservation Officer
State Historical Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Ave
Bismarck ND 58505

Dear Dr. Peterson

On 10 May 2024, the Department of the Air Force, Grand Forks Air Force Base (GFAFB) initiated 36 CFR §800 consultation with your office for the demolition of the Carl Ben Eielson Elementary School and Nathan F. Twining Elementary and Middle School and subsequent construction of a new Elementary and Middle School Campus (ND SHPO Ref.: 24-9033). Additionally, GFAFB initiated consultation with federally affiliated American Indian tribes available (Atch 1). We received a return letter from your office on 14 Jun 2024 concurring with the Area of Potential Effect (APE) and the determination that, due to previous disturbance, an archaeological survey was not required. At SHPO's request, an inadvertent discovery plan for the undertaking was provided and accepted (Atch 2). The Flandreau Santee Sioux Tribe and the Leech Lake Band of Chippewa both responded with interest in consultation related to inadvertent discoveries during ground disturbance.

The National Register of Historic Places (NRHP) evaluation and associated documentation of the two facilities located within the APE, the Carl Ben Eielson Elementary School and the Nathan F. Twining Elementary and Middle School is attached for your review (Atch 3). Based on the report, GFAFB has determined the Nathan F. Twining Elementary and Middle School (32GF3892) ineligible for listing on the NRHP due to lack of integrity, and the Carl Ben Eielson Elementary School (32GF3891) eligible for listing on the NRHP under Criteria A and C. We request your concurrence on these determinations as specified in 36 CFR §800.4(c)(2).

Based on the above determination, the proposed undertaking will result in an adverse effect to the Carl Ben Eielson Elementary School (32GF3891) and GFAFB requests your concurrence in this determination as specified in 36 CFR §800.5(d)(2). To resolve the adverse effect, GFAFB shall continue consultations with your office to develop a Memorandum of Agreement and invite the Advisory Council on Historic Preservation, the Grand Forks Public School District, the Office of Local Development Community Cooperation and affiliated American Indian Tribes to participate as appropriate.

Please send your comments and/or questions to Ms. Kristen Rundquist, 319 CES/CEIE, kristen.rundquist@us.af.mil. Thank you in advance for your assistance in this effort and we look forward to hearing from you.

Sincerely

LANCE E. LANDON, GS-13, DAF
Deputy Base Civil Engineer

Attachments:
1. Distribution List
2. Inadvertent Discovery Plan
3. Documentation of the Grand Forks Air Force Base Eielson Elementary School and Twining Elementary and Middle School in Grand Forks County, North Dakota

cc:
Grand Forks Public School District
Office of Local Defense Community Cooperation

Attachment 2

November 7, 2024

Ms. Kristen Rundquist
319 CES/CEIE
Grand Forks AFB, ND 58205
kristen.rundquist@us.af.mil

ND SHPO Ref.: 24-9033 GFAFB Public School Replacement in portions of [T152N R53W Section 24] in Grand Forks County, North Dakota

Dear Ms. Rundquist,

We reviewed ND SHPO Ref.: 24-9033, the proposed demolition of the Carl Ben Eielson Elementary School and Nathan F. Twining Elementary and Middle School and subsequent construction of a new Elementary and Middle School Campus. We concur that the Carl Ben Eielson Elementary School is eligible for listing in the National Register of Historic Places (NRHP) and that the Nathan F. Twining Elementary and Middle School is not eligible for listing in the NRHP. As a result, we further concur this project would result in an "Adverse Effect." We look forward to further consultation for the development of a Memorandum of Agreement.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Lorna Meidinger, Lead Historic Preservation Specialist at (701) 328-2089 or lbmeidinger@nd.gov

Sincerely,

for William D. Peterson PhD
State Historic Preservation Officer
(North Dakota)

24-9033

Advisory Council on Historic Preservation
Electronic Section 106 Documentation Submittal System (e106) Form
MS Word format

Send to: *e106@achp.gov*

Please review the instructions at www.achp.gov/e106-email-form prior to completing this form. Questions about whether to use the e106 form should be directed to the assigned ACHP staff member in the Office of Federal Agency Programs.

I. Basic information

1. **Purpose of notification.** Indicate whether this documentation is to:
   - ☒ Notify the ACHP of a finding that an undertaking may adversely affect historic properties
   - ☒ Invite the ACHP to participate in a Section 106 consultation
   - ☐ Propose to develop a project Programmatic Agreement (project PA) for complex or multiple undertakings in accordance with 36 C.F.R. 800.14(b)(3)
   - ☐ Supply additional documentation for a case already entered into the ACHP record system
   - ☐ File an executed MOA or PA with the ACHP in accordance with 800.6(b)(iv) (where the ACHP did not participate in consultation)
   - ☐ Other, please describe
     Click here to enter text.

2. ACHP Project Number (If the ACHP was previously notified of the undertaking and an ACHP Project Number has been provided, enter project number here and skip to Item 7 below): Click here to enter text.

3. **Name of federal agency** (If multiple agencies, list them all and indicate whether one is the lead agency):

Grand Forks Air Force Base (Lead Agency)

Office of Local Defense Community Cooperation (OLDCC)

4. **Name of undertaking/project** (Include project/permit/application number if applicable):

ND SHPO Ref.: 24-9033

5. **Location of undertaking** (Indicate city(s), county(s), state(s), land ownership, and whether it would occur on or affect historic properties located on tribal lands):

Grand Forks Air Force Base
Grand Forks, Grand Forks County, North Dakota

Does not occur on or affect historic properties on tribal land.

6. **Name and title of federal agency official and contact person for this undertaking**, including email address and phone number:

Ayla Morehouse
Natural and Cultural Resources Manager
319 CES/CEIEC, GFAFB
COM: (701) 747-6154

II. Information on the Undertaking*

7. Describe the undertaking and nature of federal involvement (if multiple federal agencies are involved, specify involvement of each):

Grand Forks Public School District has been awarded funds for the design and partial demolition through a grant with the Office of Local Defense Community Cooperation (OLDCC). The grant funder has confirmed a second phase of funding for construction and completing demolition, contingent on current project completing environmental assessment obligations. Grand Forks Public School District is responsible for funding 20% of the project, managing the design, and construction of the project; while Grand Forks Air Force Base maintains indirect jurisdiction as the property leaser.

No further permitting required.

8. Describe the Area of Potential Effects (APE):

The APE is 38 acres between both demolition sites, 19 acres that will impact the NRHP eligible building.

The Carl Ben Eielson legal location is T152N R53W Sec28; S½ SE¼ NE¼ & N½ NE¼ SE¼.

See Attachment 4 – Supplemental Documents for Area of Potential Effect and New School Construction Footprint.

9. Describe steps taken to identify historic properties:

An Archeological Survey was conducted and contracted with Beaver Creek Archaeology through GFPSD. After DAF review of the survey, the AF identified and recommended that the Carl Ben Eielson Elementary School was eligible for the NRHP and has received ND SHPO concurrence with this finding. On 7 NOV 2024, ND SHPO concurred eligibility prompting the development of a mitigation MOA.

10. Describe the historic property (or properties) and any National Historic Landmarks within the APE (or attach documentation or provide specific link to this information):

See attachment 1 - ND SHPO Ref. 24-9033 and attachment 2 - ND SHPO Concurrence.

11. Describe the undertaking's effects on historic properties:

The Undertaking will have a negative effect due to demolition of a school facility located on Grand Forks AFB installation property that was identified as eligible for the National Register of Historic Places wherein the North Dakota SHPO concurred with this AF finding.

12. Explain how this undertaking would adversely affect historic properties (include information on any conditions or future actions known to date to avoid, minimize, or mitigate adverse effects):

The existing historic building will be demolished. The anticipated mitigation resolution includes constructing a physical and digital exhibit of the historic property as part of the new school facility.

13. Provide copies or summaries of the views provided to date by any consulting parties, Indian tribes or Native Hawai'ian organizations, or the public, including any correspondence from the SHPO and/or THPO.

SHPO concurrence of the building's NRHP eligibility under Criteria A and C is attached. All 29 federally affiliated tribal points of contact with GFAFB were initially invited into Section 106 consultation (10 May 2024), provided the architectural survey conducted and were issued follow-on letters (27 Sep 2024) inviting further consultation and participation in development of the MOA to resolve adverse effects of demolition of the school. The Mille Lacs Band of Ojibwe has requested to be included in project consultation on 1 March 2024 after the Environmental Assessment notification letter was distributed to all interested parties. Both the Flandreau Santee Sioux Tribe (16 May) and the Leech Lake Band of Ojibwe (3 Jun) responded to the initial consultation letter to be consulted in the event of inadvertent discovery. In addition, the Sisseton Wahpeton Oyate (22 Oct) responded to the follow-on consultation letter to also be consulted in the event of inadvertent discovery.

III. Additional Information

14. Please indicate the status of any consultation that has occurred to date, including whether there are any unresolved concerns or issues the ACHP should know about in deciding whether to participate in consultation. Providing a list of consulting parties, including email addresses and phone numbers if known, can facilitate the ACHP's review response.

The anticipated mitigation resolution with GFPSD would involve constructing a physical and digital exhibit of the historic property as part of the new school facility.

Grand Forks Air Force Base
Grand Forks Public School District
North Dakota Historic Society
OLDCC

15 Does your agency have a website or website link where the interested public can find out about this project and/or provide comments? Please provide relevant links:

Our Grand Forks AFB public website does not currently depict the project, but the Environmental Assessment and associated documents will be shared on the public website once available as completed.

Economic and Environmental Information

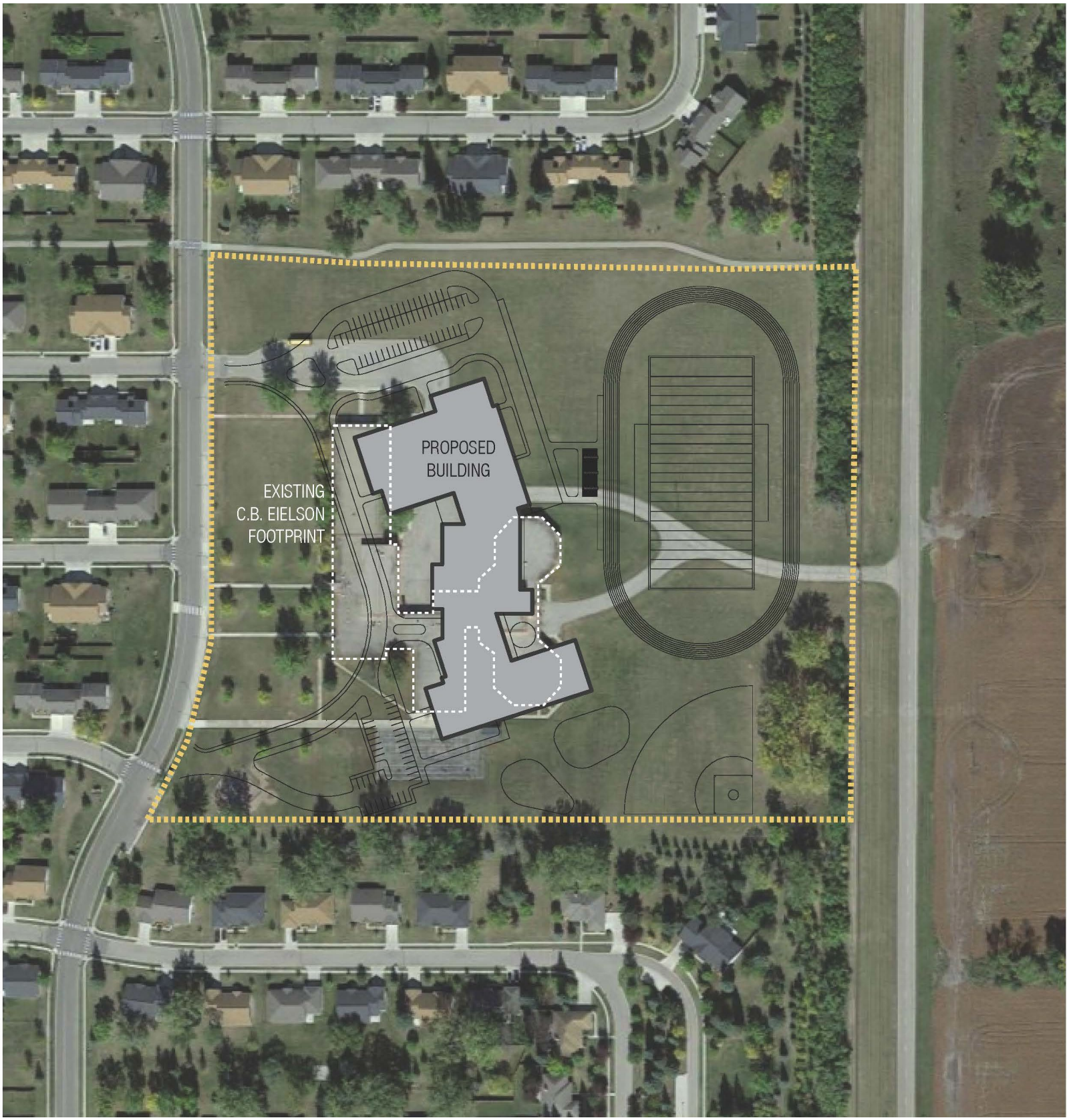
16. Is this undertaking considered a "major" or "covered" project listed on the Federal Infrastructure Projects Permitting Dashboard? If so, please provide the link:

The project is not listed as "major" or "covered" on the infrastructure projects permitting Dashboard.

The following are attached to this form (check all that apply):

- ☒ Section 106 consultation correspondence
- ☒ Maps, photographs, drawings, and/or plans
- ☒ Additional historic property information
- ☒ Consulting party list with known contact information
- ☐ Other: Click here to enter text.


Attachment 1
Area of Potential Effect
Grand Forks Public School Demolition and Construction, Grand Forks Air Force Base
Area of Potential Effect (38 Acres)
Roads
Buildings
Grand Forks Air Force Base Boundary
Turtle River
Nathan Twining Elementary and Middle School
Proposed for Demolition
Vacant Carl Ben Eielson School
Proposed for Demolition &
Construction Site for New Campus
Dorm Pond
Grand Forks AFB
Lagoons
Steen Blvd
Main Gate
Eielson St
To City of Grand Forks
US HWY 2
South Gate
Emerado
0
0.25
0.5 Miles
N



Attachment 2: New School Construction Footprint
Carl Ben Eielson Area

N

0 100 200 Feet

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
Phone: (701) 250-4481 Fax: (701) 355-8513

In Reply Refer To: 03/06/2025 22:51:48 UTC
Project Code: 2025-0065530
Project Name: Grand Forks Schools EA Project Site

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

To Whom It May Concern:

Section 7 of the Endangered Species Act
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.
The Act requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service *if they determine their project and associated actions "may affect" listed species or critical habitat*. If Federal agencies or their non-federal representatives determine their project and associated actions will have "no effect" on listed species, their habitats, or designated critical habitat, consultation is not required. However, if a "no effect" is determined, we recommend that you maintain a written record in support of your conclusion.
Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act
Additionally, while not all are listed as threatened or endangered, eagles and migratory birds

have protections under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). The BGEPA prohibits take which is defined as, “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb” (50 CFR 22.3). Disturb is defined in regulations as, “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”. The MBTA makes it unlawful without a waiver to pursue, hunt, take, capture, kill, or sell birds listed as migratory birds, including eagles. The statute does not discriminate between live or dead birds and also grants full protection to any bird parts including feathers, eggs, and nests.

Service Property Interests

As part of the National Wildlife Refuge System, the Service administers fee title Refuge and Waterfowl Production Areas, as well as wetland and grassland easements, throughout North Dakota. For exact locations of Service interest lands, please contact the appropriate Wetland Management Districts (WMD) for guidance regarding FWS easements.

Northwest ND WMD Complex: Kyle Flanery, (701) 768-2548
Eastern ND WMD Complex: Dave Azure, (701) 285-3341
Central ND WMD Complex (also covers south and west): Todd Luke, (701) 442-5474

Attachment(s):

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

OFFICIAL SPECIES LIST

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

This species list is provided by:

North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
(701) 250-4481

PROJECT SUMMARY

Project Code: 2025-0065530
Project Name: Grand Forks Schools EA Project Site
Project Type: Military Development
Project Description: School project site locations for the Grand Forks Schools EA
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@47.954784599999996,-97.3668318610958,14z

Counties: Grand Forks County, North Dakota

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

---

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

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Suckley's Cuckoo Bumble Bee *Bombus suckleyi* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10885	Proposed Endangered
Western Regal Fritillary *Argynnis idalia occidentalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/12017	Proposed Threatened

CRITICAL HABITATS

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

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

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

WETLANDS

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

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

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Air Force
Name: Elyse Maurer
Address: 350 Hills Street
Address Line 2: Ste 112
City: Richland
State: WA
Zip: 99354
Email elyse.maurer@easbio.com
Phone: 5099441383

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Air Force

November 7, 2024

Ms. Kristen Rundquist
319 CES/CEIE
Grand Forks AFB, ND 58205
kristen.rundquist@us.af.mil

ND SHPO Ref.: 24-9033 GFAFB Public School Replacement in portions of [T152N R53W Section 24] in Grand Forks County, North Dakota

Dear Ms. Rundquist,

We reviewed ND SHPO Ref.: 24-9033, the proposed demolition of the Carl Ben Eielson Elementary School and Nathan F. Twining Elementary and Middle School and subsequent construction of a new Elementary and Middle School Campus. We concur that the Carl Ben Eielson Elementary School is eligible for listing in the National Register of Historic Places (NRHP) and that the Nathan F. Twining Elementary and Middle School is not eligible for listing in the NRHP. As a result, we further concur this project would result in an "Adverse Effect." We look forward to further consultation for the development of a Memorandum of Agreement.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Lorna Meidinger, Lead Historic Preservation Specialist at (701) 328-2089 or lbmeidinger@nd.gov

Sincerely,

for William D. Peterson PhD
State Historic Preservation Officer
(North Dakota)

24-9033

MILLE LACS BAND OF OJIBWE
DEPARTMENT OF NATURAL RESOURCES

Mr. Robert Greene, 319 CES/CENPL
525 Tuskegee Airmen Blvd
Grand Forks AFB, ND 58205

Re: Nathan Twining Elementary and Middle School

Thank you for the opportunity to comment on the above referenced project. It has been reviewed pursuant to the responsibilities given the Tribal Historic Preservation Officer (THPO) by the National Historic Preservation Act of 1966, as amended in 1992 and the Procedures of the Advisory Council on Historic Preservation (38CFR800).

The Mille Lacs Band THPO department has reviewed the project. At this time the Mille Lacs Band of Ojibwe would like to be consultations on said project

You may contact our Office (320) 532-7450 Cell (320)364-0058 if you have questions regarding our review of these projects. Please refer to the MLB-THPO Number as stated above in all correspondence with these projects.

Sincerely,

Tribal Historic Preservation Officer
Mille lacs Band of Ojibwe
43408 Oodena Drive
Onamia MN 56359

DISTRICT I
43408 Oodena Drive • Onamia, MN 56359
(320) 532-7439 • Fax (320) 532-7514

DISTRICT II
36666 State Highway 65 • McGregor, MN 55760
(320) 384-6240 • Fax (218) 768-3903

DISTRICT III
45749 Grace Lake Road • Sandstone, MN 55072
(218) 768-3311 • Fax (320) 384-6190

URBAN OFFICE
1404 E. Franklin Avenue • Minneapolis, MN 55404
(612) 872-1424 • Fax (612) 872-1257

February 16, 2024

Robert Greene
319 CES/CENPL
Grand Forks AVB
525 Tuskegee Airmen Blvd.
Grand Forks AFB, ND 58205

Re: GFAFB New Nathan Twining Elementary and Middle School in Grand Forks County

Dear Mr. Greene:

The North Dakota Department of Environmental Quality (Department) has reviewed the information concerning the above-referenced project received at the Department on February 5, 2024, with respect to possible environmental impacts.

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Projects disturbing one or more acres are required to have a permit to discharge stormwater runoff until the site is stabilized by the re-establishment of vegetation or other permanent cover. Further information on the stormwater permit may be obtained from the Department's website or by calling the Division of Water Quality at 701-328-5210. Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local stormwater management considerations are addressed.

4. All necessary measures must be taken to minimize the disturbance of any asbestos-containing material and to prevent any asbestos fiber release episodes. Any facility that is to be renovated or demolished must be inspected for asbestos. Notification of the Department's Division of Waste Management at 701-328-5166 is required before any demolition. Removal of any friable asbestos-containing material must be accomplished in accordance with Section 33.1-15-13-02 of the North Dakota Air Pollution Control Rules.

5. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

6. All solid waste materials must be managed and transported in accordance with the state's solid and hazardous waste rules. Appropriate efforts to reduce, reuse and/or recycle waste materials are strongly encouraged. As appropriate, segregation of inert waste from non-inert waste can generally reduce the cost of waste management. Further information on waste management and recycling is available from the Department's Division of Waste Management at 701-328-5166.

The Department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Director
North Dakota Department of Environmental Quality

LDG:ll
Attach.

Construction and Environmental Disturbance Requirements

The following are the minimum requirements of the North Dakota Department of Environmental Quality (Department) for projects that involve construction and environmental disturbance in or near waters of the State of North Dakota. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect waters of the state. All projects must be constructed to minimize the loss of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion and sediment loss using erosion and sediment controls. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, and land resources must be prohibited against compaction, vegetation loss and unnecessary damage.

Surface Waters

All construction must be managed to minimize impacts to aquatic systems. Follow safe storage and handling procedures to prevent the contamination of water from fuel spills, lubricants, and chemicals. Stream bank and stream bed disturbances must be contained to minimize silt movement, nutrient upsurges, plant dislocations, and any physical chemicals, or biological disruption. The use of pesticides or herbicides in or near surface waters is allowed under the Department's pesticide application permit with notification to the Department.

Fill Material

Any fill material placed below the ordinary high-water mark must be free of topsoil, decomposable materials, and persistent synthetic organic compounds, including, but not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill material. All temporary fills must be removed. Debris and solid waste must be properly disposed or recycled. Impacted areas must be restored to near original condition.

Jeannie Schultz

Sent:
To:
Cc:
Subject:

Ms. Schultz,
Ma'am,
Good morning,
Please see the response letter below.
Thank you,
Robert E. Greene, GS-11, DAFC
Environmental Protection Specialist
319 CES/CENPL
(701) 747-4664

From: Leonard Wabasha (TO) <leonard.wabasha@shakopeedakota.org>
Sent: Monday, February 12, 2024 9:53 AM
To: GREENE, ROBERT E CIV USAF ACC 319 CES/CENPL <robert.greene.13@us.af.mil>
Subject: [Non-DoD Source] Nathan Twining Elementary and Middle School

Dear Robert Greene
Thank you for your correspondence dated January 31, 2024 regarding the proposed construction of a new K-8 Campus to replace the Nathan Twining Elementary and Middle School. The Shakopee Mdewakanton Sioux Community chooses to leave direct consultation to the closer local area Ferally Recognized Tribes of the Grand Forks Air Base. Thank you for the opportunity to consult, Have a Great Day!

Respectfully,

LEONARD WABASHA
Director of Cultural Resources • Cultural Resources
Shakopee Mdewakanton Sioux Community
d: 952.496.6120
shakopeedakota.org
Leonard.Wabasha@shakopeedakota.org

The Shakopee Mdewakanton Sioux Community is a federally recognized, sovereign Indian tribe located southwest of Minneapolis/St. Paul. With a focus on being a good neighbor, good steward of the earth, and good employer, the SMSC is committed to charitable donations, community partnerships, a healthy environment, and a strong economy.

Jeannie Schultz

Sent:
To:
Subject:
Attachments:

Ms. Schultz,
Ma'am,
Please see the e-mail thread below in reference to the attached document.
Thank you,
Robert E. Greene, GS-11, DAFC
Environmental Protection Specialist
319 CES/CENPL
(701) 747-4664

-----Original Message-----
From: Effertz Hanson, Maria K. <meffertz@nd.gov>
Sent: Tuesday, February 6, 2024 11:17 AM
To: GREENE, ROBERT E CIV USAF ACC 319 CES/CENPL <robert.greene.13@us.af.mil>
Cc: Roehrich, Rikki L. <rroehrich@nd.gov>
Subject: [Non-DoD Source] FW: Scanned File

[You don't often get email from meffertz@nd.gov. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

The :Division of Community Service - North Daktoa Commerce has no objection to this proposal.

Maria Effertz
Director, Division of Community Services

701.328.5319 . meffertz@nd.gov .
https://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.nd.gov%2F&data=05%7C02%7CJeannie.Schultz%40ae2s.com%7Cb9e2181f41724d9ced0d08dc2bd17589%7Cb32addb5f43d4c2a8383dd63422a2655%7C0%7C0%7C638433427154130647%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=4uiEllNbwd0WwdQ%2Fvj1a%2FzFARb5FOPpej0Ru6jnfVe4%3D&reserved=0

701.595-4121 . meffertz@nd.gov . 1600 E. Century Ave. PO Box 2057 . Bismarck, ND 58503

-----Original Message-----

From: Commere Scanner <commerce@nd.gov>
Sent: Tuesday, February 6, 2024 8:27 AM
To: Effertz Hanson, Maria K. <meffertz@nd.gov>
Subject: Scanned File

Jeannie Schultz

Sent:
To:
Cc:
Subject:

Ms. Schultz,
Good afternoon,
Please see below.
Thank you,
Robert E. Greene, GS-11, DAFC
Environmental Protection Specialist
319 CES/CENPL
(701) 747-4664

From: Schumacher, John D. <jdschumacher@nd.gov>
Sent: Thursday, February 22, 2024 12:54 PM
To: GREENE, ROBERT E CIV USAF ACC 319 CES/CENPL <robert.greene.13@us.af.mil>
Subject: [Non-DoD Source] New Nathan Twining School Project -- Grand Forks AFB

Robert Greene
319 CES/CENPL

RE: New Nathan Twining Elementary and Middle School Project – Grand Forks Air Force Base

The North Dakota Game and Fish Department has reviewed this project for wildlife concerns. We do not believe it will have significant adverse effects on wildlife or wildlife habitat based on the information provided.

J.D. Schumacher
Resource Biologist

701.328.6321 • jdschumacher@nd.gov • gf.nd.gov

NORTH Dakota | Game and Fish
Be Legendary.™

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

6 June 2025

319 CES/CD
Mr. Gary D. Raknerud
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Mr. Michael Anderson
Commissioner
North Dakota State Water Commission
City Council Chambers
225 N 4th St
Grand Forks ND 58203

Dear Mr. Anderson

The United States Department of the Air Force (DAF) and the Grand Forks Air Force Base Public School District announce the availability of a *Draft Environmental Assessment for Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School at Grand Forks Air Force Base, North Dakota*. The Draft Environmental Assessment (EA) was prepared in accordance with the *National Environmental Policy Act* and the DAF's environmental impact analysis process.

The Proposed Action involves the demolition of the unused, vacant Carl Ben Eielson School, construction of a new Nathan Twining School campus, and demolition of the existing Nathan Twining Elementary and Middle School. Based on analysis in the Draft EA, no significant adverse impacts would be expected from the implementation of the Proposed Action. Accordingly, the DAF has prepared a Draft Finding of No Significant Impact to document the findings of the Draft EA.

An electronic copy of the documents for review and comment can be found at https://www.grandforks.af.mil/About-Us/Economic-and-Environmental-Information/. The DAF invites comments on these documents for a period of 30 days from the date of this notice: **7 July 2025**. Comments or inquiries may be sent via postal mail or email (preferred) to:

ATTN: Mr. Robert Greene
319 CES/CEIEC
525 Tuskegee Airmen Blvd.
Grand Forks AFB ND 58205-6434
Email: robert.greene.13@us.af.mil

Sincerely

RAKNERUD.GARY.D.1231323631 Digitally signed by RAKNERUD.GARY.D.1231323631 Date: 2025.05.05 11:26:01 -05'00'

GARY D. RAKNERUD, GS-13, DAF
Acting Deputy Base Civil Engineer

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

6 June 2025

319 CES/CD
Mr. Gary D. Raknerud
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Mr. Alonzo Denney
Chairman
Santee Sioux Nation, Nebraska
108 Spirit Lake Ave W.
Niobrara NE 68760

Dear Mr. Denney

The United States Department of the Air Force (DAF) and the Grand Forks Air Force Base Public School District announce the availability of a *Draft Environmental Assessment for Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School at Grand Forks Air Force Base, North Dakota*. The Draft Environmental Assessment (EA) was prepared in accordance with the *National Environmental Policy Act* and the DAF's environmental impact analysis process.

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ATTN: Mr. Robert Greene
319 CES/CEIEC
525 Tuskegee Airmen Blvd.
Grand Forks AFB ND 58205-6434
Email: robert.greene.13@us.af.mil

Sincerely

RAKNERUD.GARY.D.1231323631 Digitally signed by RAKNERUD.GARY.D.1231323631 Date: 2025.05.05 10:44:53 -05'00'

GARY D. RAKNERUD, GS-13, DAF
Acting Deputy Base Civil Engineer

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

6 June 2025

319 CES/CD
Mr. Gary D. Raknerud
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Mr. Andrew Clark
SHPO
State Historical Society of North Dakota
612 East Boulevard Ave
Bismarck ND 58505

Dear Mr. Clark

The United States Department of the Air Force (DAF) and the Grand Forks Air Force Base Public School District announce the availability of a *Draft Environmental Assessment for Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School at Grand Forks Air Force Base, North Dakota*. The Draft Environmental Assessment (EA) was prepared in accordance with the *National Environmental Policy Act* and the DAF's environmental impact analysis process.

The Proposed Action involves the demolition of the unused, vacant Carl Ben Eielson School, construction of a new Nathan Twining School campus, and demolition of the existing Nathan Twining Elementary and Middle School. Based on analysis in the Draft EA, no significant adverse impacts would be expected from the implementation of the Proposed Action. Accordingly, the DAF has prepared a Draft Finding of No Significant Impact to document the findings of the Draft EA.

An electronic copy of the documents for review and comment can be found at https://www.grandforks.af.mil/About-Us/Economic-and-Environmental-Information/. The DAF invites comments on these documents for a period of 30 days from the date of this notice: **7 July 2025**. Comments or inquiries may be sent via postal mail or email (preferred) to:

ATTN: Mr. Robert Greene
319 CES/CEIEC
525 Tuskegee Airmen Blvd.
Grand Forks AFB ND 58205-6434
Email: robert.greene.13@us.af.mil

Sincerely

RAKNERUD.GARY.D.1231323631 Digitally signed by RAKNERUD.GARY.D.1231323631 Date: 2025.05.05 11:29:30 -05'00'

GARY D. RAKNERUD, GS-13, DAF
Acting Deputy Base Civil Engineer

NORTH Dakota | Water Resources
Be Legendary.

June 30, 2025

Mr. Gary D. Raknerud

Department Of The Air Force
Headquarters 319TH Reconnaissance Wing (ACC)
Grand Forks Air Force Base, North Dakota
319 CES/CEIEC
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434
robert.greene.13@us.af.mil

Dear Mr. Raknerud,

This is in response to your request for a review of the environmental impacts associated with the Draft Environmental Assessment for Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School at Grand Forks Air Force Base, located in North Dakota.

The proposed project has been reviewed by Department of Water Resources (DWR), and the following comments are provided:

- There are no FEMA National Flood Insurance Program (NFIP) floodplains identified or mapped where the proposed project is to take place. No permits relative to the NFIP are likely required based on the current Flood Insurance Rate Map and State minimum standards. However, flood risk has been identified through the North Dakota Risk Assessment Mapservice and Base Level Engineering (BLE) (ndram.dwr.nd.gov). In the absence of FEMA NFIP data, BLE is often considered best available data and is recommended to be considered in the design process. The State of North Dakota has no formal NFIP permitting authority as all NFIP permitting decisions are considered by impacted NFIP participating communities, the community with zoning authority for the area in question. Please work directly with the local floodplain administrators of the zoning authorities impacted.

- Initial review indicates the project does not require a conditional or temporary permit for water appropriation. However, if surface water or groundwater will be diverted for construction of any future projects identified in the plan, a water permit will be required per North Dakota Century Code § 61-04-02. Please consult with the DWR Water Appropriation Division if you have any questions at (701) 328-2754 or appropinfo@nd.gov.

Thank you for the opportunity to provide review comments. Should you have further questions, please contact me at 701-328-4970 or kyrkoski@nd.gov.

Sincerely,

Kyle Yrkoski
Planner III

KY:mg/1570

APPENDIX B. MEMORANDUM OF AGREEMENT

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

319 CES/CD
Mr. Lance Landon
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Dr. Bill Peterson
State Historic Preservation Officer
State Historical Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Ave
Bismarck ND 58505

Dear Dr. Peterson

Grand Forks Air Force Base (GFAFB) with the Grand Forks Air Force Public School District (GFAFPSD) is proposing constructing a new school campus (PreK-8) on installation owned property and within existing public school leased areas of 38.56 acres. To do so, the two existing schools, Carl Ben Eielson (built 1959) and Nathan Twining (built 1961), will both be demolished. Carl Ben Eielson Elementary School (32GF3891), was determined eligible for the National Register of Historic Places under Criteria A and C by the Department of the Air Force (DAF) wherein the ND SHPO concurred with this finding (ND SHPO Ref.: 24-9033, Atch 1). The Advisory Council on Historic Preservation (ACHP) has been notified of the project and declines to participate in consultation at this time (ACHP Project Number: 021912; Atch 2). GFAFB and GFPSD have developed a draft memorandum of agreement (MOA) to resolve the adverse effects due to the destruction of the eligible historic property.

The proposed draft MOA (Atch 3) will mitigate the "adverse effect" by installing an exhibit in a high traffic area inside of the new school building. The proposed exhibit will include up to 70 feet of wall space and an approximately 11 feet wide display case; showcasing historic imagery, writing, and/or photographs as digital graphics or acrylic standoffs.

We seek comment and input on this undertaking with respect to Section 106 of the NHPA consultation with you as appropriate. If you have any questions, please contact Ms. Ayla Morehouse, Cultural Resource Manager, Ayla.morehouse@us.af.mil. Thank you in advance for your assistance in this effort and we look forward to hearing from you.

Sincerely

LANDON.LANCE.ERIC.1458635028

Digitally signed by LANDON.LANCE.ERIC.1458635028
Date: 2025.01.10 15:01:00 -06'00'

LANCE E. LANDON, GS-13, DAF
Deputy Base Civil Engineer

Attachments:
1. ND SHPO Ref.: 24-9033
2. ACHP Project Number: 021912
3. Draft MOA

cc: Grand Forks Air Force Public School District

Attachment 1

STATE HISTORICAL SOCIETY
OF NORTH DAKOTA

HISTORY FOR everyone.

November 7, 2024

Ms. Kristen Rundquist
319 CES/CEIE
Grand Forks AFB, ND 58205
kristen.rundquist@us.af.mil

ND SHPO Ref.: 24-9033 GFAFB Public School Replacement in portions of [T152N R53W Section 24] in Grand Forks County, North Dakota

Dear Ms. Rundquist,

We reviewed ND SHPO Ref.: 24-9033, the proposed demolition of the Carl Ben Eielson Elementary School and Nathan F. Twining Elementary and Middle School and subsequent construction of a new Elementary and Middle School Campus. We concur that the Carl Ben Eielson Elementary School is eligible for listing in the National Register of Historic Places (NRHP) and that the Nathan F. Twining Elementary and Middle School is not eligible for listing in the NRHP. As a result, we further concur this project would result in an "Adverse Effect." We look forward to further consultation for the development of a Memorandum of Agreement.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Lorna Meidinger, Lead Historic Preservation Specialist at (701) 328-2089 or lbmeidinger@nd.gov

Sincerely,

for William D. Peterson PhD
State Historic Preservation Officer
(North Dakota)

24-9033

North Dakota Heritage Center & State Museum
612 East Boulevard Avenue
Bismarck, ND 58505-0830

701.328.2666
histsoc@nd.gov

history.nd.gov
statemuseum.nd.gov

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH RECONNAISSANCE WING (ACC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

SEP 2 7 2024

Mr. Lance Landon
319 CES/CD
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Dr. Bill Peterson
State Historic Preservation Officer
State Historical Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Ave
Bismarck ND 58505

Dear Dr. Peterson

On 10 May 2024, the Department of the Air Force, Grand Forks Air Force Base (GFAFB) initiated 36 CFR §800 consultation with your office for the demolition of the Carl Ben Eielson Elementary School and Nathan F. Twining Elementary and Middle School and subsequent construction of a new Elementary and Middle School Campus (ND SHPO Ref.: 24-9033). Additionally, GFAFB initiated consultation with federally affiliated American Indian tribes available (Atch 1). We received a return letter from your office on 14 Jun 2024 concurring with the Area of Potential Effect (APE) and the determination that, due to previous disturbance, an archaeological survey was not required. At SHPO's request, an inadvertent discovery plan for the undertaking was provided and accepted (Atch 2). The Flandreau Santee Sioux Tribe and the Leech Lake Band of Chippewa both responded with interest in consultation related to inadvertent discoveries during ground disturbance.

The National Register of Historic Places (NRHP) evaluation and associated documentation of the two facilities located within the APE, the Carl Ben Eielson Elementary School and the Nathan F. Twining Elementary and Middle School is attached for your review (Atch 3). Based on the report, GFAFB has determined the Nathan F. Twining Elementary and Middle School (32GF3892) ineligible for listing on the NRHP due to lack of integrity, and the Carl Ben Eielson Elementary School (32GF3891) eligible for listing on the NRHP under Criteria A and C. We request your concurrence on these determinations as specified in 36 CFR §800.4(c)(2).

Based on the above determination, the proposed undertaking will result in an adverse effect to the Carl Ben Eielson Elementary School (32GF3891) and GFAFB requests your concurrence in this determination as specified in 36 CFR §800.5(d)(2). To resolve the adverse effect, GFAFB shall continue consultations with your office to develop a Memorandum of Agreement and invite the Advisory Council on Historic Preservation, the Grand Forks Public School District, the Office of Local Development Community Cooperation and affiliated American Indian Tribes to participate as appropriate.

Please send your comments and/or questions to Ms. Kristen Rundquist, 319 CES/CEIE, kristen.rundquist@us.af.mil. Thank you in advance for your assistance in this effort and we look forward to hearing from you.

Sincerely

LANCE E. LANDON, GS-13, DAF
Deputy Base Civil Engineer

Attachments:
1. Distribution List
2. Inadvertent Discovery Plan
3. Documentation of the Grand Forks Air Force Base Eielson Elementary School and Twining Elementary and Middle School in Grand Forks County, North Dakota

cc:
Grand Forks Public School District
Office of Local Defense Community Cooperation

December 19, 2024

Ayla Morehouse
Natural and Cultural Resources Manger
Department of the Air Force

Ref: *Demolition of School Facilities in the Grand Forks Public School District*
Grand Forks County, North Dakota
ACHP Project Number: 021912

Dear Ms. Morehouse:

On December 10, 2024, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the potential adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act, does not apply to this undertaking. Accordingly, we do not believe our participation in the consultation to resolve adverse effects is needed.

However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Should the undertaking's circumstances change, consulting parties cannot come to consensus, or you need further advisory assistance to conclude the consultation process, please contact us.

Pursuant to Section 800.6(b)(1)(iv), you will need to file the final Section 106 agreement document (Agreement), developed in consultation with the North Dakota SHPO and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the Agreement and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require our further assistance, please contact Katharine Cline at (202) 517-0225 or by e-mail at kcline@achp.gov and reference the ACHP Project Number above.

Sincerely,

Dana Daniels
Historic Preservation Technician
Office of Federal Agency Programs

MEMORANDUM OF AGREEMENT
BETWEEN
THE DEPARTMENT OF THE AIR FORCE, THE GRAND FORKS AIR FORCE BASE PUBLIC SCHOOL DISTRICT #140
AND THE
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE DEMOLITION OF THE CARL BEN EIELSON ELEMENTARY SCHOOL
GRAND FORKS AIR FORCE BASE, GRAND FORKS COUNTY, NORTH DAKOTA

WHEREAS, the Grand Forks Air Force Base Public School District No.140 (GFAFBPSD) proposes to demolish the current Carl Ben Eielson Elementary School (Eielson Elementary School) and construct a new PreK-8 school campus (hereinafter the "undertaking"); and

WHEREAS, the GFAFBPSD has an ownership interest in the Eielson Elementary School, SITS Number: 32GF3982, NDSHPO #: 24-9033, located at 1238 Louisiana St., Grand Forks Air Force Base, North Dakota 58204, and

WHEREAS, the Grand Forks Air Force Base (GFAFB) has jurisdiction over the undertaking and has determined that the undertaking would have an adverse effect upon the Eielson Elementary School, a property determined Eligible for listing in the National Register of Historic Places; and

WHEREAS, the Eielson Elementary School is Eligible for listing in the National Register in North Dakota (ND); and

WHEREAS, the GFAFB has consulted with the State Historical Society of North Dakota State Historic Preservation Office (NDSHPO), pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470), and N.D.C.C. § § 55-02 and 55-10; and

WHEREAS, GFAFB invited the potentially affected Federally recognized American Indian Tribes in letters dated 10MAY2024 and 1OCT2024. The Mille lacs Band of Ojibwe requested to be included in project consultation on 1MAR2024 after the Environmental Assessment notification. Three tribes, the Flandreau Santee Sioux Tribe (16MAY), the Leech Lake Band of Chippewa (3JUN), and Sisseton Wahpeton Oyate (22OCT) responded with interest in consultation related to any inadvertent discoveries during the undertaking; and

WHEREAS, in accordance with 36 CFR part 800.6 (a)(1), GFAFB and GFAFBPSD have notified the Advisory Council on Historic Preservation (ACHP) and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR part 800.6(a)(1)(iii) in an email dated 19DEC2024; and

WHEREAS, GFAFB, GFAFBPSC and the NDSHPO, have agreed on how the adverse effects will be resolved, and desire to formalize such resolution in writing in accordance with 36 CFR part 800.6(b)(iv).

NOW, THEREFORE, GFAFB, GFAFBPSD, and NDSHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on this Historic Property.

STIPULATIONS

I. Area of Potential Effects (APE)

GFAFB has determined that the undertaking's Area of Potential Effects (APE) involves the property comprising the Eielson Elementary School, located within the S ½ SE ¼ NE ¼ and N ½ NE ¼ SE ¼ in Section 25, T152N R53W, in Emerado, ND, which is more fully described as the Carl Ben Eielson Elementary School Site 32GF3891, a single-story school building with a poured concrete foundation, reinforced concrete block walls with orange brick veneer, and a flat roof.

II. MITIGATION STIPULATIONS

The GFAFBPSD will ensure that the following measures are carried out:

a. Eielson Elementary School is eligible for inclusion in the National Register of Historic Places with significance under Criterion "A" and Criterion "C". Under Criterion A, Eielson School is described as Mid-Century with progressive principles of design and classrooms constructed to engage contemporary pedagogical ideas and educational delivery with open spaces and flexible furniture. Under Criterion C Eielson Elementary is recommended as an intact example of a mid-century school and for its association with Grosz and Anderson. To mitigate the effects of demolishing the existing Eielson Elementary School, the GFAFBPSD shall design and create a historic exhibition in the planned new Nathan Twining School proposed to be constructed on the same location.

b. The exhibition will include elements of history recognizing the Eielson Elementary School, local community history, GFAFB history, and/or historic namesakes. The design for the proposed new school includes approximately 70 feet of free wall space in a high traffic area and a planned display case approximately 11 feet wide. This space would include historic imagery, writing, and/or photographs to provide information in a visibly accessible way for visitors, students, and staff as they are in the school for day-to-day education, work, or for special events. The exhibit would be designed with materials such as digital graphics or acrylic standoffs that are easy for the school to maintain and protect the longevity of the exhibit.

c. This agreement is binding on the future new school to be built and maintained by the GFAFBPSD. The GFAFBPSD will be responsible for maintaining the exhibition into the future including repair in the case of natural wear and tear, vandalism, and general repair.

d. The historic exhibition will be located in the same location as the original Eielson Elementary School located on the GFAFB in Grand Forks County, ND. The cost to design, construct, install, maintain, repair, and replace the historic exhibition will be included in the project cost for the new Twining Elementary and Middle School and be covered by the GFAFBPSD and its funding partners.

e. The GFAFBPSD is responsible for the historic exhibition in perpetuity.

f. GFAFB and GFAFBPSD shall submit a copy of this executed MOA along with any documentation required by 36 CFR part 800.11(f), to the ACHP prior to approving the undertaking in order to meet the requirements of section 106.

II. DURATION

This MOA will expire if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, GFAFBPSD may consult with the other signatories, invited signatories, and consulting parties to reconsider the terms of the MOA and amend it in accordance with Stipulation VII below.

III. MONITORING AND REPORTING

Each year by the annual anniversary of the execution of this MOA until it expires or is terminated, GFAFBPSD shall provide all parties to this MOA a summary report detailing work undertaken pursuant to the terms of this MOA. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes, and objections received in GFPSD's efforts to carry out the terms of this MOA.

IV. DISPUTE RESOLUTION

Should any signatory to this MOA object at any time to any actions proposed or the way the terms of this MOA are implemented, GFAFBPSD shall consult with such party to resolve the objection. If GFAFB determines that such objection cannot be resolved, GFAFB will:

a. Forward all documentation relevant to the dispute, including the GFAFB's proposed resolution, to the ACHP. The ACHP shall provide GFAFB with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, GFAFB shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. ACHP will then proceed according to its final decision.

b. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day period, GFAFB may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, GFAFB shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA and provide them and the ACHP with a copy of such written response.

V. DISCOVERIES

In the event of a subsequent discovery or identification of additional historic properties or historic artifacts are affected by the undertaking, the signatories to this MOA agree to discuss and come to an agreement in good faith of how to mitigate and resolve the adverse effects of the undertaking on any newly discovered historic properties or historic artifacts as a result of the undertaking to comply with the requirements of section 106 of the National Historic Preservation Act and N.D.C.C. § § 55-02 and 55-10.

VI. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date signed by all of the signatories is filed with the ACHP.

VII. TERMINATION

If any signatory or invited signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop and execute an amendment per Stipulation VII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment is not executed, any signatory may terminate this MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, GFAFB must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. GFAFB shall notify the signatories and invited signatories as to the course of action it will pursue.

VIII. COMPLIANCE

Execution of this MOA by the GFAFB and NDSHPO and implementation of its terms evince that GFAFB has taken into account the effects of the undertaking on historic properties and afforded the ACHP an opportunity to comment on Project Number 24-9033 and its effects on historic properties, and the ACHP has taken into account the effects of the undertaking on historic properties.

VIV. NOTICES

All notices, submissions, consents, demands, requests, or other communications which may or are required to be given hereunder to any Signatory shall be sent by (a) hand delivery (which shall be deemed to have been received upon delivery), (b) reputable overnight courier (which shall be deemed to have been received one business day after the date sent), (c) United States mail, registered or certified, return receipt requested, postage prepaid (which shall be deemed to have been received upon receipt by the sender of the return receipt), (d) facsimile, with a copy sent by reputable overnight courier (which shall be deemed to have been received when the sender receives a confirmation of successful transmission of the facsimile) or (e) electronic mail (which shall be deemed to have been received when the sender receives a confirmation of successful transmission). Such documents shall be sent to the signatories of this document on behalf of the agencies they represent:

- Grand Forks 319 Reconnaissance Wing Commanders Office
  460 Steen Blvd, Bldg. 307
  Grand Forks Air Force Base, ND 58205
- Grand Forks Public Schools
  District Office – Mark Sanford Education Center
  2400 47th Ave. S
  Grand Forks, ND 58201

- State Historic Preservation Office
  612 E Boulevard Ave.
  Bismarck, ND 58505

SIGNATORIES:

_____	_____
TIMOTHY A. MONROE, Colonel, USAF Commander, 319th Reconnaissance Wing	Date
_____	_____
Dr. TERRRY BRENNER, Superintendent Grand Forks Air Force Public School District	Date
_____	_____
Dr. BILL PETERSON, SHPO State Historical Society of North Dakota	Date

MEMORANDUM OF AGREEMENT
BETWEEN
THE DEPARTMENT OF THE AIR FORCE, THE GRAND FORKS AIR FORCE BASE PUBLIC SCHOOL DISTRICT #140
AND THE
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE DEMOLITION OF THE CARL BEN EIELSON ELEMENTARY SCHOOL
GRAND FORKS AIR FORCE BASE, GRAND FORKS COUNTY, NORTH DAKOTA

WHEREAS, the Grand Forks Air Force Base Public School District No.140 (GFAFBPSD) proposes to demolish the current Carl Ben Eielson Elementary School (Eielson Elementary School) and construct a new elementary school (hereinafter the "undertaking"); and

WHEREAS, the GFAFBPSD has an ownership interest in the Eielson Elementary School, SITS Number: 32GF3891, NDSHPO #: 24-9033, located at 1238 Louisiana St., Grand Forks Air Force Base, North Dakota 58204, and

WHEREAS, the Grand Forks Air Force Base (GFAFB) has jurisdiction over the undertaking and has determined that the undertaking would have an adverse effect upon the Eielson Elementary School, a property determined Eligible for listing in the National Register of Historic Places; and

WHEREAS, the Eielson Elementary School is Eligible for listing in the National Register in North Dakota (ND); and

WHEREAS, the GFAFB has consulted with the North Dakota State Historic Preservation Office (NDSHPO), pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470), and N.D.C.C. § 55-02 and 55-10; and

WHEREAS, GFAFB invited the potentially affected Federally recognized American Indian Tribes in letters dated 10MAY2024 and 1OCT2024. The Mille lacs Band of Ojibwe requested to be included in project consultation on 1MAR2024 after the Environmental Assessment notification. Three tribes, the Flandreau Santee Sioux Tribe (16MAY), the Leech Lake Band of Chippewa (3JUN), and Sisseton Wahpeton Oyate (22OCT) responded with interest in consultation related to any inadvertent discoveries during the undertaking; and

WHEREAS, in accordance with 36 CFR part 800.6 (a)(1), GFAFB and GFAFBPSD have notified the Advisory Council on Historic Preservation (ACHP) and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR part 800.6(a)(1)(iii) in an email dated [12/19/2024]; and ,

WHEREAS, GFAFB, GFAFBPSD and the NDSHPO, have agreed on how the adverse effects will be resolved, and desire to formalize such resolution in writing in accordance with 36 CFR part 800.6(b)(iv).

NOW, THEREFORE, GFAFB, GFAFBPSD, and NDSHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on this Historic Property.

STIPULATIONS

I. AREA of POTENTIAL EFFECTS (APE)

GFAFB has determined that the undertaking's Area of Potential Effects (APE) involves the property comprising the Eielson Elementary School, located within the S ½ SE ¼ NE ¼ and N ½ NE ¼ SE ¼ in Section 25, T152N R53W, in Emerado, ND, which is more fully described as the Carl Ben Eielson Elementary School Site 32GF3891, a single-story school building with a poured concrete foundation, reinforced concrete block walls with orange brick veneer, and a flat roof.

II. MITIGATION STIPULATIONS

The GFAFBPSD will ensure that the following measures are carried out:

a. Eielson Elementary School is eligible for inclusion in the National Register of Historic Places with significance under Criterion "A" and Criterion "C". Under Criterion A, Eielson School is described as Mid-Century with progressive principles of design and classrooms constructed to engage contemporary pedagogical ideas and educational delivery with open spaces and flexible furniture. Under Criterion C Eielson Elementary is recommended as an intact example of a mid-century school and for its association with Grosz and Anderson. To mitigate the effects of demolishing the existing Eielson Elementary School, the GFAFBPSD shall submit the design and content of the historical exhibit to GFAFB for ND SHPO review to ensure historical accuracy and appropriate representation of the site's significance. All parties to this MOA will review and provide comments within 30 days of draft exhibit design receipt, and any agreed upon revisions shall be addressed prior to GFAFBPSD acceptance of final building design and exhibit installation.

b. The exhibition will include elements of history recognizing the Eielson Elementary School, local community history, GFAFB history, and/or historic namesakes. The design for the proposed new schools includes approximately 70 feet of free wall space in a high traffic area and a planned display case approximately 11 feet wide. This space would include historic imagery, writing, and/or photographs to provide information in a visibly accessible way for visitors, students, and staff as they are in the school for day-to-day education, work, or for special events. The exhibit would be designed with materials such as digital graphics or acrylic standoffs that are easy for the school to maintain and protect the longevity of the exhibit.

c. This agreement is binding on the future new school to be built and maintained by the GFAFBPSD. The GFAFBPSD will be responsible for maintaining the exhibition into the future including repair in the case of natural wear and tear, vandalism, and general repair.

d. The historic exhibition will be located in the same location as the original Eielson Elementary School located on the GFAFB in Grand Forks County, ND. The cost to design, construct, install, maintain, repair, and replace the historic exhibition will be included in the project cost for the new Twining Elementary and Middle School and be covered by the GFAFBPSD and its funding partners.

e. The GFAFBPSD is responsible for the historic exhibition in perpetuity.

f. GFAFB and GFAFBPSD shall submit a copy of this executed MOA along with any documentation required by 36 CFR part 800.11(f), to the ACHP prior to approving the undertaking in order to meet the requirements of section 106.

III. DURATION

This MOA will expire if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, GFAFBPSD may consult with the other signatories, invited signatories, and consulting parties to reconsider the terms of the MOA and amend it in accordance with Stipulation VII below.

IV. MONITORING AND REPORTING

Each year by the annual anniversary of the execution of this MOA until it expires or is terminated, GFAFBPSD shall provide all parties to this MOA a summary report detailing work undertaken pursuant to the terms of this MOA. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes, and objections received in GFPSD's efforts to carry out the terms of this MOA.

V. DISPUTE RESOLUTION

Should any signatory to this MOA object at any time to any actions proposed or the way the terms of this MOA are implemented, GFAFBPSD shall consult with such party to resolve the objection. If GFAFB determines that such objection cannot be resolved, GFAFB will:

a. Forward all documentation relevant to the dispute, including the GFAFB's proposed resolution, to the ACHP. The ACHP shall provide GFAFB with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, GFAFB shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. ACHP will then proceed according to its final decision.

b. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day period, GFAFB may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, GFAFB shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA and provide them and the ACHP with a copy of such written response.

VI. DISCOVERIES

In the event of a subsequent discovery or identification of additional historic properties, or historic artifacts are affected by the undertaking, the signatories to this MOA agree to discuss and come to an agreement in good faith of how to mitigate and resolve the adverse effects to comply with the requirements of section 106 of the National Historic Preservation Act and N.D.C.C. § 55-02 and 55-10.

VII. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date signed by all of the signatories and once filed with the ACHP.

VIII. TERMINATION

If any signatory or invited signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop and execute an amendment per Stipulation VII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment is not executed, any signatory may terminate this MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, GFAFB must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. GFAFB shall notify the signatories and invited signatories as to the course of action it will pursue.

IX. COMPLIANCE

Execution of this MOA by the GFAFB and NDSHPO and implementation of its terms evince that GFAFB has taken into account the effects of the undertaking on historic properties and afforded the ACHP an opportunity to comment on Project Number 24-9033 and its effects on historic properties, and the ACHP has taken into account the effects of the undertaking on historic properties.

X. NOTICES

All notices, submissions, consents, demands, requests, or other communications which may or are required to be given hereunder to any Signatory shall be sent by (a) hand delivery (which shall be deemed to have been received upon delivery), (b) reputable overnight courier (which shall be deemed to have been received one business day after the date sent), (c) United States mail, registered or certified, return receipt requested, postage prepaid (which shall be deemed to have been received upon receipt by the sender of the return receipt), (d) facsimile, with a copy sent by reputable overnight courier (which shall be deemed to have been received when the sender receives a confirmation of successful transmission of the facsimile) or (e) electronic mail (which shall be deemed to have been received when the sender receives a confirmation of successful transmission). Such documents shall be sent to the signatories of this document on behalf of the agencies they represent:

- 319 CES/CEIEC
  525 Tuskegee Amn. Boulevard
  Grand Forks Air Force Base, ND 58205
- Grand Forks Public Schools
  District Office – Mark Sanford Education Center
  2400 47th Ave. S

Grand Forks, ND 58201

- State Historic Preservation Office
  612 E Boulevard Ave.
  Bismarck, ND 58505

SIGNATORIES:

TIMOTHY A. MONROE, Colonel, USAF
Commander, 319th Reconnaissance Wing

18Apr25
Date

DR. TERRY BRENNER, Superintendent
Grand Forks Air Force Public School District

3-26-25
Date

DR. WILLIAM D. PETERSON, State Historic Preservation Office
State Historical Society of North Dakota

3-7-25
Date

APPENDIX C. PUBLIC NOTICES

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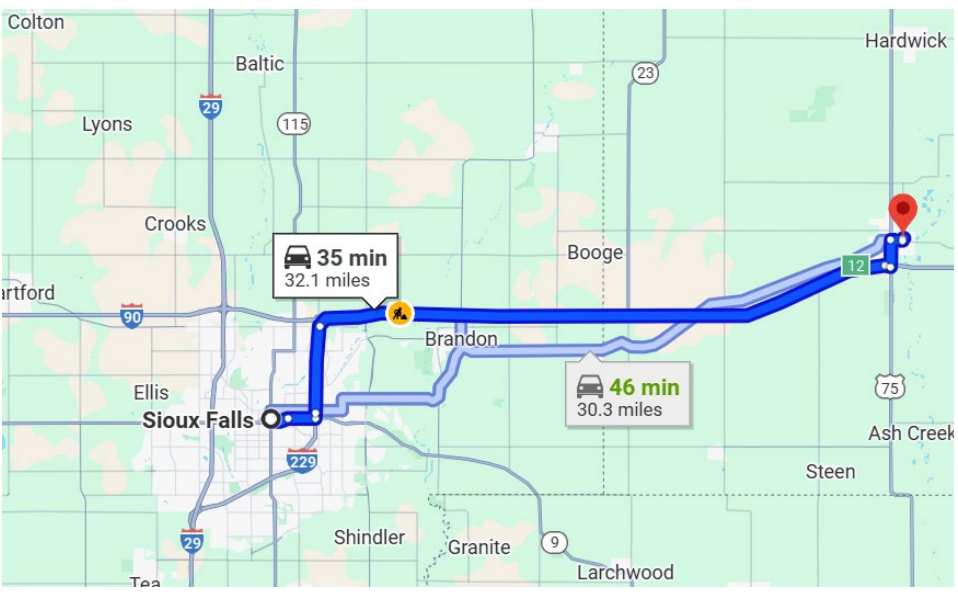

Image courtesy of Google Maps

A Google image map shows the estimated route Robinson would have taken with her likely captor from Sioux Falls to Luverne.

Key evidence unaccounted for in 1984 gravel pit slaying

BY TRISHA TAURINSKAS
Forum News Service

LUVERNE, Minn. — A pair of canvas shoes discovered along the shoreline of the rural Luverne gravel pit pond where Kelly Robinson's body was discovered in 1984 are missing.

The 22-year-old Sioux Falls resident's body was discovered on Memorial Day weekend by a family hiking in the remote area. The family first spotted her shoes, tossed along the pond's shoreline. Minutes later, they saw the body of a woman floating in the pond

The shoes, at this point, could be a critical part of the investigation — if their whereabouts were known.

"I do not know anything about the shoes," Rock County Sheriff's Deputy Chad Kempema told Forum News Service, adding that the Minnesota Bureau of Criminal Apprehension is actively helping with the case.

Advanced DNA technology has been successful in cases where items of clothing were left behind at crime and death scenes. That was the case for the 1974 homicide of Mary Schlais, whose body was left in a Wisconsin ditch. Her assailant was convicted in 2025 after a hat found on the scene detected his DNA.

It is not clear what — if any — evidence the Rock County Sheriff's Office has in their possession. When questioned about the evidence in Robinson's case, including potential evidence near the shoreline, Sheriff Evan Verbruggee repeatedly told Forum News Service that she was found in the water.

"Well, she was in the water, so from the reports that we've been able to locate, the body was just there," Verbruggee replied when questioned about physical evidence collected in the case. "So the crime didn't probably happen in Rock County. So it's kind of hard to determine what evidence is evidence with anything around that location."

Kempema said the sheriff's office has some recordings, including interviews, in its possession. And while other evidence should be in the office, the deputy said it is not. He then referred questions to Verbruggee.

Despite being found in the water, Robinson died of asphyxiation, according to the Bureau of Criminal Apprehension. That's contrary to initial reports which suggested she died from drowning.

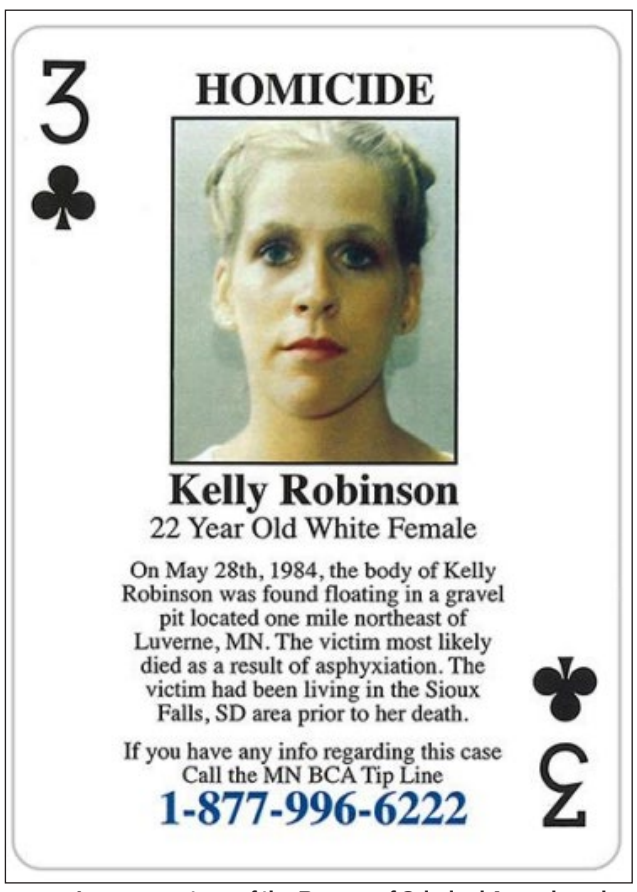

Image courtesy of the Bureau of Criminal Apprehension

Kelly Robinson's case was featured in the Minnesota cold case playing card initiative, designed to raise awareness about the state's unsolved cases.

Defensive wounds on her hands indicated she fought back. Initial reports were not able to conclusively state she was sexually assaulted. She was found wearing just her jeans and jacket — with nothing underneath.

The circumstances surrounding Robinson's death were suspicious, leading law enforcement to almost immediately declare the likelihood of foul play.

The area where Robinson's body was discovered was, at the time, only accessible to those willing to trudge through roughly 100 yards of tall grass and underbrush.

It was a remote area, unknown to even some locals, including Tim Connell, the Rock County attorney at the time.

"I was born and raised here," Connell told the Argus Leader in 1984. "This particular pond, I didn't even know it was there."

The location puzzled investigators — and Robinson's family members.

Robinson's medical condition wouldn't have allowed her to make the treacherous journey to the pond on her own. She was diagnosed with Multiple Sclerosis years before her body was discovered.

She didn't have any connection to the Luverne area, either.

Original image appeared in the Argus-Leader/Archive courtesy of Newspapers.com

An image of Kelly Robinson, the 22-year-old who was found dead in a Luverne, Minn. gravel pit in 1984, was featured in a 1984 edition of the Argus-Leader.

Robinson lived in Sioux Falls, a roughly 30-minute drive from where her body was found. Two witnesses said they saw Robinson leave the Frontier Bar with a man in a Ford Torino.

Shortly after Robinson's death, investigators said they believed they knew who was responsible: a man serving a 200-year sentence in South Dakota for violent sexual assaults. No evidence has been revealed that links this man to Robinson's death.

Her case remains unsolved.

Contact Taurinskas at ttaurinskas@forumcomm.com.

New Minn. measles cases confirmed, including child who had not traveled

BY KRISTI MILLER
St. Paul Pioneer Press

ST. PAUL — The Minnesota Department of Health has confirmed two more measles cases in the state, saying one case is concerning because officials can't trace a known exposure to the infectious disease, which could mean that the virus is spreading in the state.

The two new cases bring the state's total this year to four.

The new cases, which officials say are unrelated, were reported in the east Twin Cities metro area. One person in Washington County, whose vaccination status is unknown, was exposed during domestic air travel outside of the state. The second new case is the infection of an unvaccinated Dakota County child who has not traveled outside the state in the last month and has no known exposure to the disease.

Both are recovering at home.

"Anytime we confirm a case of measles unrelated to travel that has no known source, it is worrying," said Jessica Hancock-Allen, infectious disease division director at the health department. "This is because it could be a sign that measles is spreading in the community undetected by public health and health care systems. It is uncertain where the child was exposed and whether others may have been exposed."

The child was infectious while at the Mall of America theme park on Saturday, May 24. Disease investigators say anyone who was at the mall between 5 and 9 p.m. that day might have been exposed. Any symptoms would appear eight to 12 days after exposure, meaning in this case between May 31 and June 14, officials said. Symptoms include fever, cough, runny nose and watery eyes, followed a few days later by a rash that typically spreads from the head to the rest of the body.

Forum News Service file photo

Public health nurse Deb Floren shows a vial of the measles vaccine April 27, 2017, at the Kandiyohi County Health and Human Services Building in Willmar.

People who are unvaccinated or who have not had measles are most at risk and should watch for symptoms.

The state department of health is working with local health departments to reach anyone they believe may have been exposed to either person.

People who suspect they have measles should call their health care provider before going to a clinic to avoid exposing other people, officials said.

The best prevention is immunization. Children should receive two doses of measles, mumps and rubella (MMR) vaccine — first at 12 to 15 months of age and the second at 4 to 6 years of age.

Minnesotans who don't have health records or are unclear about their vaccination record can go to Find My Immunization Record at https://www.health.state.mn.us/people/immunize/miic/records.html. Most people born before 1957 have had measles and are considered immune.

Measles is highly contagious and can lead to hospitalization and even death. The virus can remain in the air for up to two hours after an infected person leaves an area.

Additional information about measles can be found on the MDH Measles website, https://www.health.state.mn.us/diseases/measles/index.html.

PUBLIC NOTICE

**NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL ASSESSMENT AND
PROPOSED FINDING OF NO SIGNIFICANT IMPACT
FOR THE PROPOSED CONSTRUCTION OF A NEW
NATHAN TWINING SCHOOL AND DEMOLITION
OF THE EXISTING CARL BEN EIELSON SCHOOL
AND EXISITNG NATHAN TWINING
ELEMENTARY AND MIDDLE SCHOOL AT
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA.**

The United States Department of the Air Force (DAF) and the Grand Forks Air Force Base Public School District (GFAFBPSD) announce the availability of a Draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) evaluating potential impacts from GFAFBPSD's Proposed Action of the demolition of the unused, vacant Carl Ben Eielson School, construction of a new Nathan Twining School campus, and demolition of the existing Nathan Twining Elementary and Middle School.

The Draft EA, prepared in accordance with the National Environmental Policy Act (NEPA) and DAF NEPA implementing guidelines, evaluates potential effects of the Proposed Action and the No Action Alternative on the environment. Based on this analysis, the GFAFBPSD has prepared a proposed FONSI.

Printed copies of the Draft EA and proposed FONSI are available for review at the following locations:

Grand Forks Public Library
2110 Library Circle
Grand Forks, ND 58201

North Dakota State University Library
1201 Albrecht Boulevard
PO Box 6050
Fargo, ND 58108

University of North Dakota Legal Library
(Thormodsgard Law Library)
2968 2nd Ave, N Stop 9004
Grand Forks, ND 58202

Electronic copies of the documents are available on the Grand Forks Air Force Base website https://www.grandforks.af.mil/About-Us/Economic-and-Environmental-Information/. Members of the public are encouraged to submit comments within 30 days of the publication of this notice, 7 July 2025. Address comments to Mr. Robert Greene, 319 CES/CENPL, by email, robert.greene.13@us.af.mil.

Judge denies former deputy's bid to suppress evidence

BY TASHA CARVELL
The Forum

Daniel Heidbreder, a special agent with the North Dakoa Bureau of Investigation, testifies in Cass County court regarding former Cass County deputy Carson Quam, who is accused of possessing child sexual abuse material, on March 11.

Anna Paige / The Forum

Carson Quam, a former Cass County deputy accused of possessing child sexual abuse material, appears with his lawyer, Mark Friese, in Cass County Court on March 11.

FARGO — Evidence collected during a search of a former Cass County sheriff's deputy's home can be used in the state's child sexual abuse materials possession case against him, a Richland County judge ruled Monday, June 2.

Carson Quam filed amotion to suppress the evidence in the case in late January, four months after he resigned from the Cass County Sheriff's Office on Sept. 17, 2024, the day agents from the North Dakota Bureau of Criminal Investigation questioned him and searched his house for evidence after receiving a tip that Quam may be in possession of child sexual abuse materials. In December, Quam was charged with 10 felony counts of possessing the prohibited materials.

Because Quam was previously employed as a patrol deputy in Cass County, the North Dakota Supreme Court recused all East Central District judges due to potential conflicts and assigned Southeast District Judge Daniel Narum to preside over the felony case against Quam. Likewise, prosecutors from the Grand Forks County State's Attorney's Office are trying the case in lieu of attorneys from the Cass County State's Attorney's Office.

During a March hearing on the motion to suppress evidence, Quam's defense attorney Mark Friese said investigators leaned on "bold, unsupported allegations" which were "stale and vague" to make their case in the warrant application, and that there wasn't sufficient "nexus," or connection, between the evidence being sought and the house that was searched, therefore violating his client's Fourth Amendment right protecting him from unreasonable searches.

Dan Heidbreder, a special agent with the North Dakota Bureau of Criminal Investigation, testified at the hearing that Quam admitted to searching for pornography involving teenage girls on his work-issued cellphone and watching links from websites that included sexual material involving 15- and 16-year-old girls. Quam also admitted to watching videos involving teenage girls on an internet-enabled television at his home, but "he could not recall if the 15 or 16 year-old females were nude or engaged in sexual acts," court documents said.

Quam told Heidbreder he had downloaded a browser that allows for anonymous searches in order to hide his searches from his wife, but a forensic review of his work phone did not turn up any evidence the browser had ever been downloaded onto it, according to court documents.

In his order denying Quam's motion to suppress, Narum said investigators had sufficient and "logical" belief that evidence would be found in Quam's Casselton home based on Quam's own admissions during those interviews.

The judge noted that Quam's assertions to Heidbreder about the specific nature of the illicit material he had viewed after admitting to searching for sexual content involving teenage girls were "purposefully misleading" and that his "secretive behavior" in downloading the browser to hide his searches from his wife "was also relevant to SA Heidbreder's overall determination that there may be evidence of criminal activity in Defendant's residence."

Narum cited a Minnesota appeals court's opinion in his decision, which stated "the factors the issuing judge must consider in determining whether such a nexus exists include the nature of the crime, the nature of the items sought, the extent of the suspect's opportunity for concealment, and the normal inferences as to where the suspect would normally keep the items."

"Probable cause existed to support the warrant to search Quam's residence," Narum concluded.

As of Tuesday evening, no future hearings have been scheduled in the case.

Readers can reach Forum reporter Tasha Carvell at tcarvell@forumcomm.com.

MEETING ANNOUNCEMENT

Grand Forks School Board
Regular Meeting
Monday, June 9, 2025
6:00pm @ Mark Sanford Education Center
2400 47th Avenue South, Grand Forks

The Notice of Meeting /agenda is found at:
www.gfschools.org/school-boards/meetings

PUBLIC NOTICE

**NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL ASSESSMENT AND
PROPOSED FINDING OF NO SIGNIFICANT IMPACT
FOR THE PROPOSED CONSTRUCTION OF A NEW
NATHAN TWINING SCHOOL AND DEMOLITION
OF THE EXISTING CARL BEN EIELSON SCHOOL
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APPENDIX D. FORM 813

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS	*Report Control Symbol (RCS):* 23-118

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO *(Environmental Planning Function)*	2. FROM *(Proponent organization and functional address symbol)*	2a. TELEPHONE NO.
319 CES/CENPL	Non Air Force - Non-Federal Entity - Grand Forks Public Schools	(701) 746-2200

3. TITLE OF PROPOSED ACTION
Construct New K-8 Twinning School

4. PURPOSE AND NEED FOR ACTION *(Identify decision to be made and need date)*

1. What do you intend to accomplish and why is the action necessary?
Grand Forks School District shall construct a campus to replace Nathan Twining Elementary and Middle School. The campus will house up to 500 students and is expected to be approximately 110,000 - 130,000 square feet. Site work will include new parking, drop off lanes, and athletic fields. Work also includes demolition of existing Carl Ben Eielson school and construction of a new school within the current out-leased land area on Grand Forks AFB, ND. Following this construction, the Grand Forks School District will demolish the existing Nathan Twining Elementary and Middle School and return the out-leased area back to the Air Force.
This action is necessary to meet current and projected enrollment. Constructed in the early 1960s, the two schools met a much higher enrollment demand. Following the personnel drawdowns in early 2000s, the School District shuttered the Carl Ben Eielson school—with all K-8 students attending the Twining school. In addition to rightsizing, the educational systems have evolved beyond what these 60-year-old schools can provide. The campus shall conform to the new construction and educational standards.

2. What is currently being done to meet the need?
Due to the lower school enrollment, the Grand Forks School District combined all K-8 students into one 60-year-old facility while the sister school remains vacant.

3. Provide any additional details related to the Purpose and Need for Action.
Nathan Twining Elementary and Middle School has a Q-4 rating which puts the building in "Failing Condition" with a Condition Index of 50%. The campus does not have air conditioning, the plumbing fixtures and piping date back to 1961, Ground Fault Circuit Interrupt are not present in required locations, and the facility has structural issues. In addition, the classrooms cannot hear fire alarms and the facility does not meet current security requirements.

Need Date: 07/21/2023

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) *(Provide sufficient details for evaluation of the total action.)*

1. What other alternatives have been considered (to include the no action alternative)?
1. No Action
2. Renovation of Existing Building.
3. Construction of new facility in Sunflake housing area.

2. What alternatives were eliminated from consideration and why?
1. No Action: The existing facilities do not meet construction and educational standards. If the "No Action" is pursued, the students will be subject to the maladies outlined in Section 4, paragraph 3. Furthermore, if the School District does not plan/program/design the new campus it will miss the opportunity to secure matching government funds set aside for these projects.
2. Renovation of Existing Building. The cost to replace the school's failing systems is $22.3M, more than half the plant replacement value. This would still not correct the structural or security concerns.
3. Construction of new facility in Sunflake housing area. Construction of a new facility across from County Road B-3 (off-base and across from the main gate), would provide access to the facility by the educational and servicing staff. It would also allow interschool activities with area K-8 schools and school districts without having to secure base access. This alternative is eliminated due to the increased safety risk to children riding their bikes off-base to attend school.

3. Please provide a description of the construction action and timing when it will occur.
Upon approval of the federal grant and the School District's ability to secure matching funds the demolition and construction would begin in the Spring of 2024. Following the new campus' construction, the existing Twining School demolition is set for Spring of 2025.

4. Describe the project location. Attach map(s)/diagram(s) – make sure to include an overview map of where your requested project area is on the installation.
See the attached map.

5. Describe additional project requirements: 1) Construction and site preparation requirements (include approx. area of ground to be disturbed); 2) Does the project require a laydown yard or storage area? If so, describe the location and groundwork required.
The School District will confine all construction activities to the existing out-leased area.

6. Describe additional project requirements: 3) Will soil boring/sampling/potholing occur during a design phase? If so, a separate dig permit will be required; 4) Detailed operational activities; 5) Equipment/material lists.
The School District will confine all construction activities to the existing out-leased area.

7. Provide any additional details related to the Description of the Proposed Action and Alternatives.

Map Attachments:
Eielson Twining Location Map.pdf

Location Description / Justification:
East side of Grand Forks AFB Military Family Housing Area (see attached map) on Grand Forks Public School District out-leased grounds.

6. PROPONENT APPROVAL *(Name and Grade)*	6a. SIGNATURE	6b. DATE
Greene Robert DOD - robert.e.greene3	Submitted on behalf of: Brenner, Terry Civilian (tbrenner270@mygfschools.org - (701) 746-2200) //Greene Robert DOD - robert.e.greene3 i:0e.t|fedvis|robert.e.greene3//	06/26/2023

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY *(Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)*	**+**	**0**	**-**	**U**
7. AIR INSTALLATION COMPATIBLE LAND USE/ZONE USE *(Noise, accident potential, encroachment, etc.)*		**X**		
8. AIR QUALITY *(Emissions, Attainment status, state implementation plan, etc.)*				**X**
9. WATER RESOURCES *(Drinking water, wastewater, quality, quantity, source, water features, etc.)*				**X**
10. SAFETY AND OCCUPATIONAL HEALTH *(Asbestos/lead-based paint/radiation/chemical exposure, explosives safety quantity distance, bird/wildlife aircraft hazard, etc.)*				**X**

11. HAZARDOUS MATERIALS/WASTE *(Use/storage/generation, solid waste, toxic materials, etc.)*	**x**
12. BIOLOGICAL RESOURCES *(Wetlands/floodplains, threatened or endangered species, etc.)*	**x**
13. CULTURAL RESOURCES *(Burial sites, archaeological, historical, etc.)*	**x**
14. GEOLOGY AND SOILS *(Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*	**x**
15. SOCIOECONOMIC *(Employment/population projections, school and local fiscal impacts, etc.)*	**x**
16. OTHER *(Potential impacts not addressed above, such as Host Nation considerations/concerns for non-US locations.)*	**x**

SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

17.
- ○ PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # ; OR
- ◉ PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS

Due to the nature of this action, to demolish a sixty-year-old schoolhouse and the construction of a new facility on the same site, the proponent must conduct an Environmental Assessment to address "unknown" impacts listed in this document. With this project on USAF property, out-leased to the Grand Forks Public School System, the 319 Civil Engineer Squadron, Installation Management Flight will work with the proponent to assist the coordination with the State Historic Preservation Officer and the Native Tribes (under the 106 Notification requirements), as required under the Environmental Assessment.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION *(Name and Grade)*	19a. SIGNATURE	19b. DATE
Landon, Lance GS-13	//Landon Lance DOD - lance.e.landon i:0e.t|fedvis|lance.e.landon//	07/19/2023

AF IMT 813, 199990901, V1

THIS FORM CONSOLIDATES AF FORMS 813 AND 814.
PREVIOUS EDITIONS OF BOTH FORMS ARE OBSOLETE.

CONTINUATION SHEET

Review Comments:

Safety and Occupational Health (06/26/2023 - Swenson Andrew DOD - andrew.e.swenson)
NSTR-26 Jun 2023

Other (06/26/2023 - Habeck William DOD - william.a.habeck)
Real Property - Concur, no comments

AFCEC Restoration (06/27/2023 - Olderbak Lawrence DOD - lawrence.r.olderbak)
No comments

AICUZ/Land Use (06/28/2023 - Slivnik Kyle DOD - kyle.s.slivnik)
1. Will the Project produce excessive noise? In various stages of construction, noise levels will be elevated but should remain within acceptable levels. Restricting construction to daylight hours would limit detrimental noise.

2. Are there any sensitive receptors within the increased noise zones? If construction takes place at the Carl Ben Eielson site, no. When school is in session, the Nathan Twining site would be considered a sensitive receptor.

3. Will the effects of the Project require changes to the surrounding land use outside the installation boundaries? No.

4. Will the Project increase the potential for encroachment concerns? No.

5. Will installation airspace, range, military training route airspace, special use airspace or uncontrolled airspace be affected and/or require modification? No.

Other (06/28/2023 - Liberman Yia DOD - yia.y.liberman)
No comments.

Water Resources (06/30/2023 - Klaus Christopher DOD - christopher.j.klaus)
1. Will a new or modified National Pollutant Discharge Elimination System (NPDES), or HN equivalent, permit be required? No.

2. Would the Project require permitting to discharge effluents into an existing body of water? Project will require Constructin Stormwater Permit for it's duration.

3. Would the Project impact any existing body of water, floodplain or jurisdictional wetland? Project should not have impact as long as the construction coplies with permit requierments.

4. Are there downstream sedimentation or storm water-born pollution issues that may be impacted by implementing the Project? Very slight chace during construction. See answer to #3.

5. Will the Project comply with the installation's Storm Water Pollution Prevention Plan or require a modification? It will comply. It will need a Constructin Stormwater permit only for the duration of project.

6. Does the installation drain to an impaired water body and would the Project have the potential to create excessive runoff, sedimentation, and/or erosion as a result of implementing the Project? The installatin does drain to an impaired water body. Project area does not. See answer to #3.

7. Would the Project have the potential to adversely affect/require mods or substantial changes to installation or community groundwater, wastewater, storm water or other natural or manmade water systems to accommodate regulated wastewater pollutants? No.

8. Does the installation lack sustainable and adequate potable and process water supplies to support the Project? No.

Hazardous Materials/Waste (07/06/2023 - Solarski James DOD - james.a.solarski)
Contractors Must comply with North Dakota Administrative Code; Chapter 33.1-15-13, AHERA 40 CFR, part 763, EPA National Emission Standard for Asbestos 40 CFR Part 61 Subpart M, OSHA 29CFR 1926.1101, DOT 49 CFR part 173, sub part J, in the inspection, removal, transportation and disposal of Asbestos Waste.

Natural Resources (07/11/2023 - Rundquist Kristen DOD - kristen.a.rundquist)

1. Would the Project potentially impact caves, faults, geothermal vents, mineral resources or any other geologic feature? No. There are no such features on GFAFB.

Cultural Resources (07/11/2023 - Rundquist Kristen DOD - kristen.a.rundquist)
1. Does the Project involve ground disturbance, construction, demolition or other effects that may impact significant historic buildings or structures, or does it create noise, dust, odors, light, or other disturbances to the existing cultural environment? Unknown. A cultural survey to needs to be accomplished to determine any potential impacts to historic resources if present.

2. Are the cultural areas of concern subject to potential impacts within the boundaries of the Project?
Unknown. A cultural survey to needs to be accomplished to determine any potential impacts to historic resources if present.

3. Are there Memoranda of Agreement (MOA) or Programmatic Agreements (PA) in affect within the areas of concern? No.

4. Will identified historic properties be potentially impacted by the Project?
Unknown. A cultural survey to needs to be accomplished to determine any potential impacts to historic resources if present.

5. Are there any historic properties (i.e. archaeological sites or buildings/structures/districts eligible for the National Register) that may be impacted by the Project?
Unknown. A cultural survey to needs to be accomplished to determine any potential impacts to historic resources if present.

Biological Resources (07/11/2023 - Rundquist Kristen DOD - kristen.a.rundquist)
1. Would the Project impact any plants or animals that are listed or candidates for threatened, unique, rare or endangered status? There are no federally threatened or endangered species on the AFB property.

2. Will there be any impacts from the construction of the Project on any types of critical, sensitive or unique habitats to include floodplains, wetlands, vernal pools, etc.? No, there are no wetlands in the project footprint.

3. Would there be any potential impacts to Threatened or Endangered species (TES) from implementing the Project's construction, operation and/or maintenance activities? No, there are no federally threatened or endangered species in the project footprint.

4. Are there any surveyed federal- or state-listed TES within the Project's region of influence? Yes, there are some some state bird species of concern that may occassional use the adjacent grassed areas in housing. However, the housing areas provides similar, if not better, habitat for any species of concern with many existing urban trees along with shelterbelt screens of shrubs and trees.

Air Quality (07/11/2023 - Rundquist Kristen DOD - kristen.a.rundquist)
1. Will the Project create criteria pollutant and/or hazardous air pollutant emissions during construction and or operations? Yes, project construction and demolition actions will create fugitive dust and any asphalting will create temporary hazardous air pollutants. Other criteria or hazardous pollutants from operations are likely as heating or energy sources for emergency power may be requirements of the project construction. Air Quality is considered good and the area is in attainment for all criteria pollutants.

2. Will implementation of the Project require the issuance of a new or modified air permit? Grand Forks AFB will not be seeking a new or modified air permit for construction of a school. Any air equipment purchased and installed for the new school will be owned real property of the Grand Forks Public School (GFPS) system and GFPS will also be responsible for proper maintenance and permitting of any new sources. There is potential for GFPS to obtain air quality permits depending on the number, size and capacity of sources required for the project.

3. Has the Project been analyzed in Air Conformity Applicability Model (ACAM)? Attach the ACAM report. No. GFPS is responsible for the air pollution they generate. Additionally, an ACAM report is not required as GFAFB is in attainment and the state of ND has supremacy for Air Quality NAAQs, not EPA.

4. Will the Project include source(s) that may be classified as a New Source or a major modification of an existing source? Yes, potentially for GFPS depending on the size and capacity of the source(s) designed and installed. Any new sources installed will not be the real property of GFAFB.

5. Will mitigation, emissions control devices and/or other management practices be required to minimize or eliminate effects to the region's air quality condition with regard to attainment of National Ambient Air Quality Standards (NAAQS)? No, the area is in attainment.

Bioenvironmental (07/13/2023 - Cheyne Cody DOD - cody.p.cheyne)
If contractors plan on bringing density guages (i.e., Troxler) onto GFAFB, notify the Installation Radiation Safety Officer (IRSO)/Bioenvironmental Engineering for approval.

No other concerns from Bioenvironmental Engineering.

Tanks (07/13/2023 - Raknerud Gary DOD - gary.d.raknerud)

1. Will the Project require a new and/or replacement of a tank(s)?
We do not anticipate the need for a new tank or replacement tank under this project. I highly expect that the demolition of the existing schools will need to include the removal of existing underground stoarage tanks used for heating fuel. The removal of exiting tanks must be IAW ND Dept of Environmental Quality rules. NDAC CHAPTER 33.1-24-08. A site investigation will also be required

2. Will the Project require the relocation of a tank(s)?
No existing tanks will need to be relocated

Hazardous Materials/Waste (07/13/2023 - Raknerud Gary DOD - gary.d.raknerud)
1. Would the Project require the use of new or different hazardous or toxic substances that may come in contact with the surrounding environment?
No new hazardous materials are expected to be in contact with the environment as a result of this contract.

2. Would mission personnel be required to use hazardous or toxic materials to implement the Project?
No, this project will be completed by contractors of GF School District

3. If renovation is to occur, has the building been surveyed for asbestos-containing material (ACM)? Coordinate with the Toxics Program POC on whether ACM is present, and if the renovation and disposal will be conducted IAW ACM regulations.
A full/comprehensive asbestos survey must be completed and provided to NDDEQ via Demo Notice, prior to any demolition can begin

4. Does the Project have the potential to generate hazardous materials and/or waste?
Demolition will generate non-hazardous construction debris, and has the potential to generate regulated waste, eg, asbestos, fuel contaminated soil etc.

5. Would the Project require issuance of new or modified solid waste and/or hazardous waste related permit?
No waste/ hazardous waste permits will be required

6. If renovation is to occur, lead base paint (LBP) may be present. Coordinate with the Toxics Program POC accordingly.
Concur, lead-based paint may be present and must be managed IAW NDDEQ rules

7. Does the Project require hazardous waste to be collected and stored on the property?
No hazardous waste generation is expected. Any regulated waste generated will be the responsibility of the contractor to store and dispose. No regulated waste generated from this action may be disposed on GFAFB

8. Does the Project increase potential risks for explosion, spill or the release of hazardous materials or waste?
There is no increased spill or explosion risk associated with this project.

9. Any wastes characterized as Universal (lamps, batteries, etc.) or Hazardous waste must be properly disposed of by the contractor in accordance with (IAW) all federal & state regulations.
Universal wastes are the responsibility of the contractor and must be disposed of off-site IAW NDDEQ rules.

Legal (07/19/2023 - Cheyne Rachel DOD - rachel.a.cheyne)
I have reviewed the subject action and find it legally sufficient subject to the following recommendation below.

Regarding Air Quality and ACAM report: Even where conformity is not applicable, the Air Force must quantify projected emissions. Otherwise, from a NEPA standpoint, there has been no assessment of the likely impacts. On the AF IMT 813 provided, the proponent notes there will be no impacts to air quality. We recommend the EPF provide documentation of the AQIA accomplished. See AFMAN 32-7002, para 4.4.5.1.

Greenhouse gases: In January 2023, CEQ issued interim guidance regarding greenhouse gas (GHG). The public comment period for the change recently closed out and CEQ's finalization or revision incorporating public comments is still pending. In March 2023, the AFCEC issued an air quality information memorandum, recommending agencies use the rule of reason in their GHG emissions analysis. The Air Force is working on on guidance to help installations work through GHG analysis on EIAP documenation. When conducting GHG emissions analysis for EIAP documenation, I recommend using the rule of reason in determing how much analysis is required given the potential the proposed construction and domolition have to impact GHG emissions.

Subject to the above recommendations, the document and supporting documentation includes enough facts and analysis to make a decision on the proposed action. Once the above recommendations are implemented, the document will also be complete and accurate.

Attachments:
Replacement of Failing Systems.pdf

APPENDIX E. AIR QUALITY ANALYSIS

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

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

a. Action Location:

Base: GRAND FORKS AFB
State: North Dakota
County(s): Grand Forks
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School

c. Project Number/s (if applicable):

d. Projected Action Start Date: 9 / 2025

e. Action Description:

The Proposed Action would involve a three-step sequential process: 1) demolition of the unused, vacant Carl Ben Eielson School, 2) construction of a new Nathan Twining School campus (Figure 2-1), and 3) demolition of the existing Nathan Twining Elementary and Middle School. The new Nathan Twining School campus would include a new school, parking, drop-off lanes, and an athletic field. The new approximately 100,000 ft2, two-story school would be constructed to accommodate up to 500 students and would incorporate flexibility to support evolving mission requirements and potential growth beyond 30 years. The existing Nathan Twining Elementary and Middle School would remain in use throughout the demolition of Carl Ben Eielson School and construction of the new Nathan Twining School campus. Upon completion of the new campus, the existing Nathan Twining Elementary and Middle School would be demolished.

f. Point of Contact:

Name: Ryan Sauter
Title: Project Manager
Organization: EAS
Email: ryan.sauter@easbio.com
Phone Number: 651.341.9955

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

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (hsba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (hsba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.102	250	No
NOx	0.935	250	No
CO	1.059	250	No
SOx	0.002	250	No
PM 10	9.883	250	No
PM 2.5	0.035	250	No
Pb	0.000	25	No
NH3	0.001	250	No

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.332	250	No
NOx	2.871	250	No
CO	3.234	250	No
SOx	0.007	250	No
PM 10	52.655	250	No
PM 2.5	0.106	250	No
Pb	0.000	25	No
NH3	0.002	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.514	250	No
NOx	1.262	250	No
CO	1.679	250	No
SOx	0.003	250	No
PM 10	0.043	250	No
PM 2.5	0.040	250	No
Pb	0.000	25	No
NH3	0.002	250	No

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.492	250	No
NOx	1.092	250	No
CO	1.504	250	No
SOx	0.003	250	No
PM 10	4.907	250	No
PM 2.5	0.035	250	No
Pb	0.000	25	No
NH3	0.002	250	No

2029 - (Steady State)

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

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Ryan Sauter, Project Manager — Feb 21 2025

Name, Title — **Date**

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: GRAND FORKS AFB
State: North Dakota
County(s): Grand Forks
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School

- Project Number/s (if applicable):

- Projected Action Start Date: 9 / 2025

- Action Purpose and Need:

The purpose of the Proposed Action is to provide safe and secure school facilities, utilizing funding specifically authorized by Public Law 117-328, Section 8108, Consolidated Appropriations Act of 2023, that support, rather than detract, from a positive learning environment and that can grow over the next 30 years to support the increase in personnel and their dependents associated with GFAFB's and GrandSKY Business Park's growing missions. Under Public Law 114-328, the Office of Local Defense Community Cooperation (OLDCC) executes assistance on behalf of the US Department of Defense (DoD) to support the design, site preparation, and construction of schools on the Public Schools on Military Installations prioritized list; Nathan Twining Elementary and Middle School is number 70 on this list. Using funds provided by OLDCC, the updated facilities would meet current anti-terrorism/force protection (AT/FP) standards, would have the capacity to accommodate approximately 500 students, and would adhere to functional safety standards such as heating, cooling, and facility upgrades and repairs. Since Carl Ben Eielson School was closed in 2014, Nathan Twining Elementary and Middle School has been the sole operational GFAFBPSD school on GFAFB.

The Proposed Action is needed because the current Nathan Twining Elementary and Middle School is not structurally sound, does not meet GFAFB AT/FP security standards for an educational facility, and does not have the capacity to support an increase in GFAFB personnel and their dependents. In 2018, a facility condition assessment report (FCAR) was conducted to evaluate the existing Nathan Twining Elementary and Middle School. The FCAR determined that the facility had a rating of Q4, the lowest FCAR rating, indicating that the building is in poor condition. The FCAR revealed multiple building systems that were in disrepair beyond the ability to repair and/or renovate (Grand Forks School District [GFSD]), 2018a).

- Action Description:

The Proposed Action would involve a three-step sequential process: 1) demolition of the unused, vacant Carl Ben Eielson School, 2) construction of a new Nathan Twining School campus (Figure 2-1), and 3) demolition of the existing Nathan Twining Elementary and Middle School. The new Nathan Twining School campus would include a new school, parking, drop-off lanes, and an athletic field. The new approximately 100,000 ft2, two-story school would be constructed to accommodate up to 500 students and would incorporate flexibility to support evolving mission requirements and potential growth beyond 30 years. The existing Nathan Twining Elementary and Middle School would remain in use throughout the demolition of Carl Ben Eielson School and construction of the new Nathan Twining School campus. Upon completion of the new campus, the existing Nathan Twining Elementary and Middle School would be demolished.

- Point of Contact

Name: Ryan Sauter
Title: Project Manager
Organization: EAS
Email: ryan.sauter@easbio.com
Phone Number: 651.341.9955

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Demolition of Carl Ben Eielson School
3.	Construction / Demolition	Construciton of new Nathan Twinning School
4.	Construction / Demolition	Demolition of old Nathan Twinning School

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Grand Forks
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Demolition of Carl Ben Eielson School

- Activity Description:
Demolition of the 70,300 sq ft Ben Eielson School. Demolition of 94,778 sq ft of pavement. Grading 480,000 sq ft of land.

- Activity Start Date
Start Month: 9
Start Month: 2025

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2025

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.101922
SO_x	0.001957
NO_x	0.934966
CO	1.059363

Pollutant	Total Emissions (TONs)
PM 10	9.883075
PM 2.5	0.034744
Pb	0.000000
NH_3	0.000955

- Activity Emissions of GHG:

Pollutant	Total Emissions (TONs)
CH_4	0.008792
N_2O	0.001735

Pollutant	Total Emissions (TONs)
CO_2	220.972416
CO_2e	221.708933

- Global Scale Activity Emissions for SCGHG:

Pollutant	Total Emissions (TONs)
CH_4	0.008792
N_2O	0.001735

Pollutant	Total Emissions (TONs)
CO_2	220.972416
CO_2e	221.708933

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 4
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 70300
Height of Building to be demolished (ft): 20

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

2.1.3 Demolition Phase Emission Factor(s)

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

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43930	0.00743	3.63468	4.34820	0.10060	0.09255
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37086	0.00491	3.50629	2.90209	0.15396	0.14165
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19600	0.00489	2.00960	3.48168	0.07738	0.07119

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02333	0.00467	575.01338	576.98668
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02159	0.00432	532.17175	533.99803
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.86270	531.68105

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.21885	0.00192	0.11847	3.49967	0.00602	0.00533	0.02349
LDGT	0.20678	0.00249	0.19865	3.75842	0.00773	0.00684	0.02534
HDGV	0.69470	0.00583	0.81515	12.98961	0.02804	0.02481	0.05050
LDDV	0.09140	0.00097	0.07977	2.80889	0.00250	0.00230	0.00803
LDDT	0.08424	0.00113	0.11564	1.90199	0.00290	0.00267	0.00848
HDDV	0.10982	0.00417	2.30657	1.42194	0.03847	0.03539	0.03197
MC	1.93027	0.00259	0.76572	12.96621	0.02372	0.02099	0.05591

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01811	0.00428	289.27835	291.00195
LDGT	0.01890	0.00575	375.18356	377.36671
HDGV	0.05922	0.02331	877.18405	885.60004
LDDV	0.05276	0.00060	290.19953	291.69483
LDDT	0.03898	0.00084	337.52514	338.74888
HDDV	0.03123	0.00273	1242.00383	1243.59637
MC	0.09758	0.00249	389.81517	392.99746

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Construction Exhaust Emissions per Phase

CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL}* 0.002205) / 2000

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 2
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 480000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

2.2.3 Site Grading Phase Emission Factor(s)

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

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.40191	0.00542	3.44643	4.21104	0.10704	0.09848
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.33951	0.00490	2.85858	3.41896	0.15910	0.14637
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.29762	0.00487	2.89075	3.51214	0.17229	0.15851
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37086	0.00491	3.50629	2.90209	0.15396	0.14165
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.20447	0.00489	1.90932	1.57611	0.07394	0.06803
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19600	0.00489	2.00960	3.48168	0.07738	0.07119

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.13772	589.15263
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02155	0.00431	531.19419	533.01712
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02141	0.00428	527.74261	529.55369
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02159	0.00432	532.17175	533.99803
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02146	0.00429	528.94235	530.75755
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.86270	531.68105

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.21885	0.00192	0.11847	3.49967	0.00602	0.00533	0.02349
LDGT	0.20678	0.00249	0.19865	3.75842	0.00773	0.00684	0.02534
HDGV	0.69470	0.00583	0.81515	12.98961	0.02804	0.02481	0.05050
LDDV	0.09140	0.00097	0.07977	2.80889	0.00250	0.00230	0.00803
LDDT	0.08424	0.00113	0.11564	1.90199	0.00290	0.00267	0.00848
HDDV	0.10982	0.00417	2.30657	1.42194	0.03847	0.03539	0.03197
MC	1.93027	0.00259	0.76572	12.96621	0.02372	0.02099	0.05591

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01811	0.00428	289.27835	291.00195
LDGT	0.01890	0.00575	375.18356	377.36671
HDGV	0.05922	0.02331	877.18405	885.60004
LDDV	0.05276	0.00060	290.19953	291.69483
LDDT	0.03898	0.00084	337.52514	338.74888
HDDV	0.03123	0.00273	1242.00383	1243.59637
MC	0.09758	0.00249	389.81517	392.99746

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

3. Construction / Demolition

3.1 General Information & Timeline Assumptions

- Activity Location
County: Grand Forks
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Construciton of new Nathan Twinning School

- Activity Description:
61,000 sq ft of commercial construction, 2 stories.. 125,000 sq ft of paving, 876,000 sq ft of grading, and 4,250 linear ft of trenching. Import 2,500 CY of fill

- Activity Start Date
Start Month: 5
Start Month: 2026

- Activity End Date
Indefinite: False
End Month: 7
End Month: 2028

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.279955
SO_x	0.011075
NO_x	4.714146
CO	5.732934

Pollutant	Total Emissions (TONs)
PM 10	52.719175
PM 2.5	0.164644
Pb	0.000000
NH_3	0.004810

- Activity Emissions of GHG:

Pollutant	Total Emissions (TONs)
CH_4	0.047338
N_2O	0.009564

Pollutant	Total Emissions (TONs)
CO_2	1169.937571
CO_2e	1173.970413

- Global Scale Activity Emissions for SCGHG:

Pollutant	Total Emissions (TONs)
CH_4	0.047336
N_2O	0.009563

Pollutant	Total Emissions (TONs)
CO_2	1169.914156
CO_2e	1173.946867

3.1 Site Grading Phase

3.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 5
Start Quarter: 1
Start Year: 2026

- Phase Duration

Number of Month: 6
Number of Days: 0

3.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 876000
Amount of Material to be Hauled On-Site (yd^3): 2500
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.1.3 Site Grading Phase Emission Factor(s)

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

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.39317	0.00542	3.40690	4.22083	0.09860	0.09071
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.31292	0.00490	2.52757	3.39734	0.14041	0.12918
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.28160	0.00487	2.73375	3.50416	0.15811	0.14546
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.35280	0.00491	3.22260	2.72624	0.14205	0.13069
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19606	0.00488	1.74061	1.53912	0.06788	0.06245
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02381	0.00476	587.02896	589.04350
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02153	0.00431	530.81500	532.63663
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.54121	529.35159
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.54993	534.37751
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02145	0.00429	528.85412	530.66901
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.70686	531.52468

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.19940	0.00188	0.10475	3.31997	0.00599	0.00530	0.02279
LDGT	0.18765	0.00244	0.16392	3.50222	0.00759	0.00671	0.02471
HDGV	0.63495	0.00585	0.72168	12.16753	0.02639	0.02334	0.05015
LDDV	0.08569	0.00093	0.06891	2.51545	0.00242	0.00223	0.00803
LDDT	0.07511	0.00111	0.09706	1.79304	0.00285	0.00262	0.00848
HDDV	0.09947	0.00407	2.16111	1.37496	0.03213	0.02956	0.03184
MC	1.92758	0.00259	0.76373	12.82052	0.02373	0.02099	0.05626

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01682	0.00414	282.52693	284.17867
LDGT	0.01693	0.00550	367.56373	369.62343
HDGV	0.05463	0.02300	881.12707	889.33611
LDDV	0.05039	0.00060	279.16513	280.60104
LDDT	0.03849	0.00084	332.53038	333.74201
HDDV	0.03094	0.00273	1215.34414	1216.93092
MC	0.09622	0.00248	389.92401	393.06975

3.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

3.2 Trenching/Excavating Phase

3.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2026

- Phase Duration
Number of Month: 1
Number of Days: 0

3.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 25500
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.2.3 Trenching / Excavating Phase Emission Factor(s)

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

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.39317	0.00542	3.40690	4.22083	0.09860	0.09071
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.45335	0.00542	3.58824	4.59368	0.11309	0.10404
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02381	0.00476	587.02896	589.04350
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02385	0.00477	587.87714	589.89459
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.70686	531.52468

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.19940	0.00188	0.10475	3.31997	0.00599	0.00530	0.02279
LDGT	0.18765	0.00244	0.16392	3.50222	0.00759	0.00671	0.02471
HDGV	0.63495	0.00585	0.72168	12.16753	0.02639	0.02334	0.05015
LDDV	0.08569	0.00093	0.06891	2.51545	0.00242	0.00223	0.00803
LDDT	0.07511	0.00111	0.09706	1.79304	0.00285	0.00262	0.00848
HDDV	0.09947	0.00407	2.16111	1.37496	0.03213	0.02956	0.03184
MC	1.92758	0.00259	0.76373	12.82052	0.02373	0.02099	0.05626

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01682	0.00414	282.52693	284.17867
LDGT	0.01693	0.00550	367.56373	369.62343
HDGV	0.05463	0.02300	881.12707	889.33611
LDDV	0.05039	0.00060	279.16513	280.60104
LDDT	0.03849	0.00084	332.53038	333.74201
HDDV	0.03094	0.00273	1215.34414	1216.93092
MC	0.09622	0.00248	389.92401	393.06975

3.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

3.3 Building Construction Phase

3.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 8
Start Quarter: 1
Start Year: 2026

- Phase Duration
Number of Month: 21
Number of Days: 0

3.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 61900
Height of Building (ft): 30
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

3.3.3 Building Construction Phase Emission Factor(s)

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

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19758	0.00487	1.83652	1.63713	0.07527	0.06925
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.24594	0.00487	2.34179	3.57902	0.11182	0.10287
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.53947	0.00793	4.32399	2.85973	0.17412	0.16019
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18406	0.00489	1.88476	3.48102	0.06347	0.05839
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.46472	0.00735	3.57020	4.49314	0.09550	0.08786

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.46069	529.27080
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.09717	528.90603
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.32694	570.27730
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02149	0.00430	529.70686	531.52468
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.29068	570.24091

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.19940	0.00188	0.10475	3.31997	0.00599	0.00530	0.02279
LDGT	0.18765	0.00244	0.16392	3.50222	0.00759	0.00671	0.02471
HDGV	0.63495	0.00585	0.72168	12.16753	0.02639	0.02334	0.05015
LDDV	0.08569	0.00093	0.06891	2.51545	0.00242	0.00223	0.00803
LDDT	0.07511	0.00111	0.09706	1.79304	0.00285	0.00262	0.00848
HDDV	0.09947	0.00407	2.16111	1.37496	0.03213	0.02956	0.03184
MC	1.92758	0.00259	0.76373	12.82052	0.02373	0.02099	0.05626

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01682	0.00414	282.52693	284.17867
LDGT	0.01693	0.00550	367.56373	369.62343
HDGV	0.05463	0.02300	881.12707	889.33611
LDDV	0.05039	0.00060	279.16513	280.60104
LDDT	0.03849	0.00084	332.53038	333.74201
HDDV	0.03094	0.00273	1215.34414	1216.93092
MC	0.09622	0.00248	389.92401	393.06975

3.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

3.4 Architectural Coatings Phase

3.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

3.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 61900
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.4.3 Architectural Coatings Phase Emission Factor(s)

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.19940	0.00188	0.10475	3.31997	0.00599	0.00530	0.02279
LDGT	0.18765	0.00244	0.16392	3.50222	0.00759	0.00671	0.02471
HDGV	0.63495	0.00585	0.72168	12.16753	0.02639	0.02334	0.05015
LDDV	0.08569	0.00093	0.06891	2.51545	0.00242	0.00223	0.00803
LDDT	0.07511	0.00111	0.09706	1.79304	0.00285	0.00262	0.00848
HDDV	0.09947	0.00407	2.16111	1.37496	0.03213	0.02956	0.03184
MC	1.92758	0.00259	0.76373	12.82052	0.02373	0.02099	0.05626

- Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01682	0.00414	282.52693	284.17867
LDGT	0.01693	0.00550	367.56373	369.62343
HDGV	0.05463	0.02300	881.12707	889.33611
LDDV	0.05039	0.00060	279.16513	280.60104
LDDT	0.03849	0.00084	332.53038	333.74201
HDDV	0.03094	0.00273	1215.34414	1216.93092
MC	0.09622	0.00248	389.92401	393.06975

3.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

3.5 Paving Phase

3.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 3
Number of Days: 0

3.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 125160

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

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- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.5.3 Paving Phase Emission Factor(s)

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

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.55275	0.00855	4.19697	3.25556	0.16292	0.14989
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.21588	0.00486	2.33827	3.43520	0.10542	0.09699
Paving Equipment Composite [HP: 89] [LF: 0.36]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.16337	0.00488	1.88314	3.37709	0.05778	0.05316
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.50057	0.00542	3.50905	4.08429	0.13206	0.12150

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02314	0.00463	570.33256	572.28980
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02133	0.00427	525.89644	527.70118
Paving Equipment Composite [HP: 89] [LF: 0.36]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02141	0.00428	527.90982	529.72147
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.11688	589.13172

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.19940	0.00188	0.10475	3.31997	0.00599	0.00530	0.02279
LDGT	0.18765	0.00244	0.16392	3.50222	0.00759	0.00671	0.02471
HDGV	0.63495	0.00585	0.72168	12.16753	0.02639	0.02334	0.05015
LDDV	0.08569	0.00093	0.06891	2.51545	0.00242	0.00223	0.00803
LDDT	0.07511	0.00111	0.09706	1.79304	0.00285	0.00262	0.00848
HDDV	0.09947	0.00407	2.16111	1.37496	0.03213	0.02956	0.03184
MC	1.92758	0.00259	0.76373	12.82052	0.02373	0.02099	0.05626

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01682	0.00414	282.52693	284.17867
LDGT	0.01693	0.00550	367.56373	369.62343
HDGV	0.05463	0.02300	881.12707	889.33611
LDDV	0.05039	0.00060	279.16513	280.60104
LDDT	0.03849	0.00084	332.53038	333.74201
HDDV	0.03094	0.00273	1215.34414	1216.93092
MC	0.09622	0.00248	389.92401	393.06975

3.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

4. Construction / Demolition

4.1 General Information & Timeline Assumptions

- Activity Location
County: Grand Forks
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Demolition of old Nathan Twinning School

- Activity Description:
Demolition of 98,100 sq ft of structure, grade 448,000 sq ft of land.

- Activity Start Date
Start Month: 8
Start Month: 2028

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2028

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- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.057292
SO_x	0.001256
NO_x	0.511198
CO	0.684402

Pollutant	Total Emissions (TONs)
PM 10	4.886117
PM 2.5	0.016013
Pb	0.000000
NH_3	0.000986

- Activity Emissions of GHG:

Pollutant	Total Emissions (TONs)
CH_4	0.005712
N_2O	0.001097

Pollutant	Total Emissions (TONs)
CO_2	148.289377
CO_2e	148.758873

- Global Scale Activity Emissions for SCGHG:

Pollutant	Total Emissions (TONs)
CH_4	0.005712
N_2O	0.001097

Pollutant	Total Emissions (TONs)
CO_2	148.289377
CO_2e	148.758873

4.1 Demolition Phase

4.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 8
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 4
Number of Days: 0

4.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 98100
Height of Building to be demolished (ft): 20

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

4.1.3 Demolition Phase Emission Factor(s)

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

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37038	0.00743	3.34376	4.27147	0.05770	0.05308
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34206	0.00492	3.04082	2.66346	0.13374	0.12304
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17299	0.00489	1.74942	3.49553	0.04787	0.04404

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02330	0.00466	574.37549	576.34660
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02162	0.00432	532.85820	534.68684
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.56544	531.38277

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.19254	0.00183	0.09651	3.15599	0.00589	0.00521	0.02260
LDGT	0.17871	0.00240	0.14580	3.34682	0.00750	0.00664	0.02451
HDGV	0.60630	0.00586	0.64209	11.44795	0.02531	0.02239	0.04985
LDDV	0.08005	0.00090	0.05744	2.21818	0.00232	0.00213	0.00803
LDDT	0.06988	0.00110	0.08650	1.74269	0.00286	0.00263	0.00848
HDDV	0.09074	0.00397	2.03483	1.33328	0.02677	0.02463	0.03169
MC	1.92243	0.00259	0.76189	12.68549	0.02373	0.02099	0.05660

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01602	0.00406	276.06409	277.67191
LDGT	0.01582	0.00530	361.07402	363.04697
HDGV	0.05077	0.02171	882.49006	890.21900
LDDV	0.04799	0.00060	268.71355	270.08948
LDDT	0.03808	0.00084	328.46144	329.66277
HDDV	0.03071	0.00274	1185.75528	1187.33789
MC	0.09496	0.00248	390.02098	393.13521

4.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards ($1\ yd^3 / 27\ ft^3$)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

4.2 Site Grading Phase

4.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 1
Number of Days: 0

4.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 448000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

4.2.3 Site Grading Phase Emission Factor(s)

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

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.36597	0.00542	3.33858	4.22211	0.08125	0.07475
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.28126	0.00491	2.08618	3.41790	0.11550	0.10626
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.24470	0.00487	2.43300	3.48645	0.12364	0.11375
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34206	0.00492	3.04082	2.66346	0.13374	0.12304
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18502	0.00488	1.49320	1.50033	0.05914	0.05441
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17299	0.00489	1.74942	3.49553	0.04787	0.04404

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.54144	589.55773
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02155	0.00431	531.33158	533.15497
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02137	0.00427	526.92217	528.73043
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02162	0.00432	532.85820	534.68684
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02144	0.00429	528.60870	530.42275
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.56544	531.38277

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.19254	0.00183	0.09651	3.15599	0.00589	0.00521	0.02260
LDGT	0.17871	0.00240	0.14580	3.34682	0.00750	0.00664	0.02451
HDGV	0.60630	0.00586	0.64209	11.44795	0.02531	0.02239	0.04985
LDDV	0.08005	0.00090	0.05744	2.21818	0.00232	0.00213	0.00803
LDDT	0.06988	0.00110	0.08650	1.74269	0.00286	0.00263	0.00848
HDDV	0.09074	0.00397	2.03483	1.33328	0.02677	0.02463	0.03169
MC	1.92243	0.00259	0.76189	12.68549	0.02373	0.02099	0.05660

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01602	0.00406	276.06409	277.67191
LDGT	0.01582	0.00530	361.07402	363.04697
HDGV	0.05077	0.02171	882.49006	890.21900
LDDV	0.04799	0.00060	268.71355	270.08948
LDDT	0.03808	0.00084	328.46144	329.66277
HDDV	0.03071	0.00274	1185.75528	1187.33789
MC	0.09496	0.00248	390.02098	393.13521

4.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to estimate GHG emissions. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions analysis.

a. Action Location:

Base: GRAND FORKS AFB
State: North Dakota
County(s): Grand Forks
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Construction of a New Nathan Twining School and Demolition of the Existing Carl Ben Eielson School and Existing Nathan Twining Elementary and Middle School

c. Project Number/s (if applicable):

d. Projected Action Start Date: 9 / 2025

e. Action Description:

The Proposed Action would involve a three-step sequential process: 1) demolition of the unused, vacant Carl Ben Eielson School, 2) construction of a new Nathan Twining School campus (Figure 2-1), and 3) demolition of the existing Nathan Twining Elementary and Middle School. The new Nathan Twining School campus would include a new school, parking, drop-off lanes, and an athletic field. The new approximately 100,000 ft2, two-story school would be constructed to accommodate up to 500 students and would incorporate flexibility to support evolving mission requirements and potential growth beyond 30 years. The existing Nathan Twining Elementary and Middle School would remain in use throughout the demolition of Carl Ben Eielson School and construction of the new Nathan Twining School campus. Upon completion of the new campus, the existing Nathan Twining Elementary and Middle School would be demolished.

f. Point of Contact:

Name: Ryan Sauter
Title: Project Manager
Organization: EAS
Email: ryan.sauter@easbio.com
Phone Number: 651.341.9955

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year or 20 years beyond SS emissions year for aircraft operations related actions.

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (NO2). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison

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to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2025	200	0.00797553	0.00157355	201	68,039	No
2026	663	0.02692576	0.00543401	665	68,039	No
2027	272	0.01091817	0.0022007	273	68,039	No
2028	261	0.01028141	0.00203634	262	68,039	No
2029 [SS Year]	0	0	0	0	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2025	65,566,755	277,200	45,032	65,888,988
2026	65,566,755	277,200	45,032	65,888,988
2027	65,566,755	277,200	45,032	65,888,988
2028	65,566,755	277,200	45,032	65,888,988
2029 [SS Year]	0	0	0	0

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2025	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2027	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2028	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2029 [SS Year]	0	0	0	0

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (yGba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2025-2039	State Total	262,267,021	1,108,801	180,129	263,555,951
2025-2039	U.S. Total	20,545,816,716	102,507,647	6,002,831	20,654,327,193
2025-2039	Action	1,396	0.056101	0.011245	1,401
Percent of State Totals		0.00053241%	0.00000506%	0.00000624%	0.00053161%
Percent of U.S. Totals		0.00000680%	0.00000005%	0.00000019%	0.00000678%

Ryan Sauter, Project Manager — Feb 21 2025

Name, Title — **Date**