ENVIRONMENTAL ASSESSMENT OF IMPLEMENTATION OF THE INSTALLATION DEVELOPMENT PLAN AT BANGOR AIR NATIONAL GUARD BASE BANGOR, MAINE

DRAFT

Prepared for

101st Air Refueling Wing, Bangor, ME

Prepared by

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With Technical Assistance from

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ACRONYMS AND ABBREVIATIONS

°F	° Fahrenheit
§	section
101 ARW	101st Air Refueling Wing
ACM	asbestos-containing material
ADAL	additions or alterations
AFI	Air Force Instruction
AFOSH	Air Force Office of Safety and Health
AFPD	Air Force Policy Directive
ANG	Air National Guard
ANGB	Air National Guard Base
APE	Area of Potential Effect
AQCR	Air Quality Control Region
ARW	Air Refueling Wing
ASE	Aircraft Support Equipment
AST	above ground storage tank
AT/FP	Antiterrorism/Force Protection
B	building
BACTS	Bangor Area Comprehensive Transportation System
BASH	Bird/Wildlife Aircraft Strike Hazard
BGEPA	Bald and Golden Eagle Protection Act
BGS	below ground surface
BIA	Bangor International Airport
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMR	Code of Maine Rules
CO	carbon monoxide
CZMA	Coastal Zone Management Act
CWA	Clean Water Act
dB	decibel
dBA	decibels, A-weighted
DoD	Department of Defense

EA	Environmental Assessment
EBS	Environmental Baseline Survey
ECF	entry control facility
ECOM	External Combustion
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EM	Environmental Manager
EO	Executive Order
EPA	United States Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESQD	explosive safety quantity distance
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
GCR	General Conformity Rules
GHG	Greenhouse gas
HAP	Hazardous Air Pollutant
HASP	Health and Safety Plan
HWMP	Hazardous Waste Management Plan
ICOM	Internal Combustion
ICRMP	Installation Cultural Resources Management Plan
IDP	Installation Development Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
LBP	lead-based paint
MBTA	Migratory Bird Treaty Act
MCP	Maine Coastal Program
MDEP	Maine Department of Environmental Protection
MDIFW	Maine Department of Inland Fisheries & Wildlife
MEANG	Maine Air National Guard
ME SHPO	Maine State Historic Preservation Office
MMBtu/hr	million British thermal units per hour

MMP	Media Management Plan
MOA	Memorandum of Agreement
MSA	Munitions Storage Area
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOA	notice of availability
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NRPA	Natural Resources Protection Act
O_3	ozone
OSHA	Occupational Safety and Health Administration
OTHB	Over-the-Horizon Backscatter
Pb	lead
PCB	polychlorinated biphenyls
PFAS	per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PM	particulate matter
POL	petroleum, oil, and lubricants
PPE	personal protective equipment
PRL	potential release site
PSD	prevention of significant deterioration
QD	Quantity-Distance
RCRA	Resource Conservation and Recovery Act
SAT	Small Air Terminal
SF	square feet
SFHA	Special Flood Hazard Area
SFS	Security Forces Squadron
SHPO	State Historic Preservation Office

SIP	State Implementation Plan
SO_2	sulfur dioxide
SPRP	spill prevention response plan
SVP	significant vernal pool
SWH	Significant Wildlife Habitat
SWPPP	stormwater pollution prevention plan
SY	square yards
tpy	tons per year
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
USPS	U.S. Postal Service
UST	underground storage tank
WOTUS	Waters of the United States

Disclosure Statement

The National Guard Bureau (NGB) is providing this draft Environmental Assessment (EA) for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA-implementing regulations (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508), and the Air Force's NEPA-implementing regulations *Environmental Impact Analysis Process* (EIAP) (32 CFR Part 989). The EIAP requires that an opportunity be provided for public input on NGB decision-making, that the public be invited to offer inputs on alternative ways for NGB to accomplish its proposed action, and that comments be solicited on NGB's analysis of environmental effects. Public commenting enables NGB to make better-informed decisions. Submitted letters and other written or oral comments could be published in the EA. As required by law, NGB will address comments received in the EA and make them available to the public. Providing personal information with comments is voluntary. NGB will use any personal information provided only to identify the commenter's desire to make a statement during the public comment portion of any public meeting or hearing 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. Only the names of the individuals making comments, however, and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the final EA.

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1.0 INTRODUCTION

The National Guard Bureau (NGB) has prepared this Environmental Assessment (EA) to consider the potential consequences to the human and natural environments associated with a proposed action at the 101st Air Refueling Wing (101 ARW) of the Maine Air National Guard (MEANG), Bangor Air National Guard Base (ANGB), Bangor, ME. This EA also identifies applicable best management practices (BMPs) that would avoid or minimize effects resulting from implementing the Proposed Action or alternatives (to include the No Action Alternative).

The NGB has prepared this EA pursuant to the National Environmental Policy Act (NEPA) of 1969 (Title 42 United States Code [U.S.C.] §§ 4321–4347), Council on Environmental Quality (CEQ) Final Rule dated 16 July 2020, *Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act* (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508), and the Air Force's NEPA-implementing regulations *Environmental Impact Analysis Process* (EIAP) (32 CFR Part 989). CEQ Final Rule dated 20 April 2022, *National Environmental Policy Act Implementing Regulations Revisions*, amends certain provisions of the regulations that were modified in 2020. Revisions to the 2020 CEQ regulations update went into effect on May 20, 2022. The NGB is the lead agency for this NEPA analysis.

As described in 32 CFR Part 989, the NEPA process is intended to provide the Air Force planners and decision-makers with a meaningful review of environmental considerations associated with a given action. The analysis set forth in this EA allows the decision-makers to carefully balance the protection of these environmental resources while fulfilling the Air Force's essential roles, including national defense, and MEANG's mission to provide adequate training facilities in support of the military mission. Both environmental staff and military personnel within the MEANG were consulted and provided guidance on the development of this EA.

Per amendments to 10 U.S.C. § 10501, described in Department of Defense (DoD) Directive 5105.77, the NGB is a joint activity of the DoD. NGB serves as a channel of communication and funding between the Air Force and State Air National Guard (ANG) organizations in the 54 U.S. states, territories, and the District of Columbia. The National Guard Bureau Air Directorate (NGB-CF) oversees the NEPA process for ANG facilities, as required under NEPA, CEQ Regulations, and 32 CFR Part 989.

The Proposed Action is to adopt and implement the Bangor ANGB Installation Development Plan (IDP). The IDP, which was finalized in 2018, is the result of a comprehensive planning process and provides the 101 ARW with a planning, programming, and development strategy that addresses current and programmed mission deficiencies and opportunities at the base.

This EA provides a full analysis of the environmental effects that could potentially result from the proposed short-range facility improvement projects. It also provides sufficient information and analysis of the long-range facility improvement projects to the extent project specific information

is available so that future NEPA analyses that tier from this EA can effectively reference the broad analyses it presents. Future construction projects and other actions will undergo specific NEPA analyses as needed. In accordance with 40 CFR § 1501.11, a future NEPA document that tiers off this EA must include a finding that the conditions and environmental effects described in this EA are still valid and/or address any exceptions. Tiering can reduce or eliminate redundant and duplicative analyses and effectively address cumulative effects. Using subsequent tiered NEPA reviews for the long-term facility improvement projects would allow for a focused review at the appropriate level of NEPA analysis when specific details of project planning are available in the future.

Based on the analysis in this EA, the ANG will determine whether to issue a Finding of No Significant Impact (FONSI) and then proceed with the Proposed Action, issue a notice of intent (NOI) to prepare an environmental impact statement (EIS), or abandon the Proposed Action. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed projects, and the document must be available to inform decision makers of the potential environmental effects of selecting the Proposed Action, reasonable alternatives, or the No Action Alternative.

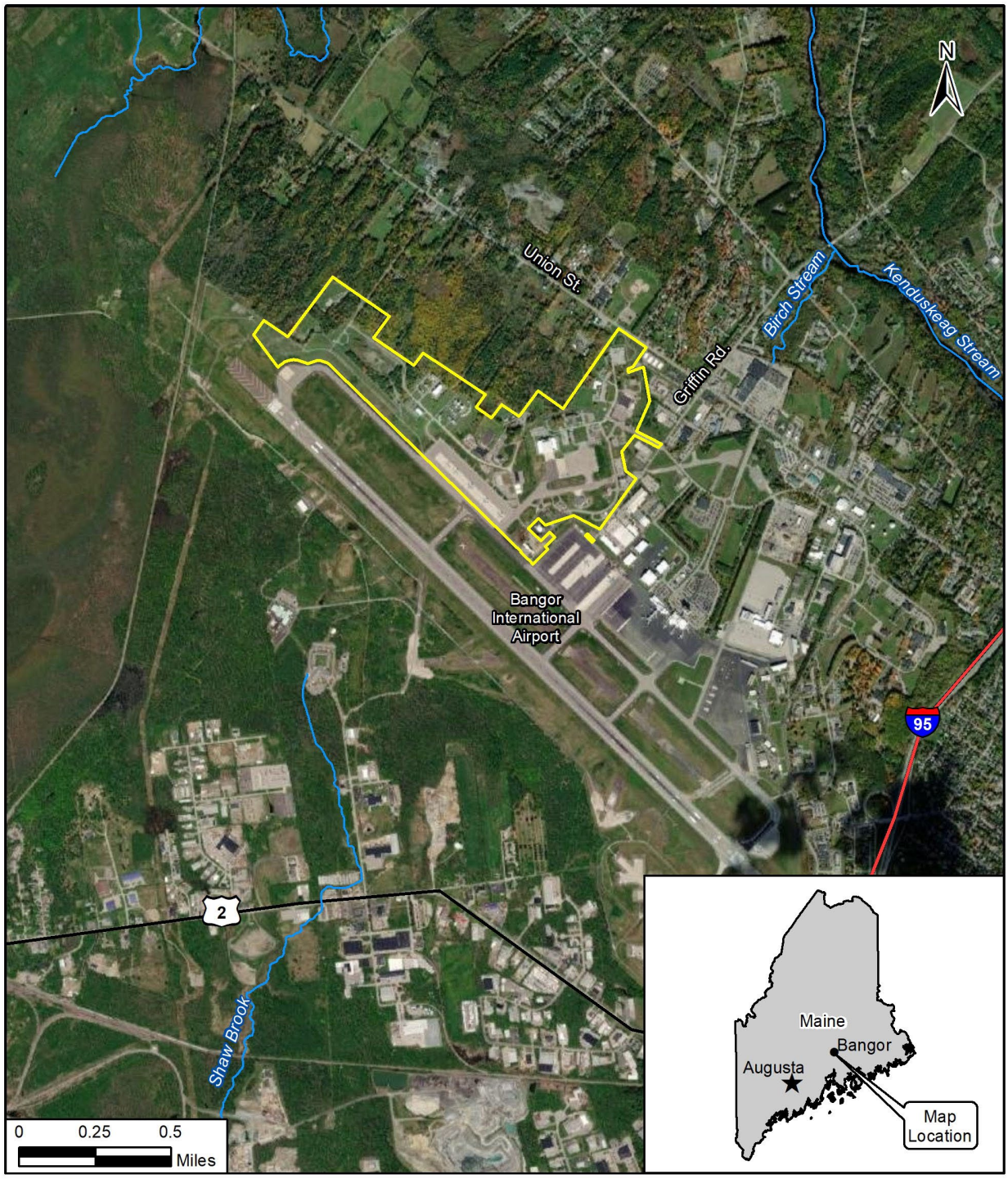
1.1 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to provide the 101 ARW with properly sized and configured facilities, infrastructure, and services outlined in the IDP that are needed to effectively accomplish its mission. The proposed construction and renovation projects, as well as the demolition of excess and inefficient structures, would conserve energy and resources through consolidation and modernization and are needed to enable the Bangor ANGB to maintain the level of readiness necessary to support its mission.

All the proposed IDP projects would meet the purpose of and need for the Proposed Action. The period of construction, demolition, and renovation activities for the short-range facility improvements would be approximately 5 years. Long-range facility improvement projects, which would be implemented beyond 5 years, will receive a hard look as required by NEPA when they are ripe for analysis, and ANG would prepare documentation for any projects requiring additional or updated NEPA analysis.

1.2 LOCATION AND DESCRIPTION OF INSTALLATION

Bangor ANGB, home of the 101 ARW, is about 2 miles west of the city of Bangor, in Penobscot County, ME, about 70 miles northeast of Augusta, ME (the state capital) (Figure 1-1). The base is about 280 acres in roughly an L-shape. Bangor ANGB is adjacent to the Bangor International Airport (BIA), a civilian airport owned and operated by the City of Bangor. The Air Force owns 122 acres of the Bangor ANGB land and leases 158 acres from the city. The Air Force has licensed all of the property to the state of Maine for use by the MEANG. The base is bound on the



LEGEND

Installation Boundary

101 ARW Bangor ANGB Location Map

Sources: ANG 2021, NHD 2021.

Figure 1-1

southwest by the BIA, on the southeast by Griffin Road, and on the north by Union Street (Maine State Route 222). Surrounding the base to the southwest is the airport; to the southeast are commercial and industrial businesses; to the northeast are commercial businesses, an electrical substation, a residential neighborhood (formerly base housing but now privately owned homes), and a recreation area with baseball and soccer fields and a parking lot; to the northwest along Union Street are commercial and retail businesses; and to the west is undeveloped wooded land.

The mission of the 101 ARW is two-fold and fulfills both federal and state responsibilities. On the federal level, the 101 ARW's mission is to deploy and employ air refueling airlift, aerospace expeditionary forces, and expeditionary combat support forces to ongoing military operations worldwide. The wing provides air refueling to United States Strategic Command to support Global Strike Operational Plan taskings. The 101 ARW's Northeast Tanker Task Force plans and executes the air refueling portion of fighter and cargo aircraft movements to and from Europe and southwest Asia. Ground support services contribute to aircraft movement velocity objectives of the DoD and U.S. allies. On the state level, the 101 ARW 's mission is to provide logistical and support services to the community and the state of Maine in the event of natural disasters or as directed by the Governor (USAF 2020).

1.3 SUMMARY OF KEY ENVIRONMENTAL STUDY REQUIREMENTS

1.3.1 National Environmental Policy Act

NEPA requires federal agencies to consider the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. The CEQ was established under NEPA to implement and oversee federal policy in this process. The CEQ subsequently issued the *Regulations for Implementing the Procedural Provisions of the NEPA* (40 CFR Parts 1500–1508), updating those regulations in 2020. The activities addressed within this document constitute a federal action and, therefore, must be assessed in accordance with NEPA. The Air Force's NEPA-implementing regulations, the EIAP*,* are detailed in 32 CFR Part 989*.*

1.3.2 Antiterrorism/Force Protection

DoD has developed antiterrorism/force protection (AT/FP) standards designed to reduce the likelihood of physical damage and mass casualties from potential terrorist attacks. Antiterrorism standards are based on DoD Instruction 2000.16 (2006), *DoD Antiterrorism (AT) Standards*; Air Force Instruction (AFI) 10-245 (2017), *Antiterrorism (AT)*; and AFI 31-118 (2017), *Security*. These documents establish guidance and procedures to reduce the vulnerability of the installation and personnel to terrorism or terrorist activities. Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Anti-Terrorism Standards for Buildings*, outlines various planning, construction, and operational standards that address potential terrorist threats.

1.3.3 Air Quality

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

1.3.4 Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. § 300101, *et seq*.) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation, outlining procedures for the management of cultural resources on federal property. Cultural resources can include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. NHPA requires federal agencies to consider potential effects on cultural resources that are listed, nominated, or eligible for listing on the NRHP; designated as a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. NHPA Section 106 requires federal agencies to consult with the State Historic Preservation Office (SHPO) if their undertakings might affect such resources. Federal agencies are also expected to consult with federally recognized Tribes when projects have the potential to affect historic properties on Tribal lands or historic properties of significance to Tribes located off Tribal lands. Regulations detailed in 36 CFR Part 800, *Protection of Historic and Cultural Properties*, provides an explicit set of procedures that ensures federal agencies meet their obligations under the NHPA, which includes inventorying resources and consultation with the SHPO.

The Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470aa-mm) was enacted to protect archaeological resources and sites on public and Native American lands in addition to encouraging cooperation and exchange of information between governmental authorities, professionals, and private individuals. The act establishes civil and criminal penalties for

destroying and altering cultural resources. AFI 90-2002, *Interactions with Federally Recognized Tribes*, implements the Air Force program in accordance with DoD's Department of Defense Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, and contains requirements that must be followed as part of analyzing proposed actions.

1.3.5 Endangered Species

The Endangered Species Act (ESA) (16 U.S.C. §§ 1531–1544) established measures for the protection of plant and animal species that are federally listed as threatened or endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions in accordance with a set of defined procedures, which can include preparing a Biological Assessment and can require formal consultation with the U.S. Fish and Wildlife Service (USFWS) under ESA Section 7.

1.3.6 Hazardous Materials and Waste, Solid Waste, and Other Contaminants

Hazardous materials are defined by regulations in 49 CFR § 171.8, and transportation of hazardous materials is regulated by the U.S. Department of Transportation as detailed in 49 CFR Parts 105–180. Hazardous wastes are defined under the Resource Conservation and Recovery Act (RCRA) in 42 U.S.C. § 6903(5), as amended by the Hazardous and Solid Waste Amendments (40 CFR Parts 260–273). Special hazards are substances that could pose a risk to human health (i.e., asbestos-containing materials, lead-based paint, and polychlorinated biphenyls) and are addressed separately from other hazardous substances under the Toxic Substances Control Act (15 U.S.C. § 2602 *et seq*.). Information on the location, quantity, and condition of hazardous materials and waste assists in determining the significance of a proposed action.

1.3.7 Water Resources

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

- Section 401 gives States and authorized tribes the authority to grant, deny, or waive water quality certification of proposed federally licensed or permitted activities that may result in a discharge into Waters of the United States.
- Section 402 requires that all construction sites on an acre or greater of land, as well as municipal, industrial, and commercial facilities discharging wastewater or stormwater directly from a point source (a pipe, ditch, or channel) into a surface water of the United States (a lake, river, and/or ocean), must obtain permission under the National Pollutant Discharge Elimination System (NPDES) permit.

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

The Rivers and Harbors Act prohibits the construction of any structure such as, but not limited to, bridges, dams, dikes, causeways, wharfs, piers, jetties and also prohibits the excavation and/or filling within navigable waters without issuance of a Section 10 permit from the USACE.

Section 438 of the Energy Independence Security Act (EISA) of 2007 (42 U.S.C. § 17094) requires all federal agencies, including the DoD, to reduce stormwater runoff from federal development projects with a footprint that exceeds 5,000 square feet (SF). These projects shall use site planning, design, construction, and maintenance strategies for the property and maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Federal agencies are required to use the *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects* to comply with the requirements of EISA Section 438. The Technical Guidance was prepared by the EPA, EPA 841-B-09-001, December 2009 as part of stormwater management design.

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

EO 11988 *Floodplain Management* requires federal agencies to avoid to the greatest extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

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

1.3.8 Other Executive Orders and Laws

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

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

Invasive Species. EO 13751 *Safeguarding the Nation from the Impacts of Invasive Species* calls for actions "to prevent the introduction of invasive species and provide for their control and to minimize the economic, plant, animal, ecological, and human health impacts that invasive species cause" utilizing the laws of the United States of America, including the NEPA of 1969, as amended (42 U.S.C. § 4321, *et seq*.), the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (16 U.S.C. § 4701, *et seq*.), the Plant Protection Act (7 U.S.C. § 7701, et seq.), the Lacey Act, as amended (18 U.S.C. § 42; 16 U.S.C. §§ 3371–3378, *et seq*.), the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531, *et seq*.), the Noxious Weed Control and Eradication Act of 2004 (7 U.S.C. § 7781, *et seq*.), and other pertinent statutes. EO 13751 amends and replaces the earlier EO 13112 *Invasive Species*.

Migratory Birds. EO 13186 *Responsibilities of Federal Agencies to Protect Migratory Birds* furthers the intent of the Migratory Bird Treaty Act (16 U.S.C. §§ 703–711) to ensure the conservation of migratory birds and their habitats. The EO further ensures environmental analysis of federal actions required by the National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321–4347) or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with an emphasis on species of concern.

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

1.4 RESOURCES NOT CARRIED FORWARD FOR DETAILED ANALYSIS

The determination of issues to be analyzed in detail in this EA and those not carried forward for detailed analysis is part of the EA scoping process as described in 40 CFR § 1501.9(f)(1), which states that issues addressed in prior environmental reviews or that are not significant may be eliminated from discussion in the EA. The following environmental resource areas were found to have no significance to the Proposed Action, Alternative 1, or No Action Alternative, as there would be no or negligible potential for direct, indirect, or effects considered with other foreseeable future actions as a result of implementing the Proposed Action or alternatives: aesthetics and visual resources, airspace, geological resources, land use, socioeconomics (including environmental justice and protection of children), and utilities.

Aesthetics and Visual Resources. The Proposed Action would have no appreciable effects on aesthetics or visual resources. All the project sites are on Bangor ANGB. There are no

aesthetically sensitive locations within the viewshed of the proposed sites. The existing view is of an ANGB with supporting infrastructure. The visual environment is typical of a military facility setting and does not constitute a unique or sensitive viewshed of public interest. The existing facilities are equipped with lighting throughout the parking areas, pedestrian walkways, and controlled access points. During the construction and demolition activities on Bangor ANGB, the visual and aesthetic characteristics of areas undergoing development would be temporarily altered by the use of construction equipment and the delivery and stockpiling of construction materials. Following completion of construction, the proposed facilities and associated infrastructure would remain as permanent visual features within the viewshed; however, the principal visual features and lighting of the facility would remain consistent with existing conditions. These effects would be negligible; therefore, aesthetics and visual resources were not carried forward for detailed analysis in this EA.

Airspace. The Proposed Action would have no effect on airspace. There would be no changes in restricted airspace, the airfield, or aircraft operations as a result of the Proposed Action. The 101 ARW has confirmed compliance with required distance thresholds from the runway for a proposed new fuel cell hangar, and would file Form FAA 7460-1, *Notice of Proposed Construction or Alteration*, with the Federal Aviation Administration (FAA) (Trembley 2020a, personal communication); therefore, airspace was not carried forward for detailed analysis in this EA.

Geological Resources. The Proposed Action is not expected to result in any appreciable effects on geological resources. The proposed projects would be in previously disturbed and graded locations. Ground-disturbing activities would be temporary and standard erosion control measures would be implemented to reduce or eliminate any potential soil impacts. Proposed activities would not alter the topography of the existing terrain nor would they be located near identified geological hazards. Their effects would be negligible; therefore, geological resources were not carried forward for detailed analysis in this EA.

Land Use. The Proposed Action is not expected to result in any appreciable effects on land use. The Proposed Action would not change current land-use patterns. The proposed activities would be within the military installation boundaries and would not alter the current on- or off-base land-use classifications or zoning. The Proposed Action is consistent with 101 ARW planning policies and guidelines, and projects have been designed and sited to be compatible with current land use. These effects would be negligible; therefore, land use was not carried forward for detailed analysis in this EA.

Socioeconomics (including environmental justice and protection of children). The Proposed Action would have no appreciable effects on the local or regional socioeconomic environment. It would have negligible, short-term beneficial effects associated with employment of construction personnel and purchases of construction equipment, materials, and supplies. The Proposed Action would not result in long-term, permanent increase or decrease in employment

or population, as the action does not include changes in the number of military or civilian operations personnel. Therefore, socioeconomics was not carried forward for detailed analysis in this EA.

The Proposed Action would have no appreciable effects on environmental justice. The threshold used for identifying minority and low-income populations per EO 12898 was developed consistent with CEQ guidance (CEQ 1997) for identifying minority population using either the 50 percent threshold or another percentage deemed "meaningfully greater" than the percentage of minority or low-income individuals in the general population. CEQ guidance does not provide a numerical definition of the term "meaningfully greater." For this analysis, the significance thresholds for environmental justice concerns were established at the state level. The county was determined to contain a meaningfully greater percentage of minority or low-income populations if the percentage substantially exceeds (by 20 percentage points or more) the state average or exceeds 50 percent of the population. Penobscot County's percentage of minority or low-income populations does not substantially exceed the state averages. The percentage of residents with income below the 2019 poverty threshold for Penobscot County was 12.4 percent (Maine's was 10.9 percent), and the county's minority population was 7 percent of the total county population (Maine's minority population was also 7 percent) (U.S. Census Bureau 2021). The Proposed Action would not result in disproportionate adverse environmental or health effects on low-income or minority populations; therefore, environmental justice was not carried forward for detailed analysis in this EA.

The Proposed Action would have no appreciable effects on the health and safety of children. Bangor ANGB has no family housing or facilities where children typically are present (e.g., childcare centers, schools). Bangor ANGB is a fenced facility with controlled entry points. Children would not have access to the on-base project sites. Therefore, protection of children was not carried forward for detailed analysis in this EA.

Utilities. The Proposed Action would have no appreciable effects on utilities. The Bangor ANGB utility infrastructure has sufficient capacity to support the proposed projects (Trembley 2020b, personal communication). The Proposed Action involves facility construction, demolition, and renovation. Construction of new buildings or building additions would replace existing buildings to be demolished. The Proposed Action also includes demolition of buildings that would not be replaced, since they are no longer required for the 101 ARW mission. Demolition of these buildings would reduce unnecessary utility use and renovations would improve utilities, which would have beneficial effects. The Proposed Action would not increase the base's military or civilian operations personnel and would not increase utility consumption. No adverse effects would be expected; therefore, utilities was not carried forward for detailed analysis.

1.5 PUBLIC AND AGENCY REVIEW OF ENVIRONMENTAL ASSESSMENT

The NBG provides opportunities for the public to participate in the NEPA process to promote open communication and improve their decision-making process. All persons and organizations with an interest in the Proposed Action and alternatives are encouraged to participate in the process.

EO 12372, *Intergovernmental Review of Federal Programs*, requires intergovernmental notifications prior to making any detailed statement of environmental effects. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the project proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate potential environmental effects of the Proposed Action. Through the IICEP process, the NGB notified relevant federal, state, and local agencies and tribes and allowed them 30 days to make known their environmental concerns about the Proposed Action. Copies of all correspondence are provided in Appendix A.

NEPA and the EIAP require public review of the EA before approval of the FONSI and implementation of the Proposed Action. A Notice of Availability (NOA) for public review of the Draft EA and Draft FONSI will be published in the *Bangor Daily News* on July 5, 2022. The Draft EA and Draft FONSI will be made available in electronic form for public review at https://www.101arw.ang.af.mil. The Draft EA and Draft FONSI will be available for public review at the Bangor Public Library, 145 Harlow Street, Bangor, ME 04401. Comments on the Draft EA and Draft FONSI received during the review period and copies of all correspondence and agency letters received will be included in Appendix A. A copy of the NOA as it appeared in the *Bangor Daily News* will be provided in Appendix B.

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2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section presents a detailed description of the Proposed Action, which is to adopt and implement the IDP. The details of the Proposed Action form the basis for the analysis of potential environmental effects presented in Section 3.0 of this EA. This section also discusses proposed alternatives, including the No Action Alternative.

This EA analyzes implementing projects in the IDP Alternative Concept in addition to other projects identified by the 101 ARW, as well as alternatives to those projects as presented in the IDP Constrained and Unconstrained Concepts. If this EA results in a FONSI, the 101 ARW could implement any projects or project alternatives fully assessed in this EA.

2.1 PROPOSED ACTION AND ALTERNATIVES

2.1.1 Proposed Action

Under the Proposed Action, the 101 ARW would implement the IDP construction, demolition, and renovation projects listed in Table 2-1, sorted by short-range and long-range projects. The proposed project sites are shown in Figure 2-1. Photos of project locations are provided at the end of Section 2. The Proposed Action is the 101 ARW's Preferred Alternative. There would be no appreciable changes in Bangor ANGB operations as a result of the Proposed Action. The following subsections discuss the construction, demolition, and renovation aspects of the projects.

The 101 ARW notes that Project 9 is not carried forward for detailed analysis in this EA as it is not ripe for analysis. It will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

Table 2-1. Summary of Proposed Projects

IDP Project Number	Project Title (ANG Project Number)	
Short-Range Projects		
1	**Alter AT/FP at Main Gate (outside the gate) (FKNN102003)**	
	Project Type	Construction and Renovation
	Execution Year (short- or long-range)	2024 (short-range)
	Project Need	Meet DoD, Air Force, and ANG AT/FP measures.
	Proposed Action (Preferred Alternative)	• Acquire 0.93 acres of land to the north of the gate. • Construct 2,200 square yards (SY) of entrance and exit traffic lanes for truck traffic inspection and install vehicle gate. • Repair 3,500 SY of existing road pavement. • Renovate main gate, boundary fencing, generator, and signage. • Install AT/FP traffic-calming measures (barriers, planters). • Relocate electrical service, storm drains, and fire hydrant. • Replace and relocate main base sign to include minor landscaping and utilities.
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Maintain existing gate configuration, road conditions, and AT/FP measures, which would not meet AT/FP requirements.
2	**Repair Main Entrance AT/FP (inside the gate) (FKNN162349)**	
	Project Type	Construction and Renovation
	Execution Year (short- or long-range)	2023 (short-range)
	Project Need	Meet DoD, Air Force, and ANG AT/FP measures and repair deteriorating pavement.
	Proposed Action (Preferred Alternative)	• Repair/replace 5,743 SY of existing road. • Construct 814 SY of sidewalk. • Install AT/FP barriers.
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Do not repair/replace existing roads, construct sidewalk, or install barriers, which would not meet AT/FP requirements.
4	**Demolish B510 (FKNN212001)**	
	Project Type	Demolition
	Execution Year (short- or long-range)	2024 (short-range)
	Project Need	Remove unauthorized building space incurring unnecessary maintenance and utility costs.
	Proposed Action (Preferred Alternative)	Demolish B510, a 34,551 SF, one-story heating facility building.
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Maintain building in current condition and configuration, which would not support mission requirements.

Table 2-1 (continued)

5	**Renovate B515 for Small Air Terminal (SAT) (FKNN212002; companion project to FKNN212001)**	
	Project Type	Renovation
	Execution Year (short- or long-range)	2023 (short-range)
	Project Need	Renovations required to accommodate a new use of the SAT. The facility would continue to be used by the 101 ARW for national security activity and for processing branch, reserve, or active-duty military members arriving/departing Bangor ANGB.
	Proposed Action (Preferred Alternative)	Interior renovations to B515, a 16,575 SF, one-story Aircraft Support Equipment (ASE) shop/storage building.
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Maintain building in current condition and configuration, which would not as effectively accommodate the SAT.
6	**Demolish B489 and B505 (FKNN232003)**	
	Project Type	Demolition
	Execution Year (short- or long-range)	2024 (short-range)
	Project Need	Buildings do not meet AT/FP standoff requirements from base perimeter fence.
	Proposed Action (Preferred Alternative)	• Demolish B489, a 6,800 SF, one-story Reserve Forces Operational Training building. • Demolish B505, a 24,400 SF, one-story Reserve Forces Operational Training building.
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Maintain buildings in current condition, which would not meet AT/FP requirements.
7	**Additions or Alterations (ADAL) to B514 (FKNN192001)**	
	Project Type	Construction
	Execution Year (short- or long-range)	2024 (short-range)
	Project Need	Building does not have large enough storage space or service bay to accommodate Communications Squadron equipment and vehicles.
	Proposed Action (Preferred Alternative)	• Construct 2,140 SF, one-story addition to B514 (a communications facility building), increasing SF from 8,060 SF to 10,200 SF. • Addition would provide vehicle maintenance and storage space for the Communications Squadron.
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Maintain and use B514 in current configuration, which would not support Communications Squadron mission requirements.
10	**ADAL to B417**	
	Project Type	Construction and Renovation
	Execution Year (short- or long-range)	2023 (short-range)
	Project Need	Building must be expanded to accommodate occupants of B489 and B505 (buildings to be demolished; see Project 6) in B417, which will facilitate right-sizing of the base; also, B417's aging barracks and dining facility need to be renovated.
	Proposed Action (Preferred Alternative)	• Construct 2,100 SF, one-story addition to B417 (Troop Camp building). • Interior renovations to B417's existing 30,653 SF (21,219 SF three-story troop barracks and 9,434 SF one-story dining facility).
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Maintain building in current condition and configuration, which would not support mission requirements.

Table 2-1 (continued)

Long-Range Projects		
3	**Construct Fuel Cell Hangar (FKNN159044)**	
	Project Type	Construction
	Execution Year (short- or long-range)	2028 (long-range)
	Project Need	Accommodate the aircraft in the fleet and meet hangar safety requirements.
	Proposed Action (Preferred Alternative)	• Construct 40,871 SF hangar on previously developed site. • Would replace existing hangar, which is to be demolished (see Project 8).
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Do not construct new hangar; instead, continue use of existing hangar (Building [B] 542), which is undersized and does not meet safety requirements or storage needs.
8	**Demolish B542 (FKNN252001)**	
	Project Type	Demolition
	Execution Year (short- or long-range)	2029 (long-range)
	Project Need	Building is undersized; hangar does not meet storage needs or allow for safe clearances around the aircraft during maintenance operations. The existing canopy is not large enough to protect personnel and assets from injury or damage from snow/ice sliding off the roof. The existing parking does not meet AT/FP requirements per UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*.
	Proposed Action (Preferred Alternative)	Demolish B542, a 23,418 SF fuel systems maintenance dock hangar.
	Alternative 1	Same as Proposed Action.
	No Action Alternative	Maintain and use B542 in current condition, and do not construct new hangar, which would not support mission requirements, address safety concerns, or meet AT/FP requirements.
9	**Construct Second AT/FP Compliant Gate (FKNN192006)** *Project note*: 101 ARW notes that this project is low on the Installation Priority List of projects. A traffic study would need to be conducted, as well as coordination with the City of Bangor and Maine Department of Transportation.	
	Project Type	Construction
	Execution Year (short- or long-range)	2029 (long-range)
	Project Need	Current alternate gate is within the Quantity-Distance (QD) arc of the Munitions Storage Area (MSA).
	Proposed Action (Preferred Alternative)	Construct new gate off Union Street adjacent to the running track and connecting to Pesch Circle near B417.
	Alternative 1	Construct new gate at current alternate gate location off Downing Road, which would require rerouting of traffic once inside the base perimeter to avoid MSA QD arcs.
	No Action Alternative	Do not construct second AT/FP compliant gate, which would not address MSA QD arc safety concerns.

Sources: ANG 2013, 2017, 2020; Jacobs 2018; Pond 2018; Trembley 2021, email communication.

101 ARW Bangor ANGB
Proposed Project Locations Map

Figure 2-1

Note: Areas shown are approximate. Source: ANG 2021.

2.1.1.1 Construction

Six projects involve new construction. The construction projects would add approximately 45,000 SF from constructing new buildings or building additions and would add about 3,000 SY of impervious surface from new traffic lanes and sidewalks. The construction would be on previously disturbed land. Proposed new construction projects include the following (project details are provided in Table 2-1):

- ***Project 1. Alter AT/FP at Main Gate (outside the gate) (FKNN102003).*** This project would include construction of 2,200 SY of entrance and exit traffic lanes at the installation's main gate on Maineiac Avenue to accommodate truck traffic and inspection.
- ***Project 2. Repair Main Entrance AT/FP (inside the gate) (FKNN162349).*** This project would include construction of 814 SY of sidewalk inside the main gate entrance along Maineiac Avenue for pedestrians.
- ***Project 3. Construct Fuel Cell Hangar (FKNN159044).*** This project would be the construction of a 40,871 SF hangar between Glenn Avenue and an apron/taxiway on the site of a former aircraft maintenance hangar (B496).
- ***Project 7. ADAL to B514 (FKNN192001).*** This project would be the construction of a 2,140 SF, one-story addition to B514 (a communications facility) for Communications Squadron vehicle maintenance and storage.
- ***Project 9. Construct Second AT/FP Compliant Gate (FKNN192006).*** The project would be the construction of a second AT/FP gate for the installation. This is a long-term project in the early stages, with two possible locations under consideration. The Proposed Action would be to locate the gate off Union Street, west of Randolph Drive, near the on-base running track and B417. The alternate location is discussed in Section 2.1.2. **Note:** This project is in the early stages of development; design drawings have not been drafted and implementation would be more than 5 years away. The project would require a traffic study and consultation with the City of Bangor and Maine Department of Transportation. Therefore, this project is not carried forward for detailed analysis in this EA. As discussed in Sections 1.0 and 1.1, long-term facility improvement projects such as this will undergo future NEPA analyses, tiering off this EA, when specific project planning details are available.
- ***Project 10. ADAL to B417.*** This project would be the construction of a 2,100 SF, one-story addition to B417. B417 is the Troop Camp building that has a barracks wing and a dining facility wing. The addition would be on the east side of the building (facing the parking lot), centrally located between the barracks and dining wings of the building. The project would consolidate occupants of B489 and B505 (to be demolished; see Project 6) into B417 to facilitate right-sizing of the base.

2.1.1.2 Demolition

Three projects involve demolition. The demolition projects would remove about 89,000 SF of facilities. After building demolition, the land would be seeded and maintained as lawn. Proposed demolition projects are the following (project details are provided in Table 2-1):

- ***Project 4. Demolish B510 (FKNN212001).*** This project would be demolition of B510 (34,551 SF heating facility building). The building remains from a prior Active Duty mission. It is not required for the 101 ARW mission and incurs unnecessary maintenance and utility costs.
- ***Project 6. Demolish B489 and B505 (FKNN232003).*** This project would be the demolition of two Reserve Forces Operational Training buildings: B489 (6,800 SF) and B505 (24,400 SF). The buildings do not meet AT/FP standoff requirements from the base perimeter fence.
- ***Project 8. Demolish B542 (FKNN252001).*** This project would be the demolition of B542, a 23,418 SF fuel systems maintenance dock hangar. The aging building is undersized. It does not meet storage needs and does not allow for safe clearances around the aircraft during maintenance operations. The building would be demolished after the new hangar (Project 3) would be constructed.

2.1.1.3 Renovation

Four projects involve renovation. Renovations would be alterations and repairs at the main gate, including about 9,200 SY of road repair/replacement and about 47,300 SF of interior building renovations. Proposed renovation projects include the following (project details are provided in Table 2-1):

- ***Project 1. Alter AT/FP at Main Gate (outside the gate) (FKNN102003).*** This project would include repairing 3,500 SY of road pavement; renovating the boundary fencing, gate, generator, and signage; replacing and relocating the main base sign; and installing barriers and planters as AT/FP traffic calming measures at the main gate on Maineiac Avenue. These measures would also require associated minor landscaping and utility improvements, including relocating electrical service, storm drains, and a fire hydrant.
- ***Project 2. Repair Main Entrance AT/FP (inside the gate) (FKNN162349).*** This project would include repairing 5,743 SY of road pavement and installing AT/FP barriers inside the main gate on Maineiac Avenue.
- ***Project 5. Renovate B515 for SAT (FKNN212002; companion project to FKNN212001).*** This project would include interior renovations to this 16,575 SF, one-story building built in 1960 to accommodate a new use of the facility. The 101 ARW would continue to use B515 for national security activities and to process any branch, reserve, or active-duty military members as they arrive or depart Bangor ANGB for assignments elsewhere.

- ***Project 10. ADAL to B417.*** This project would be interior renovations to the building's existing 30,653 SF (21,219 SF three-story troop barracks and 9,434 SF one-story dining facility).

2.1.2 Alternative 1

Alternative 1 includes implementation of all projects listed under the Proposed Action without an identified alternative plus implementation of any identified alternative projects. An alternative has been identified for ***Project 9. Construct Second AT/FP Compliant Gate (FKNN192006)*** detailed below.

The proposed alternative for Project 9 would be to construct a new second AT/FP gate at its current location off Downing Road in the northwestern area of Bangor ANGB. This would require rerouting of traffic once inside the base perimeter to avoid the MSA QD arcs. As noted earlier, this project is in the early stages of development; design drawings have not been drafted and implementation would be more than 5 years away. The project would require a traffic study and consultation with the City of Bangor and Maine Department of Transportation. Therefore, this project is not carried forward for detailed analysis in this EA. As discussed in Sections 1.0 and 1.1, long-term facility improvement projects such as this will undergo future NEPA analyses, tiering off this EA, when specific project planning details become available.

2.1.3 No Action Alternative

The CEQ regulation in 40 CFR § 1502.14(c) requires analysis of the No Action Alternative in all NEPA documents. Under the No Action Alternative, the 101 ARW would not implement the Proposed Action. The 101 ARW would not implement the facility improvement construction and renovation projects to meet mission requirements or AT/FP requirements. Demolition of outdated, inefficient facilities also would not occur. Although the No Action Alternative does not meet the installation's needs or fulfill the purpose and need of the Proposed Action, it was carried forward for detailed analysis in the EA as required under NEPA.

Figure 2-2. Photographs of Project Locations

	Project 1. Alter AT/FP at Main Gate (outside the gate) (FKNN102003): View from Griffin Road looking northwest down Maineiac Avenue toward the main gate. Proposed project site is along right side of Maineiac Avenue. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)
	Project 1. Alter AT/FP at Main Gate (outside the gate) (FKNN102003): View from Maineiac Avenue (outside the gate) looking northeast at the proposed project site. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)

	Project 2. Repair Main Entrance AT/FP (inside the gate) (FKNN162349): View on base from the main gate looking northwest down Maineiac Avenue. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)
	Project 3. Construct Fuel Cell Hangar (FKNN159044): Looking west across the site for the proposed new hangar, B493 to the right and B499 in the background. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)

	Project 4. Demolish B510 (FKNN212001): View of B510, looking northwest. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)
	Project 5. Interior renovations to B515 for SAT (FKNN212002): View of B515, looking southeast. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)

	Project 6. Demolish B489 and B505 (FKNN232003): View of B489, looking northeast. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)
	Project 6. Demolish B489 and B505 (FKNN232003): View of B505, looking west. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)

	Project 7. ADAL to B514 (FKNN192001): View of B514, looking north/northeast. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)
	Project 7. ADAL to B514 (FKNN192001): B514, looking northwest. View of southeast side of B514 where proposed addition would be constructed. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)

	Project 8. Demolish B542 (FKNN252001): View of B542, looking north. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)
	Project 8. Demolish B542 (FKNN252001): Side view of B542, looking east. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)

	Project 9. Construct Second AT/FP Compliant Gate (FKNN192006): View of Union Street site, looking southwest. Union Street in foreground, B417 in the background on the right, City of Bangor electrical substation on the left. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)
	Project 9. Construct Second AT/FP Compliant Gate (FKNN192006): View from Downing Road gate, looking southwest. (Photo credit: L. Rivard, Tetra Tech, 1/11/2021.)

	Project 10. ADAL to B417: View of B417, looking west. Dining facility (one story) on left, barracks (3 stories) on right. (Photo credit: L. Rivard, Tetra Tech, 3/10/2021.)
	Project 10. ADAL to B417: Closeup view (looking west) of B417 proposed project site between the dining facility (on left) and barracks (on right). (Photo credit: L. Rivard, Tetra Tech, 3/10/2021.)

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes relevant and existing environmental conditions for resources potentially affected by the Proposed Action and the environmental consequences of implementing the Proposed Action, Alternative 1, and No Action alternatives. In compliance with NEPA, CEQ, and Air Force NEPA implementing regulations, the description of the affected environment focuses on only those aspects of the environment potentially subject to effects. In general, the description of the affected environment and assessment of environmental consequences focuses on the Bangor ANGB and Penobscot County, ME.

The resources carried forward for detailed analysis are safety, air quality, noise, water resources (including wetlands, floodplains, and coastal zone management), biological resources, transportation, cultural resources, and hazardous materials and wastes. This section describes the affected environment and the evaluation of environmental consequences of these resource areas. Section 3.9 discusses cumulative effects of the Proposed Action.

3.1 HEALTH AND SAFETY

3.1.1 Definition of Resource

Safety and accident hazards can often be identified and reduced or eliminated before anyone or anything is affected by them. Construction site safety involves complying with regulatory requirements intended to reduce the risk of illness, injury, death, and property damage. Ground safety concerns associated with human activities, operations, and maintenance activities that support mission operations, including AT/FP considerations and Explosive Safety Quantity Distance (ESQD) arcs. Air Force Manual 91-201, *Explosives Safety Standards*, defines required distances between sites where explosives are stored or handled and other types of facilities.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health Program*, implements Air Force Policy Directive (AFPD) 91-3, *Occupational Safety and Health*, by outlining the Air Force Office of Safety and Health (AFOSH) Program, the purpose of which is to protect personnel from occupational death, injury, or illness and to minimize the loss of resources by managing risks. In conjunction with the Air Force Mishap Prevention Program, these standards ensure all Air Force workplaces meet federal safety and health requirements.

A Bird/Wildlife Aircraft Strike Hazard (BASH) Plan (as outlined in AFI 91-212, *Bird/Wildlife Aircraft Strike Hazard Management Program*) is implemented at military airfields to minimize bird and other wildlife strikes to aircraft. Strike incidents can result in casualty of personnel and critical damage to aircraft and ground resources.

3.1.2 Existing Conditions

The safety elements at Bangor ANGB include training and procedures, safety zones, monitoring, signage, exclusion, and enforcement and apply to all aspects of safety. The entire base is secured

by a chain link fence. Bangor ANGB has a perimeter road for patrols and one primary entry control facility (ECF) (the main gate). The 101 Security Forces Squadron (SFS) is responsible for base security. The 101 SFS has identified that the primary ECF and several buildings (including B489, B505, and B542) do not meet AT/FP requirements per UFC 4-010-01 (Pond 2018).

The 101 SFS and Bangor ANGB Fire Department have mutual aid agreements with local authorities to provide fire and rescue services as needed. The 101 Medical Group has a Memorandum of Understanding with local hospitals as well to provide medical aid (ANG 2019). As users of the runways at BIA, 101 ARW has implemented their BASH plan specifically intended to reduce hazards from birds and supports the implementation of BIA's Wildlife Hazard Management Plan which focuses on ground wildlife hazards. Together, the two organizations (Bangor ANGB and BIA) coordinate for successful implementation of these plans for the safety of personnel and property (MEANG 2017a).

Ordnance stored and handled at the installation must meet the ESQD arcs currently in place at Bangor ANGB. There is one MSA located at the northwest portion of the installation. It is fenced with controlled gates for security.

Many of the buildings at Bangor ANGB were in service before AT/FP and Occupational Safety and Health Administration (OSHA) worker considerations were critical concerns. As such, units operating under the 101 ARW can face challenges in complying with updated laws, policies, and protocols related to these safety aspects (ANG 2005).

There are six airfield waivers maintained at BIA for apron and taxiway clearance issues. No projects are proposed within the airfield; thus, these waivers will remain unchanged by the Proposed Action.

3.1.3 Environmental Consequences

3.1.3.1 Significance Criteria

Health and safety effects would be considered significant if the action would substantially increase risks to Air Force personnel or the general public associated with air or flight, construction site, or ground safety during construction or operations and maintenance activities, either on or off the base.

3.1.3.2 Proposed Action

Summary. The Proposed Action would result in short-term less-than-significant effects to construction site safety and long-term beneficial effects to ground safety. Short-term effects would be from inherent safety hazards associated with construction, demolition, and renovation activities. Long-term effects would be from implementing projects to meet AT/FP and safety clearance requirements.

Construction. The construction, demolition, and renovation activities associated with the projects identified in the Proposed Action would introduce temporary safety hazards and risks. These

safety issues would be minimized through the implementation of standard safe work practices compliant with OSHA and Air Force programs. During the process of construction and renovation at the main gate, there would be temporary traffic delays and detours which would challenge AT/FP protocols, but would be minimized by a phased approach or use of internal routing.

Operations. The results of the Proposed Action projects include improved safety and compliance with AT/FP. The demolition of B542 and the construction of the new fuel cell hangar would provide safety clearances aligned with current requirements for ANG personnel working around the modern and larger aircraft operating at Bangor ANGB. Other demolition projects would remove unused or unnecessary buildings (B489, B505, and B542) which are not configured to meet AT/FP compliance. New construction and renovation efforts at the main gate and the Preferred Alternative of the secondary gate would provide compliance with AT/FP and improve overall installation safety by avoiding the ESQD arcs.

There would be no effects to air or flight safety. The projects proposed do not include work on the airfield or other areas which would directly affect safety protocols in place for airspace use and airfield operations.

3.1.3.3 Alternative 1

Effects on health and safety from Projects 1–8 and 10 would be the same as under the Proposed Action. Project 9's identified alternative is a long-range construction project and will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

3.1.3.4 No Action Alternative

Existing conditions would remain unchanged. Under the No Action Alternative, the 101 ARW would continue to operate with adverse effects on safety from AT/FP noncompliance and ESQD arcs for the foreseeable future at entry control facilities and where standoff setbacks cannot be achieved.

3.2 AIR QUALITY

3.2.1 Definition of Resource

Air pollution is the presence in the outdoor atmosphere of one or more contaminants (e.g., dust, fumes, gas, mist, odor, smoke, or vapor) in quantities and of characteristics and duration that are injurious to human, plant, or animal life. Air quality as a resource incorporates components that describe air pollution within a region, sources of air emissions, and regulations governing those emissions. This section discusses the existing conditions, a regulatory overview, and a summary of greenhouse gases (GHGs) and global warming.

3.2.2 Existing Conditions

EPA Region 1 and the Maine Department of Environmental Protection (MDEP) regulate air quality in Maine. The CAA (42 U.S.C. §§ 7401–7671q), as amended, assigns EPA responsibility to

establish the primary and secondary NAAQS (40 CFR Part 50) that specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), SO_2, CO, NO_2, O_3, and Pb. Primary NAAQS provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary NAAQS provide public welfare protection, including protection against decreased visibility, harm to animals, and damage to buildings, crops, and vegetation. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Table 3-1 outlines the NAAQS for each criteria pollutant. While each state has the authority to adopt standards stricter than those established under the federal program, the state of Maine has accepted the federal standards.

Table 3-1. National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
CO		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Pb		Primary and Secondary	Rolling 3-month average	0.15 micrograms/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	Annual	53 ppb	Annual mean
O_3		Primary and Secondary	8-hour	0.070 ppm	Annual fourth highest daily maximum 8-hour concentration, averaged over 3 years
PM	$PM_{2.5}$	Primary	Annual	12 micrograms/m^3	Annual mean, averaged over 3 years
		Secondary	Annual	15 micrograms/m^3	Annual mean, averaged over 3 years
		Primary and Secondary	24-hour	35 micrograms/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24-hour	150 micrograms/m^3	Not to be exceeded more than once per year on average over 3 years
SO_2		Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: 40 CFR 50.1-50.12; USEPA 2021a.
Notes: ppm = parts per million; ppb = parts per billion; µg/m3 = micrograms per cubic meter.

Local Air Quality. Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as nonattainment areas. Federal regulations designate AQCRs with levels below the NAAQS as attainment areas. Maintenance areas are AQCRs that have previously been designated as nonattainment and have been redesignated to attainment for a probationary period through implementation of maintenance plans. These portions of Penobscot County (and therefore all areas associated with the action) are within the Millinocket AQCR (AQCR 109) (40 CFR Part 81). EPA has designated these portions of Penobscot County, and therefore all areas associated with the Proposed Action, as a maintenance area for the SO_2 NAAQS, and in full attainment for all other criteria pollutants (USEPA 2021b).

Permitting Overview. Bangor ANGB is a "minor source" of air emissions, meaning it has emissions below the major source threshold outlined in the air permitting regulations, and is not required to hold a Title V operating permit. A “synthetic minor” source of air emissions, such as Bangor ANGB, currently has an active air emission license issued pursuant to Major and Minor Source Air Emission License Regulations, 06-096 Code of Maine Rules (CMR) chapter 115. The Bangor ANGB air emission license A-627-71-J-R/A was issued February 17, 2017 and amended February 25, 2020 (A-627-71-K-A). This license addresses the installation and operation of the facility’s air emissions units including boilers, heaters, generators, engines, paint booths, and fuel storage equipment. The license limits emissions below major source thresholds through 12-month rolling total installation-wide emission and operational requirements and includes recordkeeping requirements to demonstrate compliance. Table 3-2 lists the base-wide emissions from all stationary and mobile sources (AECOM 2019).

Table 3-2. Calendar Year 2017 Annual Emissions for Bangor ANGB

Pollutant	Stationary Source Emissions (tpy)	Mobile Source Emissions (tpy)
Carbon monoxide (CO)	2.0	44.5
Fine particulate matter ($PM_{10}/PM_{2.5}$)	0.2	10.1
Nitrogen oxides (NO_x)	3.1	44.8
Sulfur dioxide (SO_2)	<0.1	3.2
Volatile organic compounds (VOCs)	1.1	2.3

Source: AECOM 2019.
Note: tpy = tons per year.

New stationary sources of air emissions, such as boilers or backup generators would require permits to construct. There are two types of construction permits available for new emissions sources in attainment and maintenance areas, including (1) prevention of significant deterioration (PSD) permits for major sources in attainment areas and (2) minor new source construction permits.

The PSD program protects air quality by imposing limits on emissions from major sources in attainment areas. The PSD process applies to all proposed new major sources of air pollutants in attainment areas, and typically takes 18 to 24 months to complete. In general, the PSD major

source thresholds are 25 tons per year (tpy) for Pb, and 250 tpy for all other criteria pollutants; however, it is lower for some special categories, such as 100 tpy for industrial heating boilers. Major new sources of air emissions subject to PSD typically require a review of control technologies for criteria pollutants, predictive dispersion modeling of air emissions, and a separate public involvement process.

Projects which include replacement of existing emissions units or installation of new emission units must be licensed prior to beginning construction with the exception of emission units which are classified as insignificant activities. Insignificant activities include, but are not limited to, boilers or heaters with a maximum heat input less than 1.0 million British thermal units per hour (MMBtu/hr) and engines with a maximum heat input of less than 0.5 MMBtu/hr. The base must apply for and receive an amendment to the air emission license addressing any new or replacement emission units that are not considered insignificant activities prior to beginning actual construction.

Climate and Greenhouse Gases. Bangor's average high temperature is 69.2° Fahrenheit (°F) in the hottest month of July, and an average low temperature of 18.0°F in the coldest month of January. Bangor has average annual precipitation of 39.6 inches per year. The wettest month of the year is November with an average precipitation of 3.7 inches (Idcide 2021).

GHGs are components of the atmosphere that trap heat relatively near the surface of the earth and therefore contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide, methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Whether or not rainfall would increase or decrease remains difficult to project for specific regions (IPCC 2018).

EO 14008, *Tackling the Climate Crisis at Home and Abroad* (2021), outlines policies to reduce GHG emissions and to bolster resilience to the impacts of climate change. The EO directs CEQ to review, revise, and update its 2016 final guidance entitled *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. When considering GHG emissions and their significance, agencies should use appropriate tools and methodologies for quantifying GHG emissions and comparing GHG quantities across alternative scenarios. The CEQ guidance specifically requires agencies within the DoD to quantify GHG emissions in NEPA assessments and review federal actions in the context of future climate scenarios and resiliency.

3.2.3 Environmental Consequences

3.2.3.1 Significance Criteria

Air quality effects would be considered significant if (1) the net emissions from the Proposed Action would exceed the PSD major source thresholds in an attainment or maintenance area or the *de minimis* thresholds in a nonattainment area, or (2) the Proposed Action would contribute to a violation of any local, state, or federal air quality regulation.

3.2.3.2 Proposed Action

Summary. The Proposed Action would have short-term less-than-significant and long-term beneficial effects to air quality. Short-term effects would be from construction, demolition, and renovation activities. Long-term effects would be from decreases in heating and cooling requirements at the installation. Emissions would not exceed the PSD major source thresholds in an attainment or maintenance area or the *de minimis* thresholds in a nonattainment area, and the Proposed Action would not contribute to a violation of any local, state, or federal air quality regulation.

The Proposed Action and alternatives consist of construction (including new construction, renovations, alterations, and additions), demolition of buildings and pavement, and administrative projects (see Table 2-1). There would be some minor adverse effects to air quality from individual projects and project alternatives; however, each was reviewed on a case-by-case basis and none individually would have appreciable adverse effects to air quality. A description of effects to air quality from the full implementation of the IDP, including all projects and project alternatives outlined in Table 2-1, is provided in the following discussions of construction, operations, and GHGs. This is considered the reasonable upper bound of effects, and impacts would be less than those described herein.

The Proposed Action is within a region that EPA has designated as a maintenance area for the SO_2 NAAQS; therefore, the general conformity rule does apply to this pollutant (USEPA 2021b). An applicability analysis under the general conformity rule is provided below. The Proposed Action is within an attainment area for all other NAAQS; therefore, the general conformity rule does not apply to any pollutants other than SO_2.

Construction. The Air Force's Air Conformity Applicability Model was used to estimate the total direct and indirect emissions from the Proposed Action. Construction, demolition, and renovation emissions were estimated for architectural coatings, fugitive dust, on- and off-road diesel equipment and vehicles, paving off-gasses, and worker trips (Table 3-3). The estimated SO_2 emissions from the proposed construction activities would be below the *de minimis* threshold of 100 tpy; therefore, a general conformity determination would not be required, and the level of effects would be less than significant. The estimated emissions of all other criteria pollutants from the proposed construction activities would be below the PSD major source threshold; therefore, the level of effects would be less than significant. Appendix C includes detailed emission

calculations, a stand-alone general conformity applicability assessment, the methodology used, and the ACAM model outputs.

Table 3-3. Estimated Air Emissions Compared to Significance Indicators

Pollutant	Construction Emissions (tpy)	Operational Emissions (tpy)	PSD Major Source Threshold (tpy)	Exceeds Thresholds? [Yes/No]
CO	5.3	-0.3	250 (100)	No
NO_x	4.5	-0.4		
SO_2	<0.1	-<0.1		
PM_{10}	3.2	-<0.1		
$PM_{2.5}$	0.2	-<0.1		
VOC	1.3	-<0.1		
CO_2e	1,134	-313	NA	NA

Source: USAF 2022.
Notes: The significance indicator for SO_2 is the *de minimis* threshold value of 100 tpy as outlined under the general conformity regulations. CO = carbon monoxide, *de minimis* = of minimal importance, CO_2e = carbon dioxide equivalent, NA = not applicable, NO_x = oxides of nitrogen, $PM_{2.5}$ = particulate matter, less than 2.5 microns in diameter, PM_{10} = particulate matter less than 10 microns in diameter, SO_x = oxides of sulfur, tpy = tons per year, VOC = volatile organic compound.

For purposes of analysis, it was assumed that all construction, demolition, and renovation activities would be compressed into one 12-month period. Therefore, regardless of the ultimate implementation schedule, annual emissions would be less than those specified herein. Small changes in facilities siting and design and moderate changes in quantity and types of equipment used would not substantially change these emission estimates, and they would not change the determination under the general conformity rule or level of effects under NEPA.

The Maine Administrative Code outlines requirements with which the NGB must comply when constructing new facilities, such as controlling fugitive dust and open burning. All persons responsible for any operation, process, handling, transportation, or storage facility that could result in fugitive dust would take reasonable precautions to prevent such dust from becoming airborne. Reasonable precautions might include using water to control dust from building construction, road grading, or land clearing. In addition, the Proposed Action would proceed in full compliance with current state air quality regulations using compliant practices and/or products. The Maine Administrative Code requirements include the following:

- Chapter 101, Visible Emissions Regulation.
- Chapter 102, Open Burning.
- Chapter 106, Low Sulfur Fuel Regulation.
- Chapter 118, Gasoline Dispensing Facilities Vapor Control.
- Chapter 131, Cutback Asphalt and Emulsified Asphalt.
- Chapter 151, Architectural and Industrial Maintenance (AIM) Coatings.

This listing is not all-inclusive; the NGB and any contractors would comply with all applicable air pollution control regulations.

Operations. In general, there would be more facilities demolished than constructed, and the newly constructed facilities would have new heating equipment. There would be a net decrease in heated space and stationary sources of air emissions from the implementation of the Proposed Action. Decreases in operational emissions were estimated for heating and cooling of facilities and the potential decommissioning of back-up generators (see Table 3-3). The estimated emissions would decrease for all pollutants (including SO_2); therefore, they would be below both the *de minimis* threshold for SO_2 and the PSD major source threshold for all other pollutants. A general conformity determination would not be required, and the level of effects would be less than significant. Detailed emission calculations have been included in Appendix C. There would be no appreciable change in the number of personnel or the overall mission at the base. There would be no changes in aircraft training or operations and no changes in vehicle emissions from commuting.

The Proposed Action does not include any new major stationary sources of air emissions (i.e., sources that emit greater than the major source thresholds), but it may include some small stationary sources such as stand-by generators or boilers. Notably, the proposed Fuel Cell Hangar would require a new generator and boilers for heating. No paint booths or tank farms are planned. Any new stationary sources of air emissions could be subject to federal and state air permitting regulations, would be reviewed on a case-by-case basis, and would be added to the installation's air operating permit, as necessary. The threshold for permitting of the new stationary sources is unknown at this time. In the final design stage a review of the actual equipment selected would be required and a case-by-case assessment would be conducted to determine any permitting requirements. Both a new source construction permit and a modification to the existing operating permit could be required. All older boilers and back-up generators removed during reconfiguring or demolition of existing buildings, specifically from B489, B505, B510, and B542, would be decommissioned and removed from the base's air operating permit.

External Combustion (ECOM) sources include boilers, water heaters, and furnaces, which are stationary point sources of emissions. ECOM sources combust fuel to provide process heating, comfort heating, or to generate hot water. Emissions from ECOM units would vary depending on several factors including the configuration, rated heat input capacity of the combustor, fuel type, control device(s) used, and hours of operation. Emissions from ECOM units include criteria pollutants, Hazardous Air Pollutants (HAPs), and GHGs. The following federal, state, and Air Force requirements apply to this source category:

- 40 CFR 63, Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.
- 06-096 CMR 101, Visible Emissions Regulation.
- 06-096 CMR 103, Fuel Burning Equipment Particulate Emission Standard.
- A-627-71-J-R/A (SM), Bangor ANGB Air Emission License.
- AFI 32-7040, Air Quality Compliance and Resource Management.

In addition, routine procedures require direct action of the air quality program to operate ECOM sources, including:

- At all times, operators must operate and maintain the diesel-fueled boilers and associated air pollution control equipment and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions.
- Diesel-fueled boilers must be tuned up every 5 years as specified in 40 CFR 63.11223(b)(1) through (7).06-096 CMR 101 & A-627-71-J-R/A (SM).
- Visible emissions from any diesel-fired unit must not exceed opacity of 20 percent on a six-minute block average basis, except for no more than once in a three-hour period.
- Visible emissions from any unit firing natural gas or propane must not exceed 10 percent opacity on a six-minute block average basis, except for no more than once in a three-hour period. A-627-71-J-R/A (SM).
- The base is limited to the equivalent fuel use of 56,000 MMBtu/year of heat input in the boilers and water heater units.
- Licensed boilers must not exceed those specified in license A-627-71-J-R/A (SM).
- All documentation of submitted initial notifications to the EPA for the diesel fired boilers must be maintained as well as records of dates and procedures for each boiler tune up in accordance with 40 CFR 63.11225(c)(2)(i) and 40 CFR 63.11223(b)(6).A-627-71-J-R/A (SM).

This listing is not all-inclusive; the NGB would operate and maintain all ECOM sources in full compliance with all applicable air pollution control regulations.

Stationary Internal Combustion (ICOM) engines include engines that have remained at a single location for more than 12 consecutive months, such as back-up generators. Emissions from ICOM engines vary due to design rating and operating conditions such as temperature, humidity, torque, ignition timing, air/fuel mixture, and emission controls. Emissions from ICOM engines include criteria pollutants, HAPs, and GHGs. ICOM sources at Bangor ANGB combust diesel to provide power when necessary. The following federal, state, and Air Force requirements apply to this source category:

- 40 CFR Part 60, Subpart IIII -Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
- 40 CFR Part 63, Subpart ZZZZ –National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.
- 06-096 CMR 101, Visible Emissions Regulation.
- 06-096 CMR 103, Fuel Burning Equipment Particulate Emission Standard.
- 06-096 CMR 148, Emissions From Smaller Scale Electric Generating Resources.
- A-627-71-J-R/A (SM), Bangor ANGB Air Emission License.

In addition, routine procedures require direct action of the air quality program to operate ICOM sources, including:

- Operate and maintain the engine and control device according to the manufacturer's emission-related written instructions, your maintenance plan, and to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 60, IIII §62.4211(a)].
- Operate and maintain the engine to achieve the certified emission standards as supplied by the manufacturer and as required in §60.4205 over the entire life of the engine.
- Must have a non-resettable hour meter installed [40 CFR 60, IIII §60.4209].
- There is no time limit on the use of emergency stationary ICOM in emergency situations [40 CFR 60, IIII §60.4211(f)].
- Emergency stationary ICOM may be operated for up to 100 hours per calendar year for maintenance and testing. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations.
- Change oil and filter every 500 hours of operation or annually, whichever comes first.
- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
- Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
- Engines with heat input capacities greater than 3.0 MMBtu/hr must not generate more than 0.12 pounds of PM_{10}/MMBtu.

This listing is not all-inclusive; the NGB would operate and maintain all ICOM sources in full compliance with all applicable air pollution control regulations.

Greenhouse Gases and Climate Change. This EA examines GHGs as a category of air emissions. It also looks at issues of temperature and precipitation trends to determine whether the affected environment or the proposed facilities would be affected by climate change. This EA does not attempt to measure the actual incremental effects of GHG emissions from the Proposed Action. There is a lack of consensus on how to measure such effects. Existing climate models have substantial variation in output, and they do not have the ability to measure the actual incremental effects of a project on the environment. Table 3-4 compares the estimated reduction in GHG emissions from the Proposed Action to the global, nationwide, and statewide GHG emissions. The estimated decrease would be minute.

Table 3-4. Global, Countrywide, and Statewide GHG Emissions

Scale	$C0_2e$ Emissions (MMT/year)	Change from the Proposed Action
Global	43,125	(0.000002%)
United States	5,249	(0.000020%)
Maine	16.8	(0.006136%)
Proposed Action	(0.001)	-

Sources: USAF 2022, USEIA 2016.
Note: MMT = million metric tons.

Maine is in the northeast climate region of the United States, where climate change is expected to contribute to increased temperature, flooding, and late-spring freezes. The seasonal climate, natural systems, and accessibility of certain types of recreation are threatened by declining snow and ice, rising sea levels, and rising temperatures. By 2035, the northeast is projected to be more than 3.6°F warmer on average than during the preindustrial era. This would be the largest increase in the contiguous United States and would occur as much as two decades before global temperatures reach a similar milestone. The northeast has experienced some of the highest rates of sea level rise and ocean warming in the United States, and this is projected to continue through the end of the century. Highly productive marshes, fisheries, ecosystems, and coastal infrastructure are sensitive to changing environmental conditions, including shifts in temperature, ocean acidification, sea level, storm surge, flooding, and erosion. Many of these changes are already affecting coastal and marine ecosystems, posing increasing risks to people, traditions, infrastructure, and economies (NCA 2018).

Table 3-5 outlines potential climate stressors and their effects on the proposed facilities. The Proposed Action in and of itself is only indirectly dependent on any of the elements associated with future climate scenarios (e.g., meteorological changes). At this time, no future climate scenario or potential climate stressor would have appreciable effects on any element of the proposed development. This review is consistent with the requirements outlined in EO 14008.

Table 3-5. Effects of Potential Climate Stressors

Potential Climate Stressor	Effects on the Proposed Action
Changes in precipitation patterns	negligible
Decline in snow and ice	negligible
Harm to water resources, agriculture, wildlife, ecosystems	negligible
Sea level rise	negligible
Temperature rise	negligible

Source: NCA 2018.

3.2.3.3 Alternative 1

Effects on air quality from Projects 1–8 and 10 would be the same as under the Proposed Action. Project 9's identified alternative is a long-range construction project and will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

3.2.3.4 No Action Alternative

No effects on air quality would be expected. Under the No Action Alternative, the construction, demolition, and renovation projects would not occur. Existing conditions would remain unchanged and there would be no effects on air quality.

3.3 NOISE

3.3.1 Definition of Resource

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, the distance between the noise source and the receptor, receptor sensitivity, and the time of day. Noise often is generated by activities essential to a community's quality of life, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. The hertz is the unit used to quantify sound frequency. The human ear responds differently to different frequencies. "A-weighting," measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of sound by humans. Table 3-6 lists sounds encountered in daily life and their dBA levels.

Table 3-6. Common Sounds and Their Levels

Outdoor Sound	Sound Level (dBA)	Indoor Sound
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998.

3.3.2 Existing Conditions

Background noise levels were estimated for the areas surrounding the BIA and the Bangor ANGB using the techniques specified in the *American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-Term Measurements with an Observer Present*. Table 3-7 outlines the land use categories, off-base noise sensitive areas and their distance to the proposed projects, and the estimated background noise levels in areas surrounding the airport (ANSI 2013). These estimates provide an indication of a range of sound levels in a given area; land use categories with estimated sound levels above 50 dBA have an uncertainty of approximately 10 dBA (ANSI 2013).

Table 3-7. Estimated Background Noise Levels

Land Use Category	Nearest Off-Base Noise Sensitive Area		Average Sound Level (dBA)	
	Direction	Distance	Daytime	Nighttime
Quiet suburban residential	North	2,700 feet	45	39
	South	6,800 feet		
	East	11,100 feet		
Rural residential	West	6,100 feet	40	34

Source: ANSI 2013.

3.3.3 Environmental Consequences

3.3.3.1 Significance Criteria

Noise effects would be considered significant if the Proposed Action would appreciably increase areas of incompatible land use surrounding the base or lead to a violation of any applicable federal, state, or local noise regulations.

3.3.3.2 Proposed Action

Summary. The Proposed Action would have short- and long-term less-than-significant effects on the noise environment. Short-term effects would be due to the use of heavy equipment during demolition and construction activities. Long-term effects would be due to the potential use of backup generators at the proposed facilities. The Proposed Action would not appreciably increase areas of incompatible land use surrounding the base or lead to a violation of any applicable local, state, or federal noise regulations.

Construction. Individual pieces of construction and demolition equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (FHWA 2006; USEPA 1971). With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active sites. All noise-sensitive areas within 800 feet of construction and demolition activities would experience some amounts of noise. These areas would include some on-base ANG facilities and areas where personnel would be present. However, construction and demolition activities would be confined to on-base areas and conducted primarily during daytime hours. Due to the temporary nature of the projects and the distance to nearby off-base areas, these effects would be negligible. Although construction- and demolition-related noise effects would be negligible, the following BMPs would be performed to reduce the already-limited noise effects:

- Construction and demolition would primarily occur during daytime hours;
- Equipment mufflers would be properly maintained and in good working order; and
- On-site personnel, and particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Operations. There would be no changes in the number or types of aircraft or training at the installation; therefore, no changes in the existing noise environment associated with these sources would be expected. Back-up generators at the proposed facilities would produce noise during periodic testing and use during power outages. There would be limited changes in traffic patterns and associated noise to support the proposed facilities at the installation. These changes to the overall noise environment would not be readily perceptible when compared to existing conditions, particularly in areas off the installation.

3.3.3.3 Alternative 1

Effects on noise from Projects 1–8 and 10 would be the same as under the Proposed Action. Project 9's identified alternative is a long-range construction project and will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

3.3.3.4 No Action Alternative

No effects on noise would be expected. Under the No Action Alternative, the construction, demolition, and renovation projects would not occur. Existing conditions would remain unchanged and there would be no effects on the noise environment.

3.4 WATER RESOURCES

3.4.1 Definition of Resource

Water resources include groundwater, stormwater, surface water, wetlands, floodplains, and coastal waters.

Groundwater. Groundwater is water that exists in the saturated zone beneath the earth's surface and includes underground streams and aquifers.

Stormwater. Stormwater is rain and snow melt that runs off surfaces such as rooftops, paved streets, parking lots, and other impervious surfaces.

Surface Water. Surface water generally consists of lakes, rivers, and streams.

Wetlands. Wetlands are identified as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Floodplains. Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters that are subject to periodic or infrequent inundation due to rain or melting snow.

Coastal Waters. Coastal waters are waters included within a state's coastal zone under its coastal zone management plan.

3.4.2 Existing Conditions

Groundwater. Most of Bangor ANGB is within the Lower Kenduskeag Stream watershed, but the northwestern tip is within the Lower Soudabscook Stream watershed. Both watersheds drain into Penobscot Bay and into the Atlantic Ocean. Two aquifers lie beneath Bangor ANGB (Texas A&M NRI 2018). In general, groundwater depths vary around the installation. Seasonal high water tables in soils from glacial till normally range from 1–4 feet below ground surface (BGS) to 10–30 feet BGS, and the groundwater flows to the southeast (ANG 2005).

Stormwater. There is minimal potential for heavy, high-velocity flows of stormwater at the facility due to the relatively flat topography of Bangor ANGB (MEANG 2017b). Bangor ANGB has eight excavated stormwater drainage features and four excavated stormwater management basins (ANG 2022). All these stormwater features were constructed in the upland to facilitate collecting and treating stormwater runoff. Constructed stormwater features (e.g., artificial lakes, drainages, or ponds) do not meet the criteria for wetlands or WOTUS (ANG 2022).

Stormwater from Bangor ANGB flows into Birch Stream and then into Kenduskeag Stream (Figure 1-1), which is designated Atlantic salmon critical habitat (Texas A&M NRI 2018). Bangor ANGB has an extensive drainage system located within the Birch Stream Urban Impaired Stream watershed (MEANG 2017b).

The installation developed a stormwater pollution prevention plan (SWPPP) that defines BMPs, sources of stormwater discharge and pollution, monitoring (including impaired waters monitoring), and procedures to manage erosion and stormwater at Bangor ANGB (MEANG 2017b). The main source for erosion and sediment control standards are from the Maine Erosion and Sediment Control BMP manual (MDEP 2016). The MEANG has a municipal separate storm sewage system permit that authorizes the direct discharge of stormwater and adherence to control measures which include illicit discharge detection and elimination, construction, post-construction, and pollution prevention (MDEP 2013). Under Section 402 of the CWA, construction or land-disturbing activity that creates a minimum of 1 acre of soil disturbance requires a permit from MDEP under the NPDES. Bangor ANGB has a Phase I Multi-Sector NPDES general stormwater permit from the EPA that requires visual monitoring at stormwater outfalls (Texas A&M NRI 2018).

Surface Water. One jurisdictional, intermittent stream, Stream 1, is approximately 163 linear feet and is located north of Maineiac Avenue in the north-central part of Bangor ANGB (USACE 2022, ANG 2014, 2022). Stream 1 flows beneath Maineiac Avenue through a culvert into Wetland 4 (Figure 3-1). Per the Final WOTUS Report, Stream 1 is within the jurisdiction of USACE under Section 404 of the CWA; however, Stream 1 does not overlap with project areas (Figure 3-1) (ANG 2022).

WOTUS are defined within the CWA, as amended, and jurisdiction is addressed by the EPA and the USACE (33 CFR Part 328). Section 401 of the CWA requires that any applicant for a federal license or permit to conduct an activity that could result in a discharge into WOTUS provide the


101 ARW Bangor ANGB
Surface Water Features
Figure 3-1
N
0 500 1,000 Feet
Union St.
Maine Ave.
Griffin Rd.
Ashley Ave.
Maineiac Ave.
Glenn Ave.
Marran St.
Downing Rd.
Wetland 1
Wetland 2
Wetland 3
Wetland 4
Wetland 5
Wetland 6
Stream 1
9a
9b
10
417
420
489
505
510
514
515
542
Enlarged View of Project 1 Area
25' Buffer
Projects:
1. Main Gate AT/FP (outside gate)
2. Main Gate AT/FP (inside gate)
3. Construct Fuel Cell Hangar
4. Demolish B510
5. Renovate B515
6. Demolish B489 and B505
7. ADAL to B514
8. Demolish B542
9a. 2nd AT/FP Gate: Union St.
9b. 2nd AT/FP Gate: Downing Rd.
10. ADAL to B417
LEGEND
Installation Boundary
Proposed Project Location
New Property Line (Property Acquired from City of Bangor)
Intermittent Stream
Palustrine Emergent Wetland
Palustrine Forested Wetland
Palustrine Scrub-Shrub Wetland
Note: Project areas shown are approximate. Sources: ANG 2021, Jacobs 2015, NGB 2022.

permitting agency a certification from the state in which the discharge originates certifying that the license or permit complies with CWA requirements, including applicable state water quality standards.

Wetlands. Wetlands are shown on Figure 3-1 and listed in Table 3-8. All of the wetlands located on Bangor ANGB are within the jurisdiction of USACE under Section 404 of the CWA and meet the definition of a wetland under the Maine Natural Resources Protection Act (NRPA) and would be subject to permitting requirements under the NRPA (ANG 2022, USACE 2022). Per the Final WOTUS Report, the boundaries of the waters of the U.S. and wetlands do not overlap with project areas (Figure 3-1) (ANG 2022, Jacobs 2015). The Final WOTUS Report identified areas within Wetland 2 and Wetland 3 that exhibit characteristics of vernal pools but according to Maine Department of Inland Fisheries & Wildlife (MDIFW) Significant Wildlife Habitat (SWH) maps there are no significant vernal pools (SVP) located within Bangor ANGB (ANG 2022; see also MDIFW letter dated October 28, 2021 in Appendix A). A vernal pool survey is not required for Bangor ANGB (ANG 2022). SVPs are protected by law under the Maine NRPA, are regulated as Significant Wildlife Habitat, and require a Pre-construction Notification if discharge of dredged or fill material is proposed within a vernal pool within WOTUS. The performance standard for SVP includes the vernal pool and an area within a 250-foot radius of the spring or fall high water mark of the pool. Although further details on the location of areas with vernal pool characteristics within Wetland 2 and Wetland 3 are not available it was determined that neither of the potential vernal pools are within a 250-foot radius of a project's Area of Potential Effect. The western boundary of Wetland 3 is approximately 260 feet away from Project 6 and Wetland 2 is not in close proximity to any projects.

Table 3-8. Wetlands on Bangor ANGB

Wetland Number	Status	Size (acres)	Type
Wetland 1	Jurisdictional	0.27	Palustrine scrub-shrub
Wetland 2	Jurisdictional	0.58	Palustrine forested
Wetland 3	Jurisdictional	1.32	Palustrine forested
Wetland 4	Jurisdictional	0.13	Palustrine scrub-shrub
Wetland 5	Jurisdictional	0.03	Palustrine emergent
Wetland 6	Jurisdictional	0.52	Palustrine emergent

Sources: ANG 2022, USACE 2022

The USACE regulates the discharge of dredged or fill material into waters of the United States which includes wetlands in accordance with Section 404 of the CWA. Section 401 of the CWA requires states to review Section 404 permits to determine if the project meets the state's water quality certification requirements. The MDEP issues Section 401 water quality certification in the state. When USACE determines that a wetland is non-jurisdictional, it must be reviewed by the MDEP under the NRPA permitting program. The MDEP issues or denies CWA 401 certifications and state isolated wetland/vernal pool permits. The Maine NRPA permits (Title 38 Maine Revised Statutes Annotated Section 480) are required when an "activity" is located in, on, or over protected

natural resources; located adjacent to a coastal wetland, great pond, river, stream, or brook or significant wildlife habitat within a freshwater wetland; or in certain freshwater wetlands. "Activities" are defined as (a) dredging, bulldozing, removing or displacing soil, sand, vegetation, or other materials; (b) draining or otherwise dewatering; (c) filling, including adding sand or other material to a sand dune; or (d) any construction, repair, or alteration of any permanent structure (MDEP 2021). In accordance with EO 11990, a Finding of No Practicable Alternative (FONPA) must be prepared and approved by ANG for all projects affecting wetlands.

Floodplains. Risk of flooding typically depends on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by FEMA, which defines flood hazard areas as the area that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year. The 1 percent annual chance flood is also referred to as the base flood or 100-year flood. The 500-year flood zone is characterized as 0.2 percent annual chance flood hazard. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities to reduce the risks to human health and safety. The City of Bangor reviews projects proposed in designated flood hazard areas in the city and may have stricter requirements than those identified by FEMA. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and diversification of plants and animals.

AFI 32-1021, *Planning and Programming Military Construction Projects*, and EO 11988 provide policy and requirements to avoid construction of new facilities within the 100-year floodplain, where practicable. In accordance with EO 11990, a FONPA must be prepared and approved by ANG for all projects affecting floodplain areas. Bangor ANGB is located outside of the 100-year and 500-year floodplains as identified by the FEMA and shown in Figure 3-2 (FEMA 2002).

Coastal Waters. The Federal Coastal Zone Management Act (CZMA) of 1972 requires that federal agency activities be consistent with the state's federally approved Coastal Management Program. Established in 1978, the Maine Coastal Program (MCP) is administered by the Maine Department of Marine Resources (MDMR 2020). The MCP enforces the state standards and criteria of state environmental permitting, licensing laws, and regulations and has the authority to review federal actions that affect the coastal uses or resources of the state to ensure that the actions are consistent with the MCP's "enforceable policies." Federal land is exempted from the coastal zone, but reasonably foreseeable effects from federal actions on properties on the use of land, water, or natural resources are subject to federal consistency review (MDMR 2020). Activities supported or conducted by a federal agency that require a federal license or permit would be subject to federal consistency review, taking the form of a consistency determination, a negative determination, or a determination that no further action is necessary. A federal agency must submit a consistency determination to the MCP for any federal agency activity that it determines would affect any land or water use or natural resource of the Maine coast zone (Maine

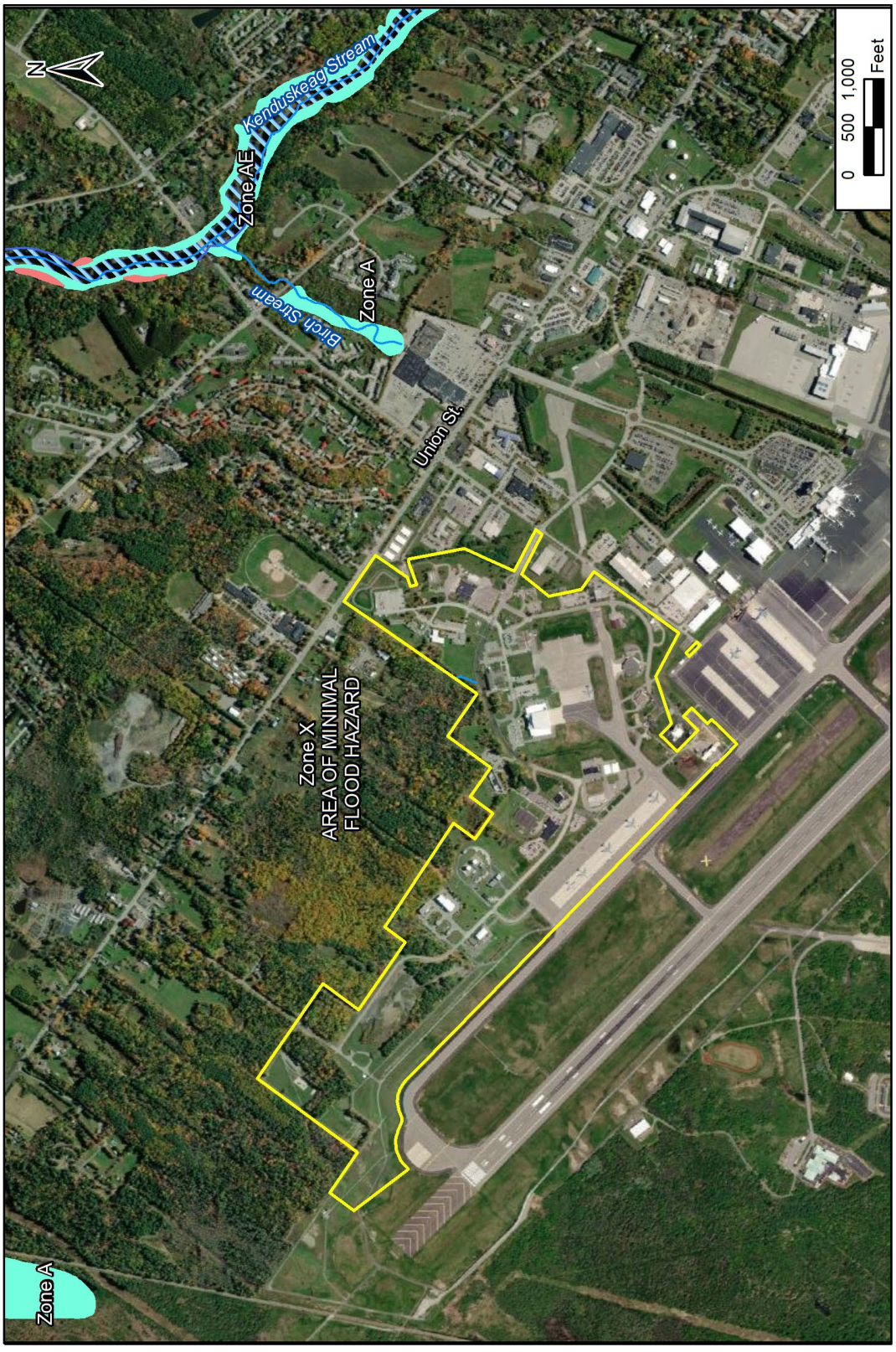

N
Kenduskeag Stream
Zone AE
Birch Stream
Zone A
Union St.
Zone X
AREA OF MINIMAL
FLOOD HAZARD
Zone A
0 500 1,000 Feet
101 ARW Bangor ANGB
Floodplains
LEGEND
Installation Boundary
Stream
Floodway
100-Year Flood Zone
500-Year Flood Zone
Sources: ANG 2021, FEMA 2022, NHD 2021.

Figure 3-2

DMR MCP 2022). If there is an Objection to the Consistency Certification, the action cannot be implemented.

Bangor ANGB is within the coastal management area of the MCP and is subject to coastal management regulations. The MCP coastal zone starts at the inland boundary of Bangor to the outer limit of Maine's territorial waters, which is 3 nautical miles (Figure 3-3).

3.4.3 Environmental Consequences

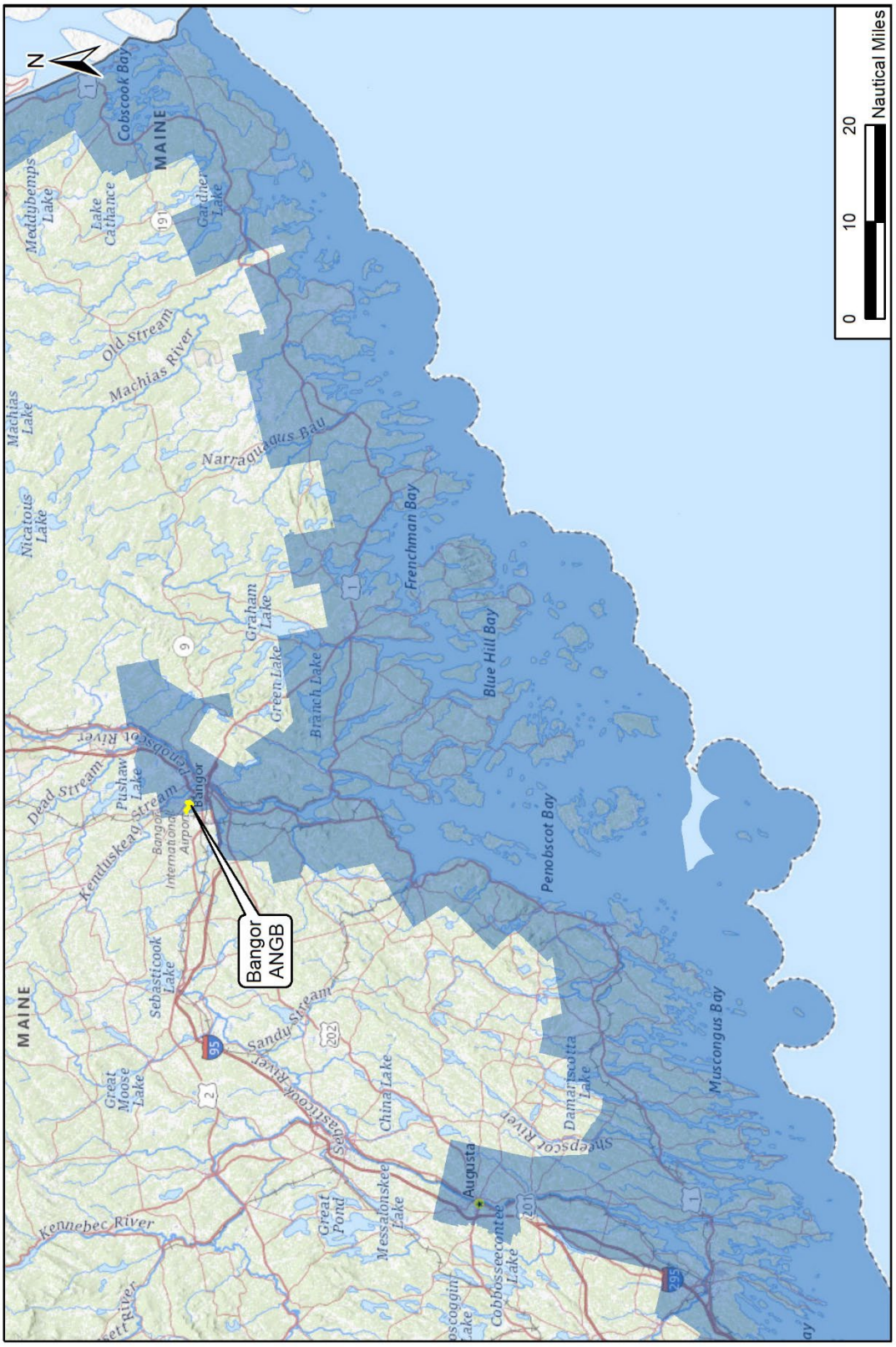
3.4.3.1 Significance Criteria

Effects on water resources would be considered significant if the proposed activities would reduce water availability or supply, exceed safe annual yield of water supplies, adversely affect water quality, damage or threaten hydrology, or violate water resources laws or regulations.

3.4.3.2 Proposed Action

Summary. The Proposed Action would have short- and long-term less-than-significant effects to water resources. Short-term minor adverse effects would be due to site-specific temporary disturbance during construction, demolition, and renovation. Long-term minor adverse effects would be due to ongoing activities at the base. Proposed activities would not reduce water availability or supply, exceed safe annual yield of water supplies, adversely affect water quality, damage or threaten hydrology, or violate water resources laws or regulations. The MDEP, Bureau of Land Resources reviewed the proposed projects and did not identify potential issues with permitting these projects (see Maine DEP letter dated October 12, 2021 in Appendix A).

Construction. The construction, demolition, and renovation activities would have site-specific temporary effects on some water resources. Construction and demolition could result in ground surface disturbance, which could cause soil erosion and subsequent transport of sediment via stormwater, and could lead to potential construction equipment leaks of petroleum, oil, and lubricants (POLs) that also could be transported via stormwater. However, potential effects would be minimized through proper implementation of environmental protection requirements of the Phase I Multi-Sector NPDES general stormwater permit and SWPPP; following policies and procedures as detailed in erosion-and-sediment control plans and spill prevention response plan (SPRP); and regulatory agency coordination for required permits prior to ground-breaking activities (MEANG 2017b). Implementing the SWPPP and Bangor ANGB Integrated Natural Resources Management Plan (INRMP) BMPs would protect water quality for federally endangered Atlantic salmon (Texas A&M NRI 2018; MEANG 2017b). Any construction or land-disturbing activity that would create greater than 1 acre of soil disturbance would require a NPDES General Permit for Construction Activity from MDEP. In accordance with EISA Section 438, a variety of stormwater management practices would be incorporated, to the maximum extent technically feasible, in the proposed development and redevelopment projects to maintain or restore predevelopment site hydrology.



Sources: ANG 2021, MCP 2022, USGS Topo 2022.

Figure 3-3

There would be no effects on wetlands or Stream 1. No discharge of dredged or fill material would be made into wetlands or the stream and would accordingly not require a CWA Section 404 permit or Section 401 Water Quality Certification or Maine NRPA permit. The project Areas of Potential Effect would not overlap with the wetlands or the stream on Bangor ANGB (Figure 3-1) (ANG 2022, Jacobs 2015). The 101 ARW would comply with plans, permits, and regulations described in the previous paragraph and implement and maintain erosion and sediment control BMPs (e.g., silt fencing) during all phases of construction to prevent sediment and/or debris from entering the wetlands or stream on and adjacent to Bangor ANGB. A 25-foot buffer would be maintained around Wetland 5 to prevent incidental clearing or grading.

The Proposed Action would not impact floodplains. The Proposed Action would be completed in compliance with the CZMA. In coordination with the MCP, the 101 ARW would prepare the CZMA federal consistency review for each individual project as the projects would be implemented.

Renovation projects under the Proposed Action would have short-term less-than-significant adverse effects on the water resources of Bangor ANGB. Renovation does not involve the addition of more impervious surface and would not involve the erosion impacts that are associated with construction and demolition.

Operations. There would be less-than-significant effects to water resources due to the maintenance and operations associated with the Proposed Action. The nature and overall level of operations at the base would be similar to that without the Proposed Action. Under the Proposed Action, the 101 ARW would continue to conduct national security activities in the newly constructed and renovated facilities; therefore, this action would not be regulated under Maine's multi-sector general permit for stormwater discharge associated with industrial activity.

3.4.3.3 Alternative 1

Effects on water resources from Projects 1–8 and 10 would be the same as under the Proposed Action. Project 9's identified alternative is a long-range construction project and will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

3.4.3.4 No Action Alternative

No effects on water resources would be expected. Under the No Action Alternative, the construction, demolition, and renovation projects would not occur. The existing conditions of water resources would remain unchanged.

3.5 BIOLOGICAL RESOURCES

3.5.1 Definition of Resource

Biological resources include native and naturalized plants and animals and the habitats in which they occur. These include vegetation; wildlife; and threatened, endangered, and sensitive species in a specific area. Biological resources are integral to ecosystem integrity. The existence and

preservation of biological resources are intrinsically valuable to society for aesthetic, recreational, and socioeconomic purposes, and a system of legal requirements and best practices exists to protect them for these purposes.

3.5.2 Existing Conditions

3.5.2.1 Vegetation

The vegetation within the boundary of Bangor ANGB is highly disturbed, developed, or maintained grasslands (Texas A&M NRI 2018). A flora survey of the entire Bangor ANGB conducted in 2020 identified 189 species of plants that were delineated in three habitat types: developed/maintained vegetation, forest, and wetland (AGEISS and HDR 2022). Appendix D lists these plant species and identifies them as native (119 species), introduced (58 species), or both native and introduced (12 species). The developed/maintained vegetation is the most common habitat type on Bangor ANGB and covers approximately 130 acres; forested areas cover approximately 33 acres; and wetland covers approximately 2.8 acres (AGEISS and HDR 2022). The major forest types that surround Bangor ANGB are northern hardwoods and northern hardwoods-spruce forests (Texas A&M NRI 2018).

No plant species documented during the 2020 flora survey are on the Maine Natural Areas Program's Rare, Threatened, and Endangered Plant Taxa List (MDACF 2015).

3.5.2.2 Wildlife

The wildlife that inhabit Bangor ANGB is adapted to high levels of human activity and disturbed habitat (Texas A&M NRI 2018). Formal wildlife surveys on Bangor ANGB include a 2020 fauna survey, a bat survey, and a survey conducted for the BASH plan or other surveys for aviation hazard prevention. The 2020 fauna survey of the entire Bangor ANGB recorded 47 bird species, 15 mammal species, 5 amphibian species, and two insect species (AGEISS and HDR 2022). Appendix E lists the species and the habitats where they were observed.

The area of review for the 2020 bat survey was the entire Bangor ANGB. Bat acoustic surveys conducted in August 2020 detected six species: big brown bat (*Eptesicus fuscus*), tri-colored bat (*Perimyotis subflavus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), little brown bat (*Mytois lucifugus*), and silver-haired bat (*Lasionycteris noctivagans*) (HDR 2021). Forested areas at Bangor ANGB provide roosting opportunities for federally listed and non-listed bats in tree cavities, under loose bark, or in snags (dead trees) (HDR 2021). Maternity roosts for big brown bats and little brown bats might occupy building structures (e.g., under roofing, siding), though no observations of bats or signs of bats (e.g., guano or urine staining) were made during surveys of installation structures (HDR 2021).

The BASH plan identified coyotes (*Canis latrans*), moose (*Alces americanus*), and white-tailed deer (*Odocoileus virginianus*) as high-risk, non-avian species in the airfield (MEANG 2017a). Bangor ANGB supports BIA's efforts to repair breaches in the airport operating area to reduce

wildlife access to the airfield. The 2015 vegetation survey reported incidental observations of 17 wildlife species (3 amphibians, 12 birds, and 2 mammals), none of which have protected status (ANG 2015).

3.5.2.3 Threatened, Endangered, or Sensitive Species

Federally Listed Species. There are three federally protected species with the potential to occur in Penobscot County as identified by the USFWS Information for Planning and Conservation website. These include one species of fish, the Atlantic salmon (*Salmo salar*); and two mammals, the Canada lynx (*Lynx canadensis*) and the northern long-eared bat (*Myotis septentrionalis*) (USFWS 2021a).

Atlantic salmon is listed as endangered under the ESA (USFWS 2021a). This species has critical habitat that overlaps with Bangor ANGB. The critical habitat designation is based on the connectivity of Birch Stream, which receives stormwater flow from Bangor ANGB, to Kenduskeag Stream, where Atlantic salmon are reported to inhabit. Though Atlantic salmon do not pass into Birch Stream due to steep falls, the connectivity between the stormwater flow and Kenduskeag Stream is important to the water quality of their habitat (Texas A&M NRI 2018). See Section 3.4.3 for a discussion of water quality impacts on Atlantic salmon.

The Canada lynx is listed as threatened under the ESA anywhere it is found (USFWS 2021b). This species is a medium-sized cat with large paws and a short tail with a black tip. Canada lynx inhabit taiga (coniferous forest of high northern latitudes) in areas with high density of snowshoe hares. Bangor ANGB does not provide habitat for Canada lynx and it was not observed during the 2020 fauna survey, therefore, any occurrence would be rare (AGEISS and HDR 2022, Texas A&M NRI 2018).

The northern long-eared bat is listed as threatened under the ESA anywhere it is found and critical habitat is not established. White-nose syndrome is the main threat to this species, causing significant losses of the population (USFWS 2021c). It is a medium-sized (3–3.7 inches body length) bat that is distinguished from other species in the genus by its long ears. Caves and mines serve as winter habitat; in the summer they roost in colonies or singly under peeling bark or cavities/snags in trees. Tree species favored by this species include black locust (*Robinia pseudoacacia*), American elm, shagbark hickory (*Carya ovata*), red maple, sugar maple, oaks, and white pine (USDA 2016). At dusk, northern long-eared bats hunt for insects in the understory of forested areas (USFWS 2021c). The northern long-eared bat was not detected during the 2020 bat survey (HDR 2021). The MDIFW was consulted regarding the impacts of the Bangor ANGB projects on bat species, including the northern long-eared bat, and does not anticipate significant impacts to any bat species (see MDIFW letter dated October 28, 2021 in Appendix A).

Migratory Birds. The Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) protect migratory birds and bald (*Haliaeetus leucocephalus*) and golden (*Aquila chrysaetos*) eagles, respectively, from illegal take except under permit. There are 11 migratory

bird species protected by the MBTA that potentially occur in Penobscot County, and all of them are Birds of Conservation Concern (USFWS 2021a). The most suitable habitat for the migratory birds is located in the forested and wetland areas of Bangor ANGB. Avoidance of tree management or tree removal from April to October would reduce adverse effects on these species (Texas A&M NRI 2018). In addition, Bangor ANGB is in the Atlantic Flyway for migratory birds, and the greatest risk for bird strikes is during migration periods (spring and fall) due to the airport's proximity to the Penobscot River corridor (MEANG 2017a). Bangor ANGB protects migratory birds through the implementation of the BASH plan and supports the implementation of BIA Wildlife Hazard Management Plan (BGR 2015, MEANG 2017a).

The bald eagle is one species protected by the BGEPA that may occur in Penobscot County (USFWS 2021a). The bald eagle has been documented on Bangor ANGB as a non-resident (Texas A&M NRI 2018). If nests are established on Bangor ANGB, construction and major disturbances within a 660-foot radius of the nest should be avoided from February 1 to August 15 (USFWS 2021d).

State-Listed Species. Rare plants have not been documented on Bangor ANGB (AGEISS and HDR 2022, ANG 2015). The Orono sedge (*Carex oronensis*, state-threatened) is the only rare plant species with potential to occur on Bangor ANGB (AGEISS and HDR 2022). This species is adapted to disturbance and grows in open habitat, but the habitat on Bangor ANGB, located in the northwest corner of the installation, that fits these criteria is considered suboptimal (ANG 2015). Orono sedge was not documented during the 2020 flora survey (AGEISS and HDR 2022).

Three state-listed bat species may inhabit Bangor ANGB: the eastern small-footed bat (*Myotis leibii*, state-threatened), little brown bat (*Myotis lucifugus*, state-endangered), and northern long-eared bat (state-endangered) (HDR 2021). Only one of these species, the little brown bat, was detected acoustically at six of the seven bat survey locations (HDR 2021). The MDIFW was consulted regarding the impacts of the Bangor ANGB projects on bats and does not anticipate significant impacts to any bat species (see MDIFW letter dated October 28, 2021 in Appendix A). Maternity roosts of big brown bats and little brown bats may also be found in buildings. To the extent feasible, the demolition of structures or large-scale renovations to roof and wall areas should be conducted outside of the maternity period (May 1 to August 30) if bats are thought to occupy buildings on the installation (HDR 2021).

Two state-listed bird species have been documented on Bangor ANGB or BIA: the peregrine falcon (*Falco peregrinus*, state-endangered) and the upland sandpiper (*Bartramia longicauda*, state-threatened) (Texas A&M NRI 2018). Neither of these species were observed during the 2020 fauna survey (AGEISS and HDR 2022). The MDIFW SWH map indicates no known presence of these species that are subject to protection under the Maine NRPA as verified by Appendix A SWH map (see MDIFW letter and map dated October 28, 2021 in Appendix A). The peregrine falcon is attracted to the open areas of the airport (Maine.gov 2021a). The upland sandpiper prefers the grassy expanses of airports (Maine.gov 2021b). Avoidance of mowing,

plowing, or pesticide use during the nesting season (May 1 to August 5) is recommended to avoid impacts to the species. Continued support of the BASH plan will minimize take of these species. Six bird species with Maine Species of Concern and Species of Greatest Conservation Need status were identified on Bangor ANGB: veery (*Catharus fuscescens*), eastern wood peewee (*Contopus virens*), least flycatcher (*Empidonax minimus*), wood thrush (*Hylocichla mustelina*), yellow warbler (*Setophaga petechia*), and eastern kingbird (*Tyrannus tyrannus*) (AGEISS and HDR 2022). These species prefer forested and wetland habitat.

Other Maine Species of Concern that have been observed on Bangor ANGB include the northern leopard frog (*Lithobates pipiens*). This species inhabits freshwater aquatic environments and grass and shrubland habitats (AGEISS and HDR 2022).

3.5.3 Environmental Consequences

3.5.3.1 Significance Criteria

Biological resources effects would be considered significant if the action would reduce the distribution or viability of species or habitats of concern, including take of a listed species.

3.5.3.2 Proposed Action

Summary. The Proposed Action would have short-term less-than-significant effects to biological resources. Short-term minor adverse effects would be due to site-specific temporary disturbance during construction. Proposed activities would not adversely affect existing vegetation or aquatic and terrestrial wildlife resources, including threatened and endangered species or rare species. Effects to biological resources would not reduce the distribution or viability of species or habitats of concern and would not violate biological resources laws or regulations. There would be less-than-significant effects regarding loss, degradation, or fragmentation of wildlife habitat.

Construction. Under the Proposed Action, construction, demolition, and renovation activities would have site-specific and temporary less-than-significant effects on biological resources. The proposed activities would require vegetation removal, but it would primarily be mowed and landscaped vegetation. The base would follow the recommended landscaping practices in its INRMP to aid recovery from ground disturbance, implementing environmentally beneficial landscaping practices including using native seed mixtures, plant species, and low maintenance grasses to reduce grounds maintenance, provide green infrastructure, and benefit wildlife such as pollinators without increasing the risk of BASH. The proposed projects would be wholly or partially on developed or developable areas that would require minimal vegetation removal. Construction activities would displace locally common wildlife species that are adapted to high levels of human activity and disturbance. However, any wildlife disturbed by construction activities could temporarily or permanently relocate to similar habitat nearby.

If the Proposed Action involves tree or snag removal on Bangor ANGB, it may impact northern long-eared bat; therefore, consultation with USFWS pursuant to Section 7(a)(2) of the ESA may

be required. However, the USFWS's 4(d) *Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* may fulfill the obligation for Section 7(a)(2) consultation for this species (USFWS 2016). Because Bangor ANGB is not located within 0.25 miles of a known hibernaculum or located within 150 feet of a known occupied maternity roost tree, incidental take of northern long-eared bat from the Proposed Action may not be prohibited; however, USFWS concurrence would be obtained prior to the activity (USFWS 2016). The Proposed Action may affect northern long-eared bats, but adverse impacts are not likely given the absence of detection at Bangor ANGB (HDR 2021). In addition, as design documents are finalized, when feasible, the Proposed Action will avoid negative impacts to established vegetation. When possible, and to the maximum extent practicable, the guidelines set by the USFWS for northern long-eared bats management strategies would be implemented (i.e., no clearing of suitable habitat in the summer).

To the maximum extent feasible, if bats occupy buildings on the installation, building demolition or large-scale renovations to roof and wall areas should be conducted outside of the maternity period of big brown bats and little brown bats (May 1 to August 30) (HDR 2021). Compliance with the BASH plan and avoidance of tree removal in forested and wetland areas of Bangor ANGB during the migratory season will help to minimize impacts to migratory birds.

Operations. The nature and overall level of operations at the base would be similar to that without the Proposed Action. The Proposed Action would not have any additional effects to vegetation, wildlife, or threatened and endangered species when compared to existing conditions; therefore, no effects to biological resources would be expected.

3.5.3.3 Alternative 1

Effects on biological resources from Projects 1–8 and 10 would be the same as under the Proposed Action. Project 9's identified alternative is a long-range construction project and will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

3.5.3.4 No Action Alternative

No effects on biological resources would be expected. Under the No Action Alternative, the construction, demolition, and renovation projects would not occur. The existing conditions of biological resources would remain unchanged.

3.6 TRANSPORTATION AND CIRCULATION

3.6.1 Definition of Resource

Transportation and circulation is defined as the movement of goods and individuals from place to place and the associated infrastructure. In general, transportation refers to air, water, and ground vehicles and the services that make use of that infrastructure.

3.6.2 Existing Conditions

Four main surface roads serve the base. Union Street is a primary east-west thoroughfare on the north side of the base. Maine Avenue runs around the airport and enters the base as the main access road. Godfrey Boulevard is the primary access road to the airport, and Griffin Road runs perpendicular to Union Street and provides the most direct access to the installation from Union Avenue.

On base, the primary road is Maineiac Avenue which continues through the center of the installation, passing by the maintenance hangar and the 101 ARW Headquarters approaching the primary parking apron. The roadway then takes a 90 degree right turn and becomes Maran Street and follows perpendicular to the taxiway and runway. This road services all primary on-base facilities and serves as a secondary road leading to the Munitions Storage and Inspection Complex on the north end of the installation. Several other secondary roads serve key areas, including Pesch Circle and Ashley Avenue. Tertiary roadways allow access to several facilities and parking aprons. The Bangor ANGB transportation network operates at acceptable levels of service with plenty of available capacity (Mason & Hanger 2016).

Bangor ANGB is accessed primarily by the entry control facility located on Maineiac Avenue. This primary entry control facility is on the eastern side of the installation. A secondary gate exists on the northwest extent of the base and is only accessed during high traffic and/or emergency situations.

Parking for privately owned vehicles is spread throughout the installation. With a few exceptions in the northeastern portion of the base and around the aircraft maintenance hangar, every building has a dedicated parking lot. During normal day-to-day operations, parking is more than adequate to meet the demands of installation personnel (Mason & Hanger 2016).

3.6.3 Environmental Consequences

3.6.3.1 Significance Criteria

Traffic effects would be considered significant if the Proposed Action would (1) require long-term closure of off-post roadways, (2) substantially increase congestion on any primary off-post roadways, or (3) otherwise interfere with the functionality of the regional transportation network.

3.6.3.2 Proposed Action

Summary. The Proposed Action would have short-term less-than-significant effects and long-term beneficial effects on transportation and traffic. Short-term effects would result from construction vehicles and from small changes in localized traffic patterns due to the construction and demolition projects. Long-term beneficial effects would result from upgrades to the main gate. The Proposed Action would not (1) require long-term closures of off-post roadways, (2) substantially increase congestion on any primary off-post roadways, or (3) otherwise interfere with the functionality of the regional transportation network.

Construction. The construction and demolition activities would require use of personal operating vehicles and delivery trucks to and from the sites. Construction traffic would compose a small percentage of the total existing traffic both on and off the installation and would occur at various times and various locations throughout the immediate area over a 5-year period. Road closures or detours to accommodate utility system work would be expected in some on-base areas, creating short-term traffic delays. These effects would be primarily confined to on-base areas, would be temporary in nature, and would end with the construction phase.

There would be an incremental increase in off-base traffic from worker commutes and delivery trucks in support of the on-base demolition and construction activities. The local roadway infrastructure would be sufficient to support this limited increase in construction vehicle traffic, and there would be no perceptible change in off-base traffic conditions when compared to existing conditions. Although the effects would be minor, the following measures would be implemented:

- All demolition and construction vehicles would be equipped with backing alarms, two-way radios, and slow-moving-vehicle signs when appropriate;
- Demolition and construction traffic would be routed and scheduled to minimize conflicts with other traffic; and
- Staging areas would be located to minimize traffic impacts.

Operations. The Proposed Action would not introduce long-term increases in personnel or traffic at the base. There would be no new permanent ongoing sources of congestion; therefore, no long-term changes in traffic would occur. The upgrades to the Main Gate would have long-term moderate beneficial effects to on-base transportation infrastructure and traffic. These beneficial effects would be due to the reconfiguration of the gate and the addition of traffic-calming measures.

3.6.3.3 Alternative 1

Effects on transportation and circulation from Projects 1–8 and 10 would be the same as under the Proposed Action. Project 9's identified alternative is a long-range construction project and will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

3.6.3.4 No Action Alternative

No effects on transportation would be expected. Under the No Action Alternative, the construction, demolition, and renovation projects would not occur. Existing conditions would remain unchanged and there would be no effects on transportation or traffic.

3.7 CULTURAL RESOURCES

3.7.1 Definition of Resource

Cultural resources are defined as prehistoric or historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological, architectural, and traditional resources. Archaeological resources comprise artifacts, features, or other archaeological indications of past human life or activities from which archaeologists interpret information about history or prehistory. Architectural resources include buildings, structures, landscapes, and objects that document the history of an area and possibly the history that predates the area. The cultural resources section of NGB, in consultation with the Maine SHPO, determined the Area of Potential Effects (APE) for the proposed IDP at Bangor ANGB to be the areas where ground disturbance is occurring, staging areas are located, and facilities / infrastructures are being renovated or demolished.

Section 106 of the NHPA require federal agencies to determine whether any archaeological, historic, or architectural resources that are listed or are eligible to be listed on the NRHP could potentially be affected by the Proposed Action. Generally, a historic property must be more than 50 years old to be considered for inclusion on the NRHP, but might also include a Cold War era resource (constructed prior to 1990), a Native American cultural property, or a Criterion Consideration G property—a district, site, building, structure, or object that might achieve "exceptional" significance within the last 50 years and be considered eligible for the NRHP.

3.7.2 Existing Conditions

3.7.2.1 Archaeological and Architectural Cultural Resources

The *Cultural Resources Survey, Architecture and Archaeology of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine* was completed in March 2008. The results of the survey are included in the 2009 Integrated Cultural Resource Management Plan (ICRMP) for the Bangor International Airport and South Portland Air National Guard Station, which serves as a management plan for the treatment of cultural resources at Bangor ANGB.

The 2008 survey concluded that archaeological testing was not necessary at Bangor ANGB due to the low cultural sensitivity of the project area. For architectural resources, the survey report identified and evaluated twenty facilities under the criteria established in the NRHP. In addition to the twenty surveyed facilities, Bangor ANGB had one previously determined NRHP-eligible property, Building 510, recognized as the East Coast Operations Center for the U.S. Air Force Over-the-Horizon-Backscatter (OTHB) Radar System. In 2007, Bangor ANGB and Maine State Historic Preservation Office (ME SHPO) entered into a Memorandum of Agreement (MOA) regarding an adverse effect to the array. In the time since the executed MOA and the proposed IDP action, ANG demolished the two signal arrays, which left Building 510 as the only extant structure of the OTHB. Following the evaluation of the twenty identified facilities, the NGB

determined (with ME SHPO concurrence) that none were individually eligible for inclusion in the NRHP and that no historic district is present at Bangor ANGB.

For the proposed Bangor IDP project, the USACE and NGB contracted with a cultural resource firm to evaluate Building 515 that would be directly impacted by the project, Building 420 that the ICRMP identified as needing evaluation, and Building 510, the sole remaining structure of the OTHB that is proposed for demolition. Based on the evaluations, NGB determined that buildings 420, 510, and 515 are not NRHP eligible and that the proposed IDP action will result in no historic properties affected (Table 3-9). The ME SHPO concurred with NGB in a letter dated May 25, 2022 (Appendix A).

Table 3-9. Structures at 101 ARW Bangor ANGB Affected by the Proposed Undertaking

Facility	Building Type	Year Built	Previous NRHP Determination	2022 Determination	Proposed Action
417	Dining Facility/Barracks	1986	Not eligible	N/A	Construct addition and make interior renovations
420	Commissary	1987	Not Evaluated; to be evaluated relative to NRHP Criterion Consideration G for Cold War Resources	Not eligible	None; in viewshed of Projects 1, 2, 3, 6, and 10
489	Reserve Forces Operational Training	1986	Not eligible	N/A	Demolition
505	Reserve Forces Operational Training	1985	Not eligible	N/A	Demolition
510	Heating Facility	1984	Eligible as a Contributing Resource	Not eligible	Demolition
514	Communications Facility	1997	Not evaluated; post Cold War	N/A	Construct addition
515	ASE shop/storage building	1960	Not eligible under NRHP Criterion Consideration G for Cold War Resources; to be evaluated for NRHP Criteria A, B, C, & D	Not eligible	Interior renovation
542	Fuel Systems Maintenance Dock Hangar	1996	Not evaluated; post Cold War	N/A	Demolition

Note: N/A = not applicable.

3.7.2.2 Traditional Cultural Resources

Currently, there are no known traditional cultural resources, including Traditional Cultural Properties or sacred sites, within the Bangor ANGB. For this Proposed Action, the NGB will consult with five federally recognized tribes identified as attaching religious or cultural significance to the property. These tribes will be consulted on a range of issues including the effects of undertakings on cultural resources, the identification of possible traditional cultural resources, and protocols for issues of concern. The five tribes are listed below.

- Aroostook Band of Micmac Indians.
- Houlton Band of Maliseet Indians.
- Passamaquoddy Tribe, Indian Township Reservation.
- Passamaquoddy Tribe, Pleasant Point Reservation.
- Penobscot Nation.

NHPA Section 106 consultation letters were sent to the tribes via U.S. Postal Service (USPS) Certified Mail and Return Receipt on October 18, 2021, and the USPS Return Receipts confirmed that the letters were received by the tribes. To date, responses were received from the Passamaquoddy Tribe and the Penobscot Nation, stating that the proposed projects would not have any impact on cultural and historical concerns to their tribes. Copies of the letters are in Appendix A.

3.7.3 Environmental Consequences

3.7.3.1 Significance Criteria

Significant effects to historic properties or significant tribal resources can occur from the physical alteration, damage, or destruction of all or part of a resource. Significant indirect impacts can occur from alternations to characteristics of the surrounding environment that contribute to the importance of a resource, such as altering visual, atmospheric, or audible elements that are out of character with a property or setting.

Under Section 106 of the NHPA, an action might have no effects on historic properties (no historic properties finding), no adverse effects on historic properties, or adverse effects on historic properties. An adverse effect under Section 106 of the NHPA would not necessarily be significant under NEPA if the effect was not considered substantial and could be mitigated. Measures developed to minimize or mitigate adverse effects on historic properties under Section 106 of the NHPA could result in an action having no significant impacts on cultural resources under NEPA.

3.7.3.2 Proposed Action

Summary. The implementation of the Proposed Action would not affect historic properties or Tribal cultural and spiritual resources. For cultural resources and Section 106 of the NHPA there would be no historic properties affected. There would be no effects to resources listed in or eligible for the NRHP. With regards to NEPA and cultural resources, there would be no significant impacts to cultural resources.

Construction. The implementation of the Proposed Action would not affect historic properties or Tribal cultural and spiritual resources. For cultural resources and Section 106 of the NHPA there would be no historic properties affected. There would be no effects to resources listed in or eligible for the NRHP. With regards to NEPA and cultural resources, there would be no significant impacts to cultural resources.

Operations. The implementation of the Proposed Action would not affect historic properties or Tribal cultural and spiritual resources. For cultural resources and Section 106 of the NHPA there would be no historic properties affected. There would be no effects to resources listed in or eligible for the NRHP. With regards to NEPA and cultural resources, there would be no significant impacts to cultural resources.

3.7.3.3 Alternative 1

The implementation of the Proposed Action would not affect historic properties or Tribal cultural and spiritual resources. For cultural resources and Section 106 of the NHPA there would be no historic properties affected. There would be no effects to resources listed in or eligible for the NRHP. With regards to NEPA and cultural resources, there would be no significant impacts to cultural resources.

3.7.3.4 No Action Alternative

No effects on cultural resources would be expected. The implementation of the Proposed Action would not affect historic properties or Tribal cultural and spiritual resources. For cultural resources and Section 106 of the NHPA there would be no historic properties affected. Under the No Action Alternative, the construction, demolition, and renovation projects would not occur. Existing conditions would remain unchanged and there would be no effects to cultural resources. With regards to NEPA and cultural resources, there would be no significant impacts to cultural resources.

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

3.8.1 Definition of Resource

The term “hazardous materials” refers to substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. § 9601.33), and the term “hazardous waste” refers to wastes defined as hazardous by the Solid Waste Disposal Act, as amended by RCRA. Hazardous substances are materials that, by any exposure pathway (skin, lungs, ingestion, or mucus membranes), may cause serious physical damage (e.g., cancer, genetic mutation, or harm fetal health) to a person or organism when improperly treated, stored, transported, disposed of, or otherwise managed. These substances are to be managed according to regulatory guidelines for the safety of public health and the environment.

AFPD 32-70, *Environmental Quality*, and the AFI 32-7000 series incorporate the requirements of all federal regulations and other AFIs and DoD Directives for the management of hazardous materials, hazardous wastes, and special hazards. Evaluation extends to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing

material (ACM), lead-based paint (LBP), and polychlorinated biphenyls (PCBs). The EPA is given authority to regulate these special hazard substances by the Toxic Substances Control Act Title 15 U.S.C. Chapter 53.

The MDEP, Division of Hazardous Waste Management, has been authorized by the EPA to administer a hazardous waste regulatory program and to enforce the RCRA requirements in Maine. The Maine hazardous waste management regulations are found in the MDEP Rules, Chapters 850–858.

3.8.2 Existing Conditions

Bangor ANGB has a base-specific hazardous materials and waste management program implemented through the 101 ARW Hazardous Waste Management Plan (HWMP) (ANG 2019) and the Oil and Hazardous Substances SPRP (Ensafe 2018). The HWMP provides guidance to personnel who work with hazardous waste and prescribes the roles and responsibilities with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The SPRP provides guidance specific to hazardous material and petroleum containment, handling, disposal, and emergency response. These resources are intended to be used as single-source documents, and consequently may contain overlapping information. All guidance documents for operations conducted at Bangor ANGB are regularly reviewed by the installation's Environmental, Safety, and Occupational Health Council to ensure compliance with current federal, state, and local requirements regarding the management of hazardous wastes as they relate to environmental protection and worker safety. The guidance documents apply to all base personnel and external support organizations on Bangor ANGB.

The 101 ARW is regulated as a large quantity generator of hazardous waste (ANG 2019). This means that 101 ARW generates more than 2,200 pounds of hazardous waste in a single month. Hazardous waste is separated and temporarily stored on-base before being transferred off-base for disposal or reclamation. The Environmental Manager (EM) is responsible for arranging the shipment and disposal of waste through the Defense Logistics Agency Disposition Service or by another disposal contractor.

Hazardous materials are used throughout Bangor ANGB for various, routine functions including aircraft support operations and maintenance; ground support equipment maintenance; and facilities maintenance and repair. Sources of these materials may include electrical components, heating and cooling systems, generators, storage tanks, chemical pest control, and POLs (i.e., coolants, fuels, grease, lubricating oil, and solvents).

Facilities on Bangor ANGB are known to contain ACM and PCB-containing materials. In facilities constructed prior to the 1980s, ACM and LBP may reasonably be assumed to be present. ACM, LBP, and PCBs are special hazards, with specific handling and abatement requirements that differ from other hazardous materials. Facilities known or suspected of having special hazards would

be inspected by a licensed contractor. Special hazards would be removed, stored, and disposed in accordance with applicable federal, state, and local regulations.

Environmental Restoration Program. The objectives of the Environmental Restoration Program (ERP) are to identify and fully evaluate any areas suspected to be contaminated with hazardous materials caused by past operations and to eliminate or control any hazards to public health, public welfare, or the environment. There is one proposed project site at Bangor ANGB, proposed Project 3, that is on a former ERP site. The site was remediated by excavating contaminated soil and replacing with clean fill to a depth of six feet. Confirmation sampling showed no exceedances in soil or groundwater and the site received a No Further Action in 1997 (Lockheed 1997).

Environmental Baseline Survey. An Environmental Baseline Survey (EBS) was conducted in 2009 to investigate four parcels on or adjacent to Bangor ANGB for the presence of hazardous and toxic substances, in addition to other materials that could affect human health and the environment (MEANG 2009). Proposed Projects 1 and 9a overlap with EBS parcels 1 and 4, respectively. The survey found no contamination from hazardous materials and waste. According to the EBS, there are two registered above ground storage tanks (ASTs) and two underground storage tanks (USTs) on Bangor ANGB (MEANG 2009). No ASTs or USTs were observed on the proposed project sites. Additional storage tanks may be present on Bangor ANGB that were not registered at the time of the survey.

Emerging Contaminants. Per- and polyfluoroalkyl substances (PFAS) are emerging contaminants with no maximum contaminant level guidelines from the EPA because their effects on humans and the environment are still under active research (USEPA 2016). A health advisory has been issued for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA), but health advisories are non-regulatory guidelines. Bangor ANGB has conducted a preliminary assessment at 12 potential release sites (PRLs) in 2017 (Amec Foster Wheeler 2018). Three PRLs overlap with sites for proposed Projects 3, 5, and 8; however, proposed Project 5 does not have any known releases and No Further Action is recommended. Of the three sites, proposed Project 3 was the only location with a screening criteria exceedance in one groundwater sample. Further sampling is recommended for the sites of proposed Projects 3 and 8 due to known releases of PFAS containing materials.

3.8.3 Environmental Consequences

3.8.3.1 Significance Criteria

Effects would be considered significant if the Proposed Action would (1) cause or increase the risk of human exposure to hazardous substances without adequate protection; (2) substantially increase the risk of spills or releases of hazardous substances; (3) disturb the progress of cleanup activities so adverse effects on human health or the environment could result; (4) conflict with established land use controls; or (5) result in noncompliance with applicable federal, state, or local laws and regulations or with permits related to hazardous materials and waste.

3.8.3.2 Proposed Action

Summary. The Proposed Action would have short- and long-term less-than-significant effects with regard to the presence and use of hazardous materials and wastes. Short-term minor adverse effects would be due to increased use of hazardous materials and generation of wastes during construction, demolition, and renovation activities. Long-term, the Proposed Action would cause a less-than-significant increase in the use of hazardous materials and generation of hazardous waste due to the additional operation and maintenance requirements of the new facilities. Overall, the Proposed Action would reduce the likelihood of exposure to or potential contamination from hazardous materials and waste through the removal of hazardous materials by demolition and renovation of outdated facilities and through the replacement with upgraded facilities and systems; therefore, long-term effects would be less than significant on the use of hazardous materials and waste management at Bangor ANGB.

Construction. The use of hazardous materials and generation of wastes at the construction, demolition, and renovation areas would occur; however, the increase in hazardous materials and wastes would be limited and temporary. General construction activities involve hazardous materials such as batteries, pesticides, and POLs, for site maintenance. Use of hazardous materials and management of hazardous waste would involve some minor risk of spills and human exposure; however, those risks would be minimized by complying with established management plans for hazardous materials and waste, and spill prevention and response. Construction BMPs would be implemented at all sites, including personnel safety training, proper storage and signage of containers, routine inventory, and readily available Safety Data Sheets for all hazardous materials used on-site. In addition, equipment would receive regular maintenance and vehicles would use drip pans when stationary to prevent contamination from leaks.

Contractors on-site would comply with local, state, and federal regulations for the use, handling, and disposal of hazardous materials. All construction sites would have a designated Health and Safety Officer on-site to ensure compliance with applicable regulations and the Health and Safety Plan (HASP). The HASP is a site-specific document required by OSHA that details items such as job hazard analysis, employee training, required personal protective equipment (PPE), exposure monitoring, and contamination response for the site. A printed copy would be kept at every project site for reference and would be updated if changes occur.

Ground-clearing and digging operations would require prior coordination with the EM and approved dig permits to be obtained prior to commencing work as well as documentation indicating that any fill brought on-site is clean. If contaminated soils or groundwater are encountered during construction, the EM, installation personnel, or contractor personnel would manage it in accordance with established procedures. The Bangor ANGB would ensure that the Proposed Action would not interfere with future PFAS investigations and would appropriately handle any excavated soils.

The 101 ARW would evaluate all investigative findings up to the initiation of construction activities and develop a Media Management Plan (MMP) to identify, contain, and properly dispose of PFOS and PFOA above federal and/or state regulatory limits in soil and groundwater. Based on the results of investigative findings in the area of proposed construction the MMP could include media sampling protocol in accordance with the Site Inspection or Remedial Investigation Work Plans, media characterization, erosion control BMPs, and media disposal requirements based on current state and federal guidelines on PFOS and PFOA. The scope of the MMP would be dependent on the results of future investigations and evolving regulations. If future investigations find no PFOS or PFOA above federal and/or state regulatory limits in soil or groundwater an MMP would not be necessary for that media. With proper media management no further contamination or migration of PFOS or PFOA from the soil or groundwater would be expected to occur. Future sampling events and project construction would be coordinated with the state regulatory agency, if needed.

Short-term minor adverse effects would also result from sites at which renovation and repair of facilities could expose materials that require special handling, such as ACM, LBP, and PCBs; however, removal of those materials would result in long-term minor beneficial effects because it would eliminate future threats to human health and the environment. Workers on the site would be advised to the extent known of the type, condition, and quantity of hazardous materials that might be present, and appropriate PPE would be required. Testing would be conducted, as necessary, by a licensed contractor to determine presence and extent of special hazards in a facility.

The safe handling, storage, and use procedures managed under the HWMP, in accordance with all federal, state, and local regulations, would be implemented. Solid wastes generated over the course of the construction period would be collected and transported offsite as necessary to a permitted landfill or handled in accordance with the HWMP. Disposal of special wastes (listed in the HWMP) would require prior coordination with the EM to ensure the appropriate permits are obtained. Construction debris would be recycled or reused as much as possible in accordance with the Air Force Qualified Recycling Program (DoD Manual 4160.28), or would be managed in accordance with AFI 32-7042, *Waste Management*. These effects would be less than significant.

Renovation and repair activities would be performed in accordance with federal, state, and local regulations. There activities would have short- and long-term less-than-significant effects to hazardous materials and wastes.

As discussed in Section 3.8.2, proposed Project 3 overlaps with a former ERP site. Since the site has been remediated, there should be no effect on construction activities or future facility use. In the unlikely case that contamination is observed, the EM and installation personnel would determine the next steps.

Prior to construction activities, if a storage tank is on a project site it may have to be drained and removed. If that is the case, contractor personnel would visually inspect the storage tank for

damage and leaks. If there is evidence of a release of a tank's contents or if the tank is being replaced, the tank would be drained, removed, and the surrounding soil would be sampled to determine if hazardous material concentrations are above regulatory limits. If concentrations are above regulatory limits, the EM would be notified. Soil containing hazardous materials would be excavated, stored in a separate spoil pile, and disposed of off-site at an approved facility. The drained contents of the storage tank would be stored in labeled containers and disposed of in accordance with applicable regulations for that material. Confirmation sampling would be conducted to ensure that all contaminated soils have been removed.

Operations. The use, generation, or disposal of hazardous materials and wastes after implementation of the Proposed Action would be minor compared to the levels under the existing conditions. This would result from the new facilities in order to meet mission requirements. The Bangor ANG HWMP and SPRP would guide long- and short-term hazardous materials management and would continue to ensure compliance with DoD Directive 5030.41 *Oil and Hazardous Substances Pollution Prevention and Contingency Program*. Long-term, beneficial impacts on hazardous materials and petroleum product management could occur with respect to storage conditions because the older buildings would be replaced or renovated and would have upgraded hazardous material and petroleum product storage areas. The proposed activities would not result in substantially different operational activities; therefore, the Proposed Action would result in less-than-significant adverse effects with respect to hazardous materials and wastes.

3.8.3.3 Alternative 1

Effects on hazardous materials and wastes, solid waste, and other contaminants from Projects 1–8 and 10 would be the same as under the Proposed Action. Project 9's identified alternative is a long-range construction project and will undergo future specific NEPA analyses, tiering off this EA, when specific project planning details are available.

3.8.3.4 No Action Alternative

No effects from hazardous materials and waste would be expected. Under the No Action Alternative, the construction, demolition, and renovation projects would not occur. The handling, use, and transportation of hazardous materials would remain unchanged compared to existing conditions.

3.9 CUMULATIVE EFFECTS

Cumulative effects analysis is required to assess the effects of the Proposed Action when combined with the effects of other past, present, and reasonably foreseeable future projects that would affect the same resource element(s), regardless of what entity is implementing the other project(s).

The ANG conducted a review of the most recent planning documents (within the last 10 years) for the geographic areas of the City of Bangor and Penobscot County to identify other past, present, and reasonably foreseeable projects in the area. The planning documents reviewed include:

- *BACTS Annual List of Obligated Projects Federal Fiscal Year (FFY) 2020.*
- *BACTS Transportation Improvement Program 2020-2021-2022-2023.*
- *Bangor Area Comprehensive Transportation System (BACTS) Metropolitan Transportation Plan 2018-2038.*
- *Bangor International Airport AIP Capital Improvement Plan 2016-2021.*
- *Bangor International Airport Master Plan Update 2017.*
- *City of Bangor, Maine Comprehensive Plan 2012.*
- *City of Bangor Zoning Map 2018.*
- *Maine Department of Transportation Three-Year Work Plan 2021 Edition.*
- *Penobscot County Unorganized Territory Budget 2019-2020.*

Based on the planning and development-based documents, NGB identified projects that could affect the same resources as the Proposed Action. The City of Bangor has recently completed or has plans for BIA, including making safety and infrastructure improvements to rehabilitate the runway and taxiways, building new hangars, and constructing improvements to the BIA terminal (Table 3-10) (BACTS Policy Committee 2018; Jacobs 2016, 2017; MaineDOT 2021). The projects would be under the jurisdiction of the FAA and would be implemented by the City of Bangor. The projects may be during the same time as some of the projects outlined in the IDP. The FAA would be required to comply with all applicable federal and state regulations including preparing NEPA, as necessary, for their projects.

All other projects outlined in the reviewed plans were either speculative in nature or were temporally or geographically remote and would not affect the same resources as the Proposed Action; therefore, none were carried forward for detailed evaluation in the EA.

Table 3-10. Projects Considered for Cumulative Effects

Planning documents	Projects identified	Implementation timeline
BACTS Metropolitan Transportation Plan 2018-2038; Bangor International Airport AIP Capital Improvement Plan 2016-2021; Bangor International Airport Master Plan Update; MaineDOT Three-Year Work Plan 2021 Edition.	BIA safety and infrastructure improvements to rehabilitate the runway and taxiways and taxiway lighting. BIA hangar development in the 400 Area on the northeast side and in the 600 Area on the southeast side of the airport. BIA Improvements in and around the terminal, including a new baggage claim, concourse, parking garage, and terminal building.	2016-2023

The cumulative effects of the proposed action in combination with other past, present, and reasonably foreseeable actions on- and off-base would not result in significant adverse impacts. Resource areas on which cumulative effects would be anticipated are addressed below.

Health and Safety. There would be short-term less-than-significant and long-term beneficial cumulative effects to health and safety. Short-term effects would be from inherent safety hazards associated with construction, demolition, and renovation activities. Long-term benefits would include the improvements to security and personnel safety at entry control facilities and explosive ordnance storage areas. A review of the plans and projects outlined above did not reveal any actions which would have an appreciable effect on health and safety above and beyond the proposed action.

Air Quality. There would be short-and long-term less-than-significant cumulative adverse effects to air quality. Short-term effects would be from construction, renovation, and demolition activities. Long-term effects would be from increases in heating and cooling requirements at the installation. Emissions would not exceed the PSD major source threshold values and the Proposed Action would not contribute to a violation of any federal, state, or local air regulation.

The State of Maine takes into account the effects of all past, present, and reasonably foreseeable emissions during the development of the State Implementation Plan. The state accounts for all significant stationary, area, and mobile emission sources in the development of this plan. Estimated emissions generated by the Proposed Action would be *de minimis* and it is understood

that activities of this limited size and nature would not contribute significantly to adverse cumulative effects on air quality. After a review of the projects and plans outlined above, no activities were identified that when combined with the Proposed Action would have greater than significant adverse effects on air quality.

Noise. The Proposed Action would have short- and long-term less-than-significant cumulative effects on the noise environment. Short-term effects would be due to the use of heavy equipment during demolition and construction activities. Long-term effects would be due to the potential use of backup generators at the proposed facilities. The Proposed Action would not appreciably increase areas of incompatible land use surrounding the base or lead to a violation of any applicable local, state, or federal noise regulations. The Proposed Action would be confined to on-base areas and would not have additional cumulative effects to any ongoing or planned activity. Estimated noise from the Proposed Action would be negligible, and it is understood that activities of this limited size and nature would not contribute appreciably to adverse cumulative effects on the noise environment. After a review of the projects and plans outlined above, no activities were identified that when combined with the Proposed Action would have greater than significant adverse effects on noise.

Water Resources. The Proposed Action would have short- and long-term less-than-significant effects to water resources. Short-term minor adverse effects would be due to site-specific temporary disturbance during construction, demolition, and renovation. Long-term minor adverse effects would be due to ongoing activities at the base. Proposed activities would not reduce water availability or supply, exceed safe annual yield of water supplies, adversely affect water quality, damage or threaten hydrology, or violate water resources laws or regulations. The Proposed Action would be confined to on-base areas and would not have additional cumulative effects to any ongoing or planned activity. After a review of the projects and plans outlined above, no activities were identified that when combined with the Proposed Action would have greater than significant adverse effects on water resources.

Biological Resources. The Proposed Action would have short-term less-than-significant effects to biological resources. Short-term minor adverse effects would be due to site-specific temporary disturbance during construction. Proposed activities would not adversely affect existing vegetation or aquatic and terrestrial wildlife resources, including threatened and endangered species or rare species. Effects to biological resources would not reduce the distribution or viability of species or habitats of concern and would not violate biological resources laws or regulations. There would be less-than-significant effects regarding loss, degradation, or fragmentation of wildlife habitat. The Proposed Action would be confined to on-base areas and would not have additional cumulative effects to any ongoing or planned activity. After a review of the projects and plans outlined above, no activities were identified that when combined with the Proposed Action would have greater than significant adverse effects on biological resources.

Transportation and Circulation. The Proposed Action would have short-term less than significant cumulative adverse effects and long-term beneficial effects on transportation and traffic. Short-term effects would result from construction vehicles, and small changes in localized traffic patterns due to the construction and demolition projects. Long-term beneficial effects would result from several transportation upgrade projects. Effects to transportation and traffic would primarily be confined to on-base areas, but would have short-term negligible adverse effects on off-base traffic. These effects would be from incremental increases in the number of vehicles accessing the installation in support of the demolition and construction activities. After a review of the projects and plans outlined above, the size and scope of the changes in the transportation systems would be extremely small when compared to other planned projects in the area. As a result, the traffic impacts during construction and would not contribute appreciably to cumulative effects. No activities were identified that when combined with the Proposed Action would have greater than significant adverse effects on transportation and circulation.

Cultural Resources. Because the projects addressed by this EA would not affect any historic resource, there would be no potential for cumulative effects to cultural resources.

Hazardous Materials and Wastes, Solid Waste, and Other Contaminants. There would be short-term less-than-significant and long-term less-than-significant cumulative effects on hazardous materials usage and waste generation. Short-term effects would be due to increased use of hazardous materials and increased waste generation during construction, demolition, and renovation activities. Long-term effects would include an overall minor increase in hazardous materials usage and waste generation due to the increased operations and maintenance requirements for the new facilities. A review of the plans and projects outlined above did not reveal any actions which would have an appreciable effect on hazardous materials usage and waste generation when combined with the proposed action.

3.10 MANAGEMENT ACTIONS/SPECIAL PROCEDURES

This section summarizes special operating procedures associated with this EA. *Special operating procedures* are defined as measures that would be implemented to address minor potential environmental effects associated with implementation of the Proposed Action. The measures would follow the base's management plans for air quality, cultural resources, hazardous wastes, natural resources, solid waste, spill prevention, stormwater pollution prevention, and wildlife hazards. The environmental protection measures described in this EA and standard BMPs such as implementation of control measures for reducing fugitive dust emissions; engineering and site development to account for soil constraints; conforming to all federal, state, and local requirements related to stormwater pollution prevention during construction activities; and safe removal of any potentially hazardous materials prior to initiating demolition activities would be applied. Environmental protection measures are those actions that are used to minimize impacts that are not required as a part of statutes, regulations, or to fulfill permitting requirements, but are

typically measures taken during design and construction phases of a project to reduce impacts on the environment. BMPs are actions required by statutes or regulations, or to fulfill permitting requirements, that reduce potential impacts. None of the environmental protection measures or BMPs are needed to bring an effect below the threshold of significance. Evaluations contained in this EA have determined that no significant environmental effects would result from implementation of the Proposed Action. This determination is based on review and analysis of existing resource information, coordination with installation personnel, and relevant agency coordination. Since implementation of the Proposed Action would result in less-than-significant effects to the resources evaluated, recommendations for special procedures are unnecessary.

3.11 SUMMARY OF ENVIRONMENTAL IMPACTS

Table 3-11 provides a comparison of environmental effects of the Proposed Action, Alternative 1, and the No Action Alternative on the environmental resources evaluated. Implementation of the IDP would result in short- and long-term, less-than-significant effects relative to the No Action Alternative. The No Action Alternative represents a continuation of the 101 ARW use of existing facilities and would have no additional change in existing conditions.

Table 3-11. Summary of Environmental Impacts

Resource Area	Proposed Action/Preferred Alternative and Alternative 1	No Action Alternative
Health and Safety	Short-term less-than-significant effects from inherent safety hazards associated with construction, demolition, and renovation activities. Long-term beneficial effects from implementing projects to meet AT/FP and safety clearance requirements.	Continued adverse effects from AT/FP noncompliance and QD arcs at entry control facilities and where standoff setbacks cannot be achieved.
Air Quality	Short-term less-than-significant effects from construction, demolition, and renovation activities. Long-term beneficial effects from decreases in heating and cooling requirements at the installation. Emissions would not exceed the prevention of significant deterioration major source thresholds in an attainment or maintenance area or the *de minimis* thresholds in a nonattainment area, and would not contribute to a violation of any local, state, or federal air quality regulation.	No effects.
Noise	Short-term less-than-significant effects from the use of heavy equipment during construction and demolition activities. Long-term less-than-significant effects from the potential use of backup generators at the proposed facilities. Noise would not appreciably increase areas of incompatible land use surrounding the base, or lead to a violation of any applicable local, state, or federal noise regulations.	No effects.

Water Resources	Short-term less-than-significant effects from site-specific temporary disturbance during construction, demolition, and renovation. Long-term less-than-significant effects from ongoing base activities. Proposed activities would not reduce water availability or supply, exceed safe annual yield of water supplies, adversely affect water quality, damage or threaten hydrology, or violate water resources laws or regulations.	No effects.
Biological Resources	Short-term less-than-significant effects from site-specific temporary disturbance during construction. Effects to biological resources would not reduce the distribution or viability of species or habitats of concern and would not violate biological resources laws or regulations.	No effects.
Transportation and Circulation	Short-term less-than-significant effects would result from construction vehicles and from small changes in localized traffic patterns due to the construction and demolition projects. Long-term beneficial effects would result from upgrades to the main gate and establishment of an additional gate. Transportation and circulation effects would not require long-term closures of off-post roadways, substantially increase congestion on any primary off-post roadways, or otherwise interfere with the functionality of the regional transportation network.	No effects.
Cultural Resources	No effects on historic properties or Tribal cultural and spiritual resources. For cultural resources and Section 106 of the NHPA there would be no historic properties affected. There would be no effects to resources listed in or eligible for the NRHP. With regards to NEPA and cultural resources, there would be no significant impacts to cultural resources.	No effects.
Hazardous Materials and Wastes, Solid Waste, and Other Contaminants	Short-term less-than-significant effects from increased use of hazardous materials and generation of wastes during construction, demolition, and renovation activities. Long-term less-than-significant effects from the use of hazardous materials and generation of hazardous waste from the operation and maintenance requirements of new facilities. Long-term reduction in the likelihood of exposure to or potential contamination from hazardous materials and waste through the removal of hazardous materials by demolition and renovation of outdated facilities and through the replacement with upgraded facilities and systems.	No effects.

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Appendix A

IICEP Correspondence

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Agency Letters

The following letter was sent to the federal, state, and local agencies listed below. Responses received immediately follow the letter sent.

Agency	Name	Address	Response Received
Bangor Planning Department	Anne Krieg Planning Officer	73 Harlow St. Bangor, ME 04401	
Bangor International Airport	Anthony Caruso Airport Director	287 Godfrey Blvd. Bangor, ME 04401	
Federal Aviation Administration, New England Region	Colleen D'Allessandro, Regional Administrator	1200 District Ave. Burlington, MA 01803	X
Maine Coastal Program	Todd Burrowes Federal Consistency Review Officer	21 State House Station Augusta, ME 04333	
Maine Department of Environmental Protection, Bureau of Air Quality	Jeff Crawford Director	17 State House Station Augusta, ME 04333	X
Maine Department of Environmental Protection, Office of the Commissioner	Melanie Loyzim Commissioner	17 State House Station Augusta, ME 04333	
Maine Department of Environmental Protection, Eastern Maine Regional Office	Jim Beyer Director	106 Hogan Rd. Bangor ME 04401	
Maine Department of Environmental Protection, Bureau of Land Resources	Nick Livesay Director	17 State House Station Augusta ME 04333	X
Maine Department of Environmental Protection, Bureau of Remediation and Waste Management	Susanne Miller Director	17 State House Station Augusta ME 04333	X
Maine Department of Environmental Protection, Bureau of Water Quality	Brian Kavanah Director	17 State House Station Augusta ME 04333	X
Maine Department of Transportation, Environmental Office	David Gardner Director	16 State House Station Augusta, ME 04330	
Maine Forest Service	Patty Cormier Director	22 State House Station Augusta ME 04333	
Maine Geological Survey	Stephen Dickson Director	93 State House Station Augusta ME 04333	
Maine Department of Inland Fisheries and Wildlife	Judy Camuso Commissioner	41 State House Station Augusta ME 04333	X
NOAA Fisheries Service	Ashleigh McCord NEPA Review and Oversight Officer	55 Great Republic Dr. Gloucester MA 01930	
Penobscot County Commissioners, District One	Peter Baldacci Commissioner	97 Hammond St. Bangor ME 04401	
USACE, New England District	Shawn Mahaney Maine Project Officer	442 Civic Center Dr., Ste. 350 Augusta ME 04330	
USEPA, Region 1	Deborah Szaro Acting Administrator	5 Post Office Sq., Ste. 100 Boston MA 02109	X
USFWS, Maine Field Office	Wende Mahaney Federal Projects Lead	306 Hatchery Rd. East Orland ME 04431	X
USFWS, North Atlantic-Appalachian Regional Office	Wendi Weber Mahaney Regional Director	300 Westgate Center Dr. Hadley MA 01035	

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NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS 20762-5157

28 September 2021

Ms Christine Yott
Physical Scientist (Environmental)
Air National Guard Readiness Center, NGB/A4AM
3501 Fetchet Ave
Joint Base Andrews MD 20762-5157

Planning Officer Anne Krieg
Bangor City Hall
Bangor Planning Department
73 Harlow Street
Bangor, ME 04401

Dear Ms Krieg

The National Guard Bureau (NGB) is currently investigating the feasibility of short-term construction, demolition, and renovation projects at the Air National Guard (ANG) 101st Air Refueling Wing (101 ARW) located at Bangor International Airport in Bangor, Maine (Attachment 1). The purpose of the Proposed Action is to implement these projects from the Installation Development Plan (IDP) to provide the 101 ARW with properly sized and configured facilities needed to effectively accomplish their mission. The Proposed Action provides a planning, programming, and development strategy that would address current mission deficiencies and opportunities for the 101 ARW. As directed by the National Environmental Policy Act (NEPA), the NGB, with support from Tetra Tech, is preparing an Environmental Assessment (EA) to evaluate the potential environmental effects associated with the Proposed Action.

The undertaking is composed of ten (10) crucial repair, renovation, replacement, and demolition projects from the IDP (Attachment 2). The 101 ARW would implement the proposed short-range (within the next five years) projects, as summarized in the 101 ARW Project List. The EA will also provide sufficient analysis of mid- to long-range projects (within the next six to 20 years), so future NEPA analyses that tier from the EA can effectively reference the broad analyses of those improvements. The NGB has reviewed the undertaking and defined the Area of Potential Effects (APE) as staging areas, areas of proposed ground disturbance, and facilities that would be renovated (Attachment 3).

The NGB and the 101 ARW are interested in information or agency-specific preliminary comments that would alleviate or highlight areas of concerns preceding the EA. Areas of concern may include potential effects to: archaeological, cultural, ecological, physical, and social resources. The NGB and 101 ARW also request any information that your agency may have regarding other proposed, ongoing, or recently completed projects that could create or exacerbate impacts associated with the Proposed Action.

Please respond within thirty (30) days of receipt of this letter to Christine Yott, ATTN: 101 ARW EA, 3501 Fetchet Avenue, Joint Base Andrews, MD 20762-5157 or by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject line ATTN: 101 ARW EA. Thank you for your assistance.

Sincerely

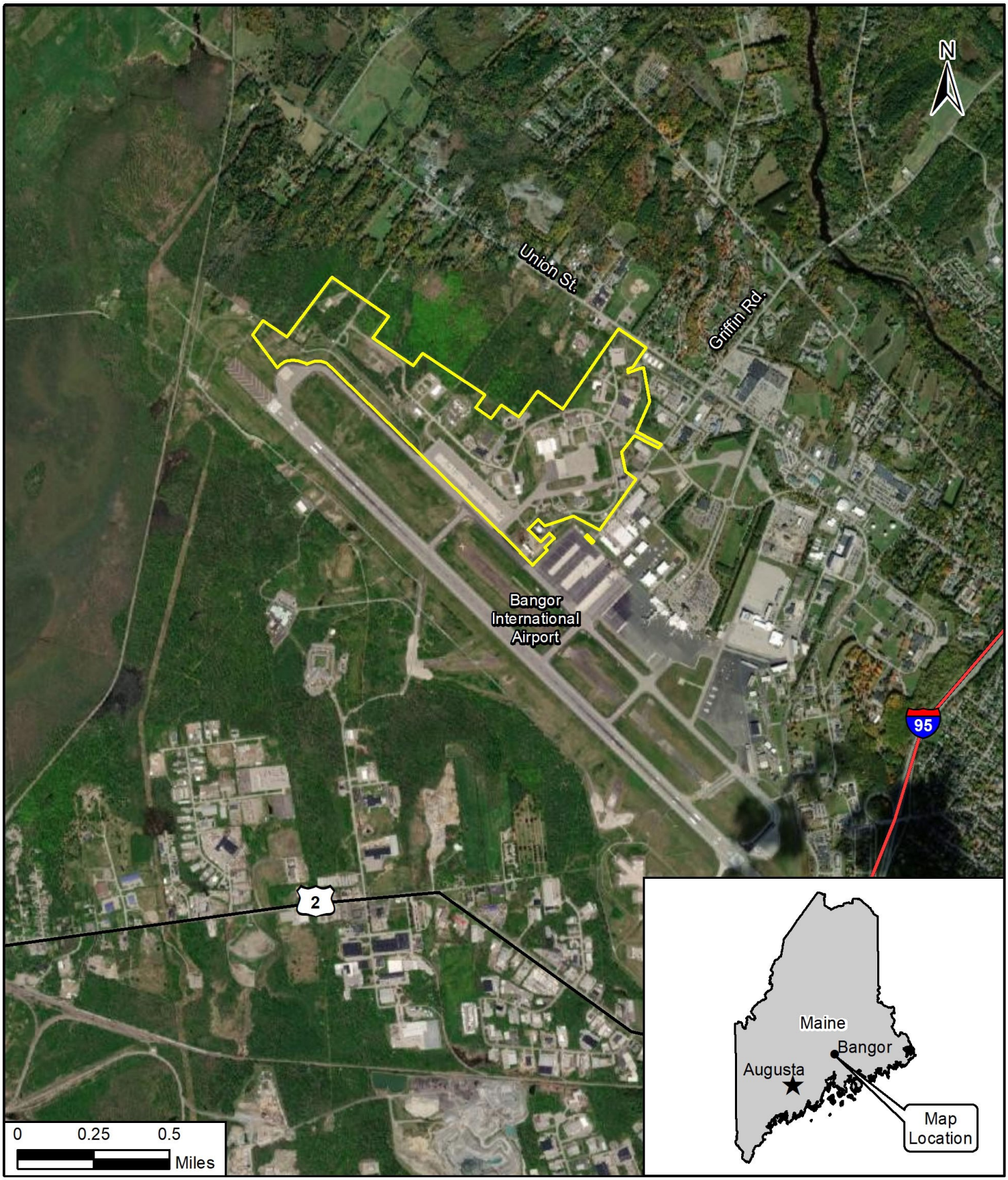
YOTT.CHRISTINE.JUNE.1287505015

Digitally signed by YOTT.CHRISTINE.JUNE.1287505015
Date: 2021.09.28 10:29:55 -04'00'

CHRISTINE J. YOTT, GS-13, DAF
Physical Scientist (Environmental)

3 Attachments:
1. 101 ARW Location Map, 27 September 2021
2. 101 ARW Project List, 27 September 2021
3. 101 ARW Proposed Project Locations Map, 27 September 2021

Attachment 1: 101 ARW Bangor ANGB Location Map



LEGEND

Installation Boundary

Attachment 2: 101 ARW Project List

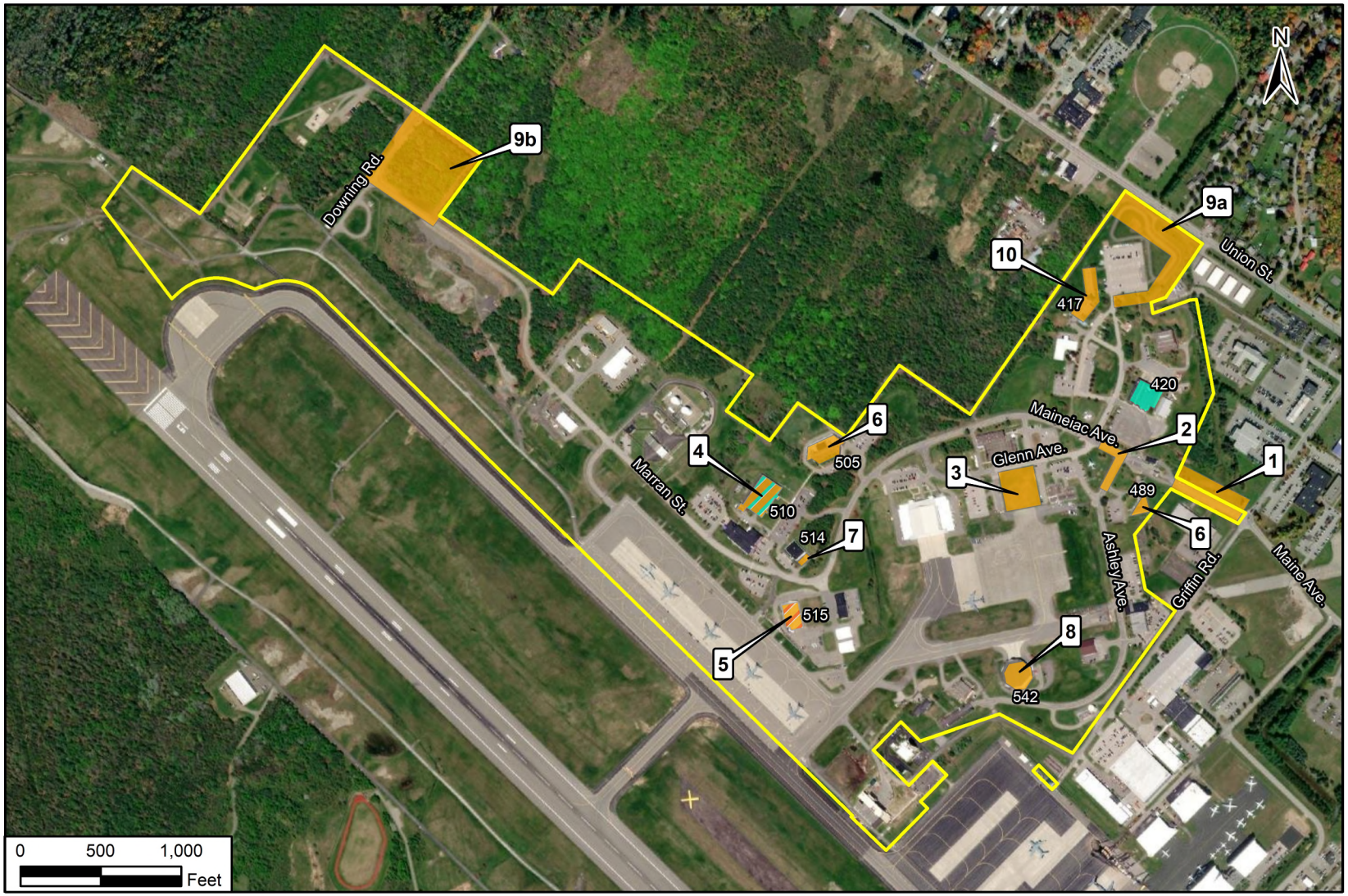
Project #	Project Title and Description	Project ID #	Estimated Year
1	**Alter Antiterrorism/Force Protection (AT/FP) at Main Gate (outside the gate)**. This project includes acquiring 0.93 acres to the right of the main gate as you are entering the gate on Maineiac Avenue; constructing 2,200 square yards (SY) of entrance and exit traffic lanes to accommodate truck traffic and inspection; repairing 3,500 SY of existing road pavement; renovating the gate, boundary fencing, generator, and signage; installing AT/FP traffic calming measures (barriers, planters); relocating electrical service, storm drains, and fire hydrant; and replacing and relocating the main base sign to include minor landscaping and utilities.	FKNN102003	2024
2	**Repair Main Entrance AT/FP (inside the gate)**. This project includes repairing 5,743 SY of road pavement; installing AT/FP barriers; and constructing 814 SY of sidewalk inside the main gate along Maineiac Avenue.	FKNN162349	2023
3	**Construct Fuel Cell Hangar**. This project would be the construction of a 40,871 square foot (SF) hangar off Glenn Avenue on the site of former building (B) 496 (aircraft maintenance hangar), to replace the existing hangar, which would be demolished (see project #8).	FKNN159044	2028
4	**Demolish B510**. This project would be demolition of B510 (34,551 SF heating facility building). The building remains from a prior Active Duty mission. It is not required for the 101 ARW mission and is incurring unnecessary maintenance and utility costs.	FKNN212001	2024
5	**Renovate B515 for Small Air Terminal (SAT)**. This project would be interior renovations to this 16,575 SF Aircraft Support Equipment shop/storage building to accommodate a new user of the facility (the SAT).	FKNN212002	2023
6	**Demolish B489 and B505**. This project would be demolition of two Reserve Forces Operational Training buildings: B489 (6,800 SF) and B505 (24,400 SF) because the buildings do not meet AT/FP standoff requirements from the base perimeter fence.	FKNN232003	2024
7	**Additions or Alterations (ADAL) to B514**. This project would be the construction of a 2,140 SF addition to B514 (the Communications Facility) for Communications Squadron vehicle maintenance and storage.	FKNN192001	2024
8	**Demolish B542**. This project would be the demolition of B542, the 23,418 SF fuel systems maintenance dock hangar. The 20 year old building is undersized and does not meet safety requirements or storage needs. The hangar does not allow for safe clearances around the aircraft while performing maintenance operations. The building would be demolished after the new hangar (project #3) would be constructed.	FKNN252001	2029
9	**Construct Second AT/FP Compliant Gate**. The current alternate gate is within the Quantity-Distance (QD) arc of the Munitions Storage Area (MSA). This project is in the very early stages. At this time, two possible locations are under consideration. One would be to construct a new gate off Union Street adjacent to the base's running track and connecting to Pesch Circle near B417. The other is to construct a new gate at the current alternate gate location off Downing Road, which would require rerouting of traffic once inside the base perimeter to avoid MSA QD arcs.	FKNN192006	2029

Attachment 2: 101 ARW Project List

Project #	Project Title and Description	Project ID #	Estimated Year
10	**ADAL to B417.** This project would be the construction of a 2,100 SF, 1-story addition to B417. B417 is the Troop Camp building, with barracks and dining hall. The addition would be on the east side of the building (facing the parking lot), between the lodging and dining wings of the building. The project also would include interior renovations (30,653 SF total) to the building's existing 21,219 SF, 3-story troop barracks and the 9,434 SF 1-story dining hall. The project would consolidate occupants of B489 and B505 (buildings to be demolished; see project #6) in to B417 to facilitate right-sizing of the base.	NA	2023

NA = Not available.

Attachment 3: 101 ARW Bangor ANGB Proposed Project Locations Map



LEGEND

- Installation Boundary
- Area of Potential Effect
- Potentially NRHP-Eligible Building in Viewshed of Projects
- NRHP-Eligible, but Mitigated under HABS/HAER Documentation Conducted by USAF in 2008
- Potentially NRHP-Eligible, to be Evaluated

Note: Areas shown are approximate.

Projects:

1. Main Gate AT/FP (outside gate)
2. Main Gate AT/FP (inside gate)
3. Construct Fuel Cell Hangar
4. Demolish B510
5. Renovate B515
6. Demolish B489 and B505
7. ADAL to B514
8. Demolish B542

9a. 2nd AT/FP Gate: Union St.

9b. 2nd AT/FP Gate: Downing Rd.

10. ADAL to B417

U.S. Department of Transportation

Federal Aviation Administration

New England Region
Office of the Regional Administrator

1200 District Avenue
Burlington, MA 01803

October 27, 2021

Ms. Christine Yott
Physical Scientist (Environmental)
Air National Guard Readiness Center
National Guard Bureau (NGB)/A4AM
3501 Fetcher Avenue
Joint Base Andrews, MD 20762-5157

Dear Ms. Yott:

Thank you for your letter, dated September 28, 2021 informing us of the National Guard Bureau's (NGB) current investigation of the feasibility of short-term construction, demolition, and renovation projects at the Air National Guard (ANG) 101st Air Refueling Wing (101 ARW) located at Bangor International Airport in Bangor, Maine. In your letter you requested information or agency-specific preliminary comments that would alleviate or highlight areas of concerns preceding the Environmental Assessment (EA), therefore we have consulted with the Environmental Protection Specialist in our Airports Division who would like to recommend that in preparation for the EA, the NGB consult with the Maine State Historic Preservation Office (SHPO) and Maine Department of Environmental Protection (DEP) for potential impacts on resources within their jurisdiction.

The FAA Airports Division would be happy to review the Draft EA. Due to the nature and location of the proposed improvements, we anticipate our comments would be minimal.

Thank you for the opportunity to provide comments to this matter, please let us know if we can be of further assistance. If you need additional information, please contact Richard Doucette, Environmental Protection Specialist, richard.doucette@faa.gov, at 781.238.7613.

Sincerely,

Colleen M. D'Alessandro
Regional Administrator, New England Region

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

October 5, 2021

Christine Yott
ATTN: 101 ARW EA
3501 Fetchet Ave
Joint Base Andrews, MD 20762-5157
NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil

Ms. Yott,

The Maine Department of Environmental Protection (the Department) Bureau of Air Quality (BAQ) is in receipt of your letter dated September 28, 2021, regarding the Environmental Assessment (EA) for multiple potential upcoming repair, renovation, replacement, and demolition projects at the Air National Guard (ANG) 101st Air Refueling Wing (101 ARW) located at the Bangor International Airport in Bangor Maine. This letter responds to your request for preliminary comments highlighting areas of concern. Please note, these comments are limited to air emissions and the facility's air emission license.

This ANG facility currently has an active air emission license issued pursuant to *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115. Air emission license A-627-71-J-R/A was issued February 17, 2017 and amended February 25, 2020 (A-627-71-K-A). This license addresses the installation and operation of the facility's air emissions units including boilers, heaters, generators, engines, paint booths, and fuel storage equipment.

Demolition and/or removal of emissions units does not require pre-approval from BAQ. However, we do encourage facilities to apply for a minor revision to their air emission license after the removal has taken place to update the list of active emission units.

Projects which include replacement of existing emissions units or installation of new emission units must be licensed prior to beginning construction with the exception of emission units which are classified as insignificant activities. Insignificant activities include, but are not limited to, boilers or heaters with a maximum heat input less than 1.0 million British thermal units per hour (MMBtu/hr) and engines with a maximum heat input of less than 0.5 MMBtu/hr. A full list of insignificant activities can be found in Appendix B to 06-096 C.M.R. ch. 115.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

website: www.maine.gov/dep

The facility must apply for and receive an amendment to the air emission license addressing any new or replacement emission units that are not considered insignificant activities prior to beginning actual construction. Pursuant to *Definitions Regulation*, 06-096 C.M.R. ch. 100:

> *"Begin actual construction" means, in general, initiation of physical on-site construction activities on an emissions unit which are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures. With respect to a change in method of operation, this term refers to those on-site activities, other than preparatory activities, which mark the initiation of the change.*

Application forms and additional information is available on the Department's website at: https://www.maine.gov/dep/air/permits/minor.html

If you have any further questions, please contact me at jane.gilbert@maine.gov or by phone at (207) 530-0554.

Sincerely,

Jane E. Gilbert

Jane Gilbert, P.E.
Licensing Supervisor
Bureau of Air Quality

cc: Jeff Crawford [MEDEP] via email
Tanya Hovell [MEDEP – EMRO] via email
Christopher Cronin [MEANG] via email

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

October 12, 2021

Ms. Christine Yott
Air National Guard Readiness Center, NGB/A4AM
3501 Fetchet Avenue
Joint Base Andrews MD, 20762-5157

Re: Air National Guard Facility – Bangor, Maine

Dear Ms. Yott:

The Department has reviewed the proposed projects at the Air National Guard facility outlined in your September 28, 2021 letter. At this point, the Department's Bureau of Land Resources has not identified any potential issues associated with permitting the work proposed by the Air National Guard facility. The facility would be required to modify the existing Site Location of Development Act permit. This modification would include revising the stormwater management plan to treat the new development. The project is in an urban impaired stream watershed and would need to treat the stormwater according to these standards. If any of these projects require impacts to wetlands, you may need to file a Natural Resources Protection Act permit application. For any questions on Land Licensing, please contact Jessica Damon at 446-1216 or Jessica.Damon@maine.gov.

Additionally, the Department's Bureau of Remediation and Waste Management, Division of Remediation has reviewed the proposal. Please be aware that several of the project locations coincide with potential release locations (PRLs) of PFAS as identified in the Air National Guard's 2018 report, FINAL FY16 PHASE 1 REGIONAL SITE INSPECTIONS FOR PERFLUORINATED COMPOUNDS, MAINE AIR NATIONAL GUARD 101ST AIR REFUELING WING, BANGOR AIR NATIONAL GUARD BASE, BANGOR, MAINE, Amec Foster Wheeler Project #: 2-9133-0006, March 9, 2018. The report identified concentrations of PFAS in soils at several of the project locations below Maine Remedial Action Guidelines but noted that concentrations in soil may be contributing to concentrations in groundwater that exceed US EPA's Lifetime Health Advisory of 70 parts per trillion. We understand that you have been coordinating with Capt. Christopher Cronin for this work. Please continue to do so to ensure that work does not interfere with any Air Guard plans for future investigations and to

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

website: www.maine.gov/dep

make certain that any excavated soils are handled appropriately. For any questions relating to these items, please contact Naji Akladiss at 207-557-4312 or Naji.N.Akladiss@maine.gov.

Please let us know if you have other questions or concerns on potential development at this site.

Sincerely,

Jessica M. Damon
Regional Licensing and Compliance Manager
Bureau of Land Resources
Maine Department of Environmental Protection

Naji Akladiss

Naji Akladiss, P.E.
Project Manager
Bureau of Remediation and Waste Management
Maine Department of Environmental Protection

From: Kavanah, Brian W <Brian.W.Kavanah@maine.gov>
Sent: Wednesday, September 29, 2021 10:40 AM
To: NGB A4/A4A NEPA COMMENTS Org <NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil>
Cc: Poirier, Rhonda <Rhonda.Poirier@maine.gov>; Wood, Gregg <Gregg.Wood@maine.gov>; Stebbins, Mark N <Mark.N.Stebbins@maine.gov>
Subject: [Non-DoD Source] FW: Scoping Letter for Bangor ANG Base

Hello Ms. Yott,

I am forwarding your request to Mark Stebbins, the Director for Licensing in the Bureau of Land Resources (BLR) as the projects in your request may be subject to requirements overseen by the BLR.

I am also copying Rhonda Poirier, Manager of the Stormwater Program in the Bureau of Water Quality as this Air National Guard location is subject to the *General Permit for the Discharge of Stormwater From State or Federally Owned Municipal Separate Storm Sewer System Facilities.*

They will let you know if they have any concerns or comments.

Thanks.

Brian Kavanah
Director, Bureau of Water Quality
Maine Department of Environmental Protection
Station 17, Augusta, ME 04333
(207) 530-0293

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

October 7, 2021

Christine Yott
Air National Guard Readiness Center, NGB/A4AM
3501 Fletchet Ave.
Joint Base Andrews, MD 20762-5157

Re: DEP Water Bureau Comments on the IDP for the MEANG 101st Air Refueling Wing in Bangor, ME.

Dear Ms. Yott,

The Department recently determined that the current activities conducted by the MEANG 101st Air Refueling Wing in Bangor, Maine are primarily National Security which is not regulated under Maine's Multi-Sector General Permit for Stormwater Discharge Associated with Industrial Activity (MSGP).

Project #5 of your Project List, proposed alterations for a small air terminal to accommodate a new user of the facility, will require MSGP permit coverage as a facility conducting Air Transportation activities unless the new user is primarily engaged in national security activities, as determined by the Department.

Thank you for the opportunity to comment,

Rhonda Poirier

Rhonda Poirier
MEPDES Stormwater Program Manager
Maine Department of Environmental Protection
Division of Water Quality Management

Cc: Christopher M. Cronin, Capt, MEANG, Environmental Manager
Jeff Spaulding, Stillwater Environmental Engineering

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
353 WATER STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

October 28, 2021

Christine Yott
Air National Guard Readiness Center, NGB/A4AM
3501 Fetchet Avenue
Joint Base Andrews MD 207625157

RE: Information Request – Maine Air National Guard Property Project, Bangor

Dear Christine:

Per your request received on September 29, 2021, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *Maine Air National Guard Property* project in Bangor.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bat Species – Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Upland Sandpiper - Upland sandpipers, a State Threatened species, have been documented in high numbers within the project area. Upland sandpipers nest only on the ground and use both native and cultivated vegetation for nesting sites. Upland sandpipers are protected under Maine's Endangered Species Act and, as such, are afforded special protection against activities that may cause "Take" (kill or cause death), "harassment" (create injury or significantly disrupt normal behavior patterns), and other adverse actions. Please contact our Department with further details regarding planned demolition or construction activities in or immediately adjacent to the cleared and maintained runway aprons and/or safety zones.

Significant Wildlife Habitat

Significant Vernal Pools - At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands,

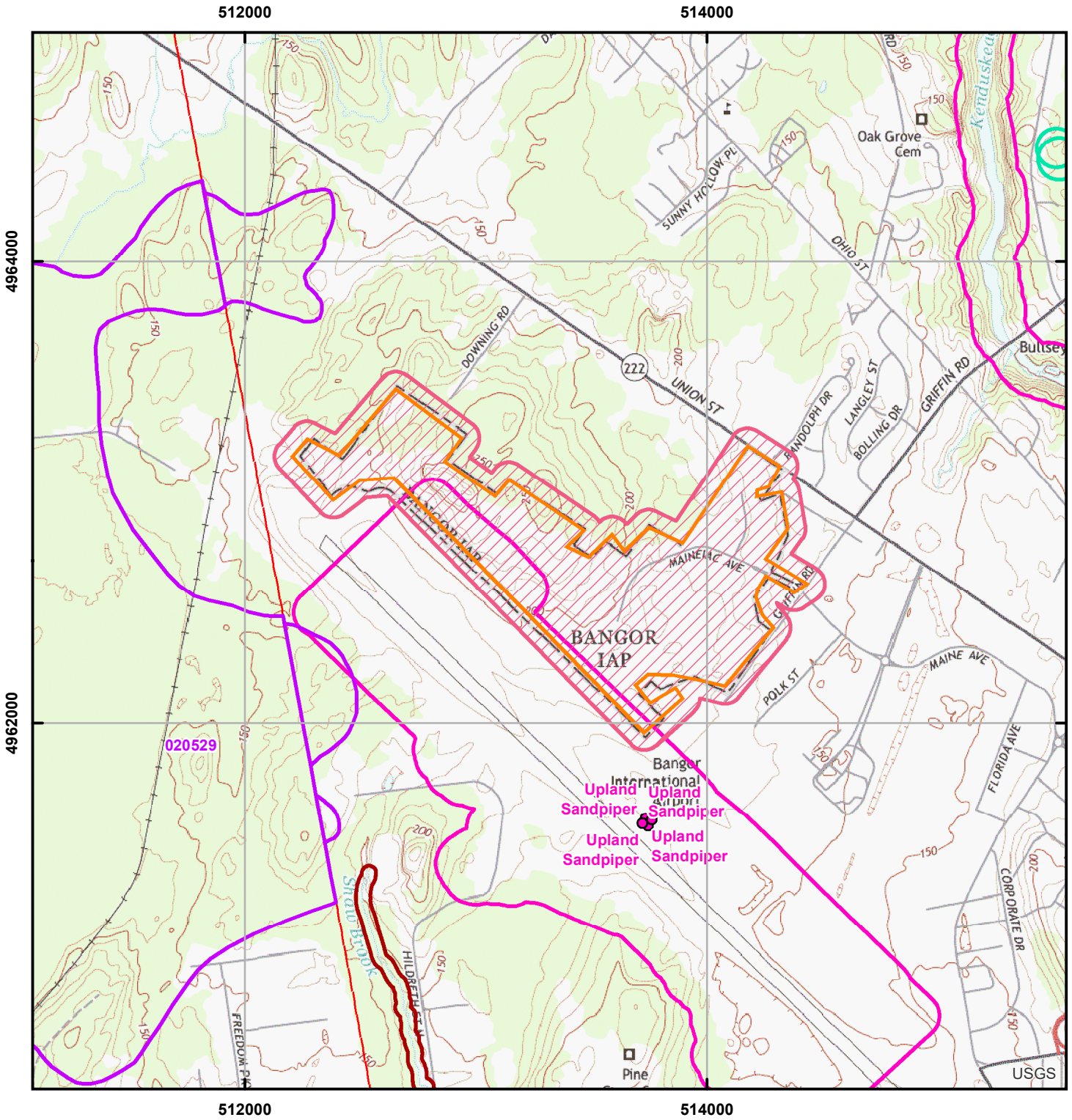
Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

Becca Settele
Wildlife Biologist



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Maine Air National Guard Property (Version 2)

Maine Department of Inland Fisheries and Wildlife

0 0.125 0.25 0.5 0.75 1 Miles

Projection: UTM, NAD83, Zone 19N

Date: 9/30/2021

- ProjectSearchAreas - All Versions
- Maine Cliff and Talus Areas
- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 Iwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons
- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Special Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats

From:	Timmermann, Timothy
To:	NGB A4/A4A NEPA COMMENTS Org
Cc:	Akladiss, Naji N; Hopkins, Carla J; Loughlin, Anni; Timmermann, Timothy; Wintrob, Paul
Subject:	[Non-DoD Source] Proposed Environmental Assessment for projects at the Air National Guard 101st Air Refueling Wing at Bangor International Airport
Date:	Friday, October 15, 2021 10:07:00 AM

Dear Ms. Yott:

Thank you for informing us of the National Guard Bureau's intent to prepare an Environmental Assessment (EA) for several projects at the Air National Guard 101st Air Refueling Wing at Bangor International Airport in Bangor, Maine. We would appreciate the opportunity to review the EA when it is available and we encourage you to coordinate with the Maine Department of Environmental Protection (MEDEP) as you work to prepare the EA. We also recommend that you provide MEDEP with an opportunity to review the EA and suggest Naji Akladiss and Carla Hopkins as appropriate MEDEP points of contact (both are copied on this message so that you have their email addresses).

Please contact me if you have any questions.

Timothy L. Timmermann, Director
Office of Environmental Review
EPA New England-Region 1
5 Post Office Square, Suite 100
Mail Code 06-3
Boston, MA 02109-3912

Email: timmermann.timothy@epa.gov
Telephone: 617-918-1025
E-Fax: 617-918-0025

From:	Pauley, Nicole M on behalf of Maine Field Office, FW5
To:	NGB A4/A4A NEPA COMMENTS Org
Subject:	[Non-DoD Source] Request for comments on development of an Environmental Assessment for projects at the Air National Guard 101st Air Refueling Wing, Bangor, Maine
Date:	Tuesday, October 12, 2021 3:57:24 PM

Dear Christine,

This email is in response to your September 28, 2021, letter and September 29, 2021, email regarding proposed projects at the Air National Guard 101st Air Refueling Wing located at Bangor, Maine.

At this time, we do not have any comments or identified concerns with the proposed projects, or any relevant information related to our agency's trust resources to provide to you. As the NEPA process plays out and project plans become more refined, please keep in mind your responsibilities under the Endangered Species Act. We are happy to engage in conversations regarding the ESA at any point that you think is appropriate, including if a new species is listed in the future that might be present in the project area.

Currently, the only federally listed species where we foresee the possible need for ESA section 7 consultation is the northern long-eared bat. Projects that involve cutting down trees 3-inches DBH or larger would be the most typical trigger for section 7 consultation. As you are likely aware, many projects that "may affect" the northern long-eared bat are eligible for the streamlined consultation process associated with this species' 4(d) rule. You may also be aware that the northern long-eared bat is currently undergoing a status review, which is expected to the completed by September 30, 2022. This review could lead to a change in the listing status of the NLEB, which would have implications for ESA section 7 consultations. Any change in status, however, would require rule making, which would obviously take some time to complete. As needed, we can address any changes related to the status of the NLEB in the future.

In the future, please submit any requests for project reviews (including requests for section 7 consultations and INRMP reviews) to our general office email address at *mainefieldoffice@fws.gov.* This is still a fairly new process for us, and we are working to get the word out to our partners.

Thank you for your coordination.

Wende Mahaney

SHPO Letter

The following letter was sent to the Maine State Historic Preservation Commission. The response received immediately follows the letter.

Agency	Name	Address	Response Received
Maine State Historic Preservation Commission	Kirk Mohney Director and State Historic Preservation Officer	55 Capitol St. 65 State House Station Augusta ME 04333	X

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NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS 20762-5157

28 September 2021

Ms Jennifer Harty
Cultural Resources Program Manager (A4VN)
3501 Fetchet Ave
Joint Base Andrews MD 20762

Mr Kirk F. Mohney
Director and State Historic Preservation Officer
Maine State Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta ME 04333-0065

Dear Mr. Mohney,

The National Guard Bureau (NGB) is currently investigating the feasibility of short-term construction, demolition, and renovation projects at the Air National Guard (ANG) 101st Air Refueling Wing (101 ARW) located at Bangor International Airport in Bangor, Maine (Attachment 1). The purpose of the Proposed Action is to implement these projects from the Installation Development Plan (IDP) to provide the 101 ARW with properly sized and configured facilities required to effectively accomplish their mission. The need for the proposed action is to demolish, renovate, or replace outdated facilities, comply with antiterrorism/force protection (AT/FP) requirements, and accommodate the evolving mission of the 101 ARW. As directed by the National Environmental Policy Act (NEPA), the NGB, with support from Tetra Tech, is preparing an Environmental Assessment (EA) to evaluate the potential environmental effects associated with the Proposed Action. The purpose of this letter is to initiate consultation under Section 106 of the National Historic Preservation Act for the proposed actions.

The undertaking is composed of ten (10) projects from the IDP that would address current mission deficiencies and opportunities for the 101 ARW (Attachment 2). The NGB has reviewed the undertaking and defined the Area of Potential Effects (APE) as staging areas, areas of proposed ground disturbance, and facilities that would be renovated (Attachment 3).

In 2008, an architectural survey was conducted at the Maine Air National Guard (ME ANG) installation at the Bangor International Airport, Bangor, Maine. The 2008 survey included an evaluation of 20 buildings – 13 were less than 50 years old and evaluated under Criterion Consideration G and the remaining seven were over 50 years old and evaluated under the standard National Register of Historic Places (NRHP) Criteria A – D. In consultation with the ME State Historic Preservation Officer (SHPO), the NGB determined that an archaeological investigation was not necessary for the installation, due to extensive ground disturbance.

The results of the 2008 study were compiled in a report entitled *Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine* and, in 2009, used to create the Integrated Cultural Resource Management Plan (ICRMP) at the 101 ARW.

NGB determined (with SHPO concurrence) that of the 20 structures, only B510 was eligible for listing in the NRHP. Building 510 was previously determined eligible, but was mitigated in 2007 when a Memorandum of Agreement (MOA) between the Air Combat Command (ACC) Acquisition Management and Integration Center and the Maine SHPO mitigated any future actions affecting the building (Attachment 4). Though none of the other structures were determined eligible, the ICRMP noted that several buildings will require NRHP evaluation once they reach 50 years old (Attachment 5). As of 2021, B515 is older than 50 years and requires evaluation. Additionally, the ICRMP indicates that NGB should evaluate B420 under Criterion Consideration G for exceptional Cold War significance. Though B420 is occupied by the Defense Commissary Agency, the host-tenant agreement identifies the ME ANG as the responsible party for environmental and cultural resources compliance.

To consider the effects of the proposed projects, NGB will evaluate the NRHP eligibility of two structures, B515 and B420. Several of the IDP projects have the potential to affect the viewshed of B515 and/or B420, and project 5 would require interior renovation of B515. NGB cannot assess the effects of the projects until the NRHP eligibility of these structures is determined. Project 4 proposes the demolition of NRHP-eligible B510. As previously noted, NGB mitigated this structure in 2007; however, the IDP notes that NGB should consult with Maine SHPO if demolition is proposed.

In accordance with 36 CFR §800.3(c)3&4 , the 101 ARW and NGB are offering your office the opportunity to comment on our proposed undertakings. In addition to your office, NGB is consulting with federally recognized tribes who may have current or historical ties to the area.

Please provide comments to Jennifer Harty, Cultural Resources Program Manager (A4), 3501 Fetchet Avenue, Joint Base Andrew MD 20762-5157 or by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject line ATTN: 101 ARW EA. Thank you for your assistance.

Sincerely

JENNIFER L. HARTY, GS-13, DAF
Cultural Resources Program Manager

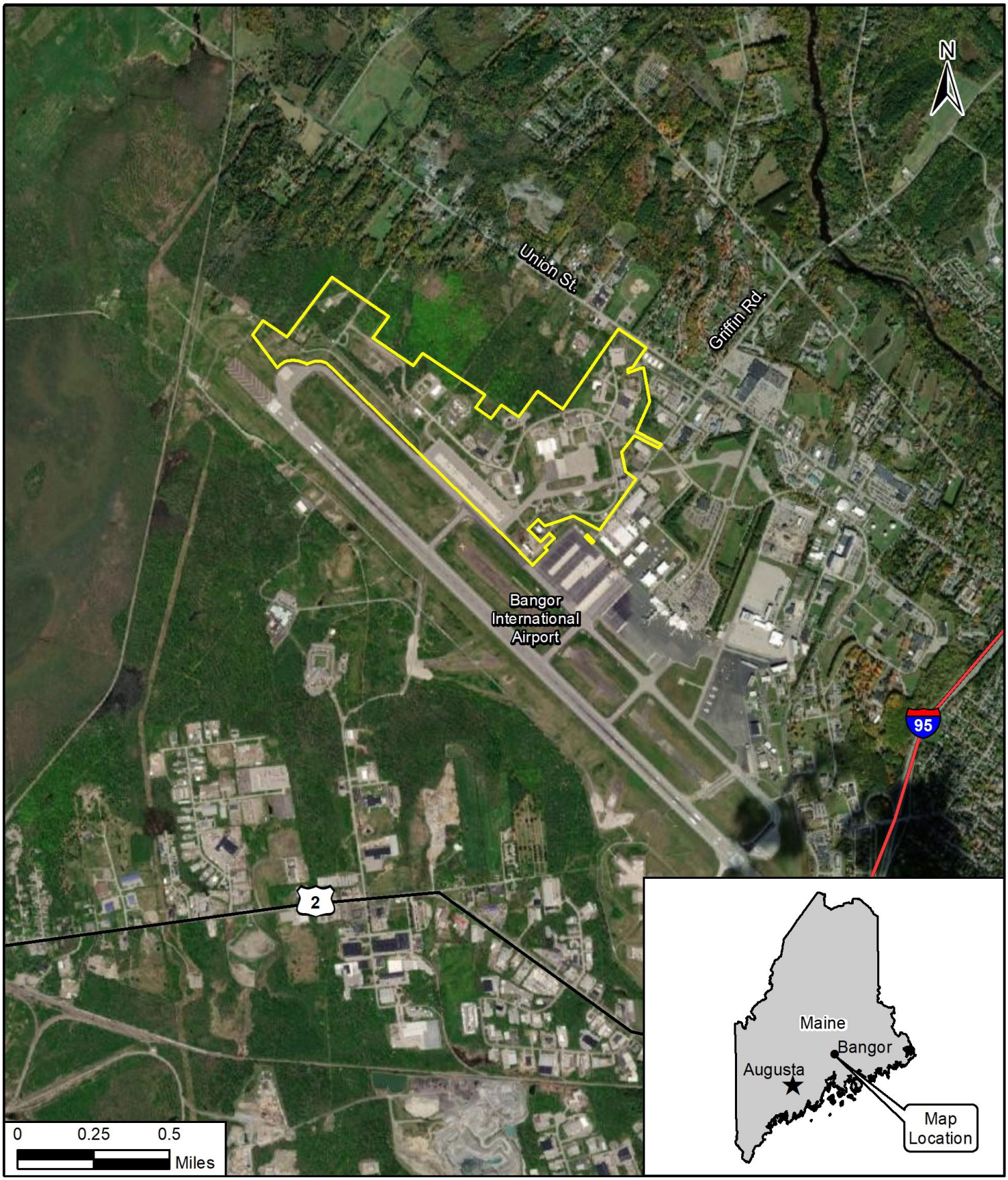
5 Attachments:

1. 101 ARW Location Map, 28 September 2021
2. 101 ARW Project List, 28 September 2021
3. 101 ARW Proposed Project Locations Map, 28 September 2021
4. MOA Between Headquarters Air Combat Command Acquisition Management and Integration Center and the Maine Historic Preservation Commission Regarding the Proposed Disposal of Over-the-Horizon Backscatter Radar Facilities in Maine, 2007
5. 101 ARW Archaeological and Architectural Survey Requirements for National Guard Bureau Installation Development Plans, 28 September 2021

Available upon request:

1. 101 ARW Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine, 2008
2. 101 ARW Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine 2009

Attachment 1: 101 ARW Bangor ANGB Location Map



LEGEND

Installation Boundary

Attachment 2: 101 ARW Project List

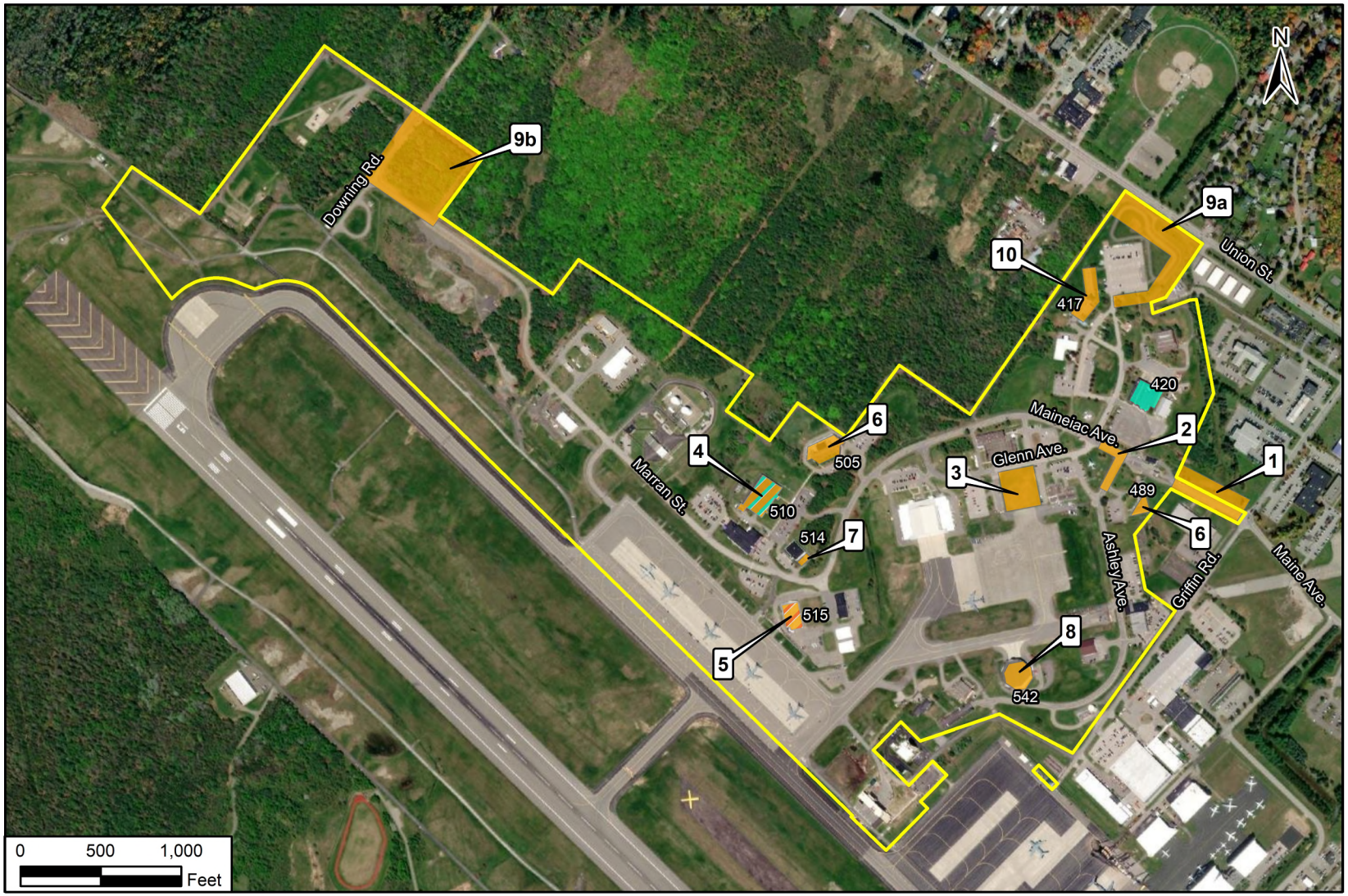
Project #	Project Title and Description	Project ID #	Estimated Year
1	**Alter Antiterrorism/Force Protection (AT/FP) at Main Gate (outside the gate)**. This project includes acquiring 0.93 acres to the right of the main gate as you are entering the gate on Maineiac Avenue; constructing 2,200 square yards (SY) of entrance and exit traffic lanes to accommodate truck traffic and inspection; repairing 3,500 SY of existing road pavement; renovating the gate, boundary fencing, generator, and signage; installing AT/FP traffic calming measures (barriers, planters); relocating electrical service, storm drains, and fire hydrant; and replacing and relocating the main base sign to include minor landscaping and utilities.	FKNN102003	2024
2	**Repair Main Entrance AT/FP (inside the gate)**. This project includes repairing 5,743 SY of road pavement; installing AT/FP barriers; and constructing 814 SY of sidewalk inside the main gate along Maineiac Avenue.	FKNN162349	2023
3	**Construct Fuel Cell Hangar**. This project would be the construction of a 40,871 square foot (SF) hangar off Glenn Avenue on the site of former building (B) 496 (aircraft maintenance hangar), to replace the existing hangar, which would be demolished (see project #8).	FKNN159044	2028
4	**Demolish B510**. This project would be demolition of B510 (34,551 SF heating facility building). The building remains from a prior Active Duty mission. It is not required for the 101 ARW mission and is incurring unnecessary maintenance and utility costs.	FKNN212001	2024
5	**Renovate B515 for Small Air Terminal (SAT)**. This project would be interior renovations to this 16,575 SF Aircraft Support Equipment shop/storage building to accommodate a new user of the facility (the SAT).	FKNN212002	2023
6	**Demolish B489 and B505**. This project would be demolition of two Reserve Forces Operational Training buildings: B489 (6,800 SF) and B505 (24,400 SF) because the buildings do not meet AT/FP standoff requirements from the base perimeter fence.	FKNN232003	2024
7	**Additions or Alterations (ADAL) to B514**. This project would be the construction of a 2,140 SF addition to B514 (the Communications Facility) for Communications Squadron vehicle maintenance and storage.	FKNN192001	2024
8	**Demolish B542**. This project would be the demolition of B542, the 23,418 SF fuel systems maintenance dock hangar. The 20 year old building is undersized and does not meet safety requirements or storage needs. The hangar does not allow for safe clearances around the aircraft while performing maintenance operations. The building would be demolished after the new hangar (project #3) would be constructed.	FKNN252001	2029
9	**Construct Second AT/FP Compliant Gate**. The current alternate gate is within the Quantity-Distance (QD) arc of the Munitions Storage Area (MSA). This project is in the very early stages. At this time, two possible locations are under consideration. One would be to construct a new gate off Union Street adjacent to the base's running track and connecting to Pesch Circle near B417. The other is to construct a new gate at the current alternate gate location off Downing Road, which would require rerouting of traffic once inside the base perimeter to avoid MSA QD arcs.	FKNN192006	2029

Attachment 2: 101 ARW Project List

Project #	Project Title and Description	Project ID #	Estimated Year
10	**ADAL to B417.** This project would be the construction of a 2,100 SF, 1-story addition to B417. B417 is the Troop Camp building, with barracks and dining hall. The addition would be on the east side of the building (facing the parking lot), between the lodging and dining wings of the building. The project also would include interior renovations (30,653 SF total) to the building's existing 21,219 SF, 3-story troop barracks and the 9,434 SF 1-story dining hall. The project would consolidate occupants of B489 and B505 (buildings to be demolished; see project #6) in to B417 to facilitate right-sizing of the base.	NA	2023

NA = Not available.

Attachment 3: 101 ARW Bangor ANGB Proposed Project Locations Map



LEGEND

- Installation Boundary
- Area of Potential Effect
- Potentially NRHP-Eligible Building in Viewshed of Projects
- NRHP-Eligible, but Mitigated under HABS/HAER Documentation Conducted by USAF in 2008
- Potentially NRHP-Eligible, to be Evaluated

Note: Areas shown are approximate.

Projects:

1. Main Gate AT/FP (outside gate)
2. Main Gate AT/FP (inside gate)
3. Construct Fuel Cell Hangar
4. Demolish B510
5. Renovate B515
6. Demolish B489 and B505
7. ADAL to B514
8. Demolish B542

9a. 2nd AT/FP Gate: Union St.

9b. 2nd AT/FP Gate: Downing Rd.

10. ADAL to B417

Attachment 4: MOA for B510

MEMORANDUM OF AGREEMENT

BETWEEN

HEADQUARTERS AIR COMBAT COMMAND ACQUISITION MANAGEMENT AND INTEGRATION CENTER

AND

THE MAINE HISTORIC PRESERVATION COMMISSION

REGARDING THE PROPOSED DISPOSAL OF OVER-THE-HORIZON BACKSCATTER RADAR FACILITIES IN MAINE

WHEREAS, the U.S. Air Force, herein represented by the Headquarters Air Combat Command Acquisition Management and Integration Center (ACC AMIC) at, Langley AFB, Virginia, has determined that the proposed disposal of Air Force property at Columbia Falls and Moscow Air Force installations will have an adverse effect upon the Over-the-Horizon Backscatter (OTHB) Radar System, a property eligible for inclusion in the National Register for Historic Places, and has consulted with the Maine Historic Preservation Commission, herein termed the Maine State Historic Preservation Officer (SHPO), pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 USC 470f); and

WHEREAS, the Advisory Council on Historic Preservation (Council) has been notified of this consultation per 36 CFR 800.6(a) (1) and declined to participate; and

WHEREAS, ACC invited the federally-recognized Passamaquoddy Tribe of Indian Township Reservation, the Passamaquoddy Tribe of Pleasant Point Reservation, and the Aroostook Band of Micmac Indians to participate in the consultation; and

WHEREAS, the Passamaquoddy Tribe requested participation in the Phase II archaeological evaluations at Columbia Falls and were allowed to do so; and

WHEREAS, no other comments from the tribes were received; and

WHEREAS, ACC conducted archaeological investigations at the Columbia Falls and Moscow installations, identifying three sites at the former which are ineligible for listing on the National Register of Historic Places; and

WHEREAS, definitions given in Appendix A are applicable throughout this Memorandum of Agreement;

NOW, THEREFORE, ACC AMIC and the Maine SHPO 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 historic properties.

STIPULATIONS

ACC AMIC will ensure that the following measures are carried out:

1. Prior to the disposal of the facilities and property at Columbia Falls and Moscow Air Force Stations, ACC AMIC will treat the effects of the undertaking by conducting Historic American Building Survey/Historic American Engineering Record (HABS/HAER) Level II documentation of the OTHB facilities at sites in Maine in accordance with the Secretary of the Interior's Standards for Architectural and Engineering Documentation. ACC AMIC shall ensure that the HABS/HAER documentation, including an original set of contact prints and negatives, as well as representative 35mm, 8X10" color prints and negatives, is submitted to and accepted by the Maine SHPO.

2. ACC AMIC shall provide a copy of the final report on Phase II archaeological site evaluations at the Columbia Falls installation to the Maine SHPO.

3. ACC AMIC shall work with the National Museum of the Air Force to establish an interpretive display concerning the OTHB radar system.

Execution of this Memorandum of Agreement by ACC AMIC and the Maine SHPO and implementation of its stipulations evidence that ACC AMIC has afforded the Maine SHPO an opportunity to comment on the proposed disposal of the Columbia Falls and Moscow installations and its effects on historic properties, and that ACC AMIC has taken into account the effects of the undertaking on historic properties.

POINTS of CONTACT

The State of Maine Historic Preservation Commission, Point of Contact:
Mr. Mike D. Jones
Maine Historic Preservation Commission
55 Capitol Street, 65 State House Station
Augusta, ME 04333
Telephone: (207) 287-2132
FAX: (207) 287-2335

Air Combat Command Program Management Squadron USAF
Point of Contact:
TSgt Richard E. Brown
ACC AMIC/PLGX
11817 Canon Blvd., Suite 306
Newport News, VA 23606
Telephone: (757) 764-9464
FAX: (757) 764-9477

AGREEMENT and ADMINISTRATION

This Memorandum of Agreement will be reviewed annually and shall be in effect until all of the before mentioned stipulations have been carried out. Upon completion of all above tasks this agreement will be terminated.

Signed: _____ Date: 7 Jun 07
Randal J. McFadden
Director, ACC Acquisition Management and Integration Center

Signed: _____ Date 8/14/07
Earle G. Shettleworth, Jr.
Director, Maine Historic Preservation Commission

Attachment 5: Archaeological and Architectural Survey Requirements for National Guard Bureau Installation Development Plans

101st Air Refueling Wing Bangor International Airport Air National Guard Base, Bangor, Maine

Architectural Surveys

Building #	Year Constructed	Current Age (2021)	Prev. Evaluation	Evaluation needed	IDP Projects with Potential Viewshed Impacts	Project with Direct Impacts	ICRMP Evaluation
B420	1987	34	none	G, less than 50 years	1, 2, 3, 6, 10	none	"In accordance with a host-tenant agreement, the ME ANG is responsible for environmental and cultural resources compliance for Building 420. At this time, Building 420 should be surveyed and evaluated for the NRHP under Criteria Consideration G for exceptional (less than 50 years old) Cold War significance." (ICRMP v)
B510	1984	37	G, eligible	none	5,6,7,8	4-demolish	A Memorandum of Agreement (MOA) was executed in August 2007 between the ACC Acquisition Management and Integration Center and the Maine SHPO regarding the OTHB radar facilities in Maine. Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Level II documentation subsequently was completed for Building 510; however, the IDP notes that the Maine SHPO should be consulted if demolition is proposed.

Attachment 5 (continued)							
Building #	**Year Constructed**	**Current Age (2021)**	**Prev. Evaluation**	**Evaluation needed**	**IDP Projects with Potential Viewshed Impacts**	**Project with Direct Impacts**	**ICRMP Evaluation**
B515	1960	61	G, not eligible	A, B, C	3,4,7,8	5-renovate	"Three Cold War-era buildings considered not eligible for the NRHP at the present time will require reevaluation upon reaching 50 years of age during the five-year period of this ICRMP. These are Building 515 and Building 497 at Bangor IAP (ANG), which will reach 50 years of age in 2010 and 2011." (ICRMP v)
Archaeological Surveys							
None							Per the 2008 survey entitled *Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine*, and in consultation with the Maine SHPO, it was determined that an archaeological investigation was not necessary for the ME ANG installation due to extensive ground disturbance coupled with a low probability of archaeological sites.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

October 13, 2021

Ms. Jennifer L. Harty
Cultural Resources Program Manager (A4VN)
National Guard Bureau
3501 Fetchet Ave
Joint Base Andrews, MD 20762

Project: MHPC #1647-21 Short Term Construction, Demolition and Renovation Projects; Air National Guard 101st Air Refueling Wing

Town: Bangor, ME

Dear Ms. Harty:

In response to your recent request, I have reviewed the information received September 29, 2021 to initiate consultation on the above referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

The Commission concurs with the status of previous National Register of Historic Places eligibility assessments, including the eligibility of Building 510. However, it is our understanding that because Buildings 515 and 420 are now at least fifty years of age, the National Guard Bureau will evaluate their National Register eligibility.

We look forward to continuing consultation with you on the proposed undertaking. If you have any questions, please contact me at kirk.mohney@maine.gov or (207) 287-3811.

Sincerely,

Kirk F. Mohney

Kirk F. Mohney
State Historic Preservation Officer

PHONE: (207) 287-2132 FAX: (207) 287-2335

NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS 20762-5157

08 May 2022

Kirk F. Mohney
Director, Maine Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta, ME, 04333-0065

Dear Mr. Mohney,

The National Guard Bureau (NGB) is proposing to provide the 101st Air Refueling Wing (ARW) of the Maine Air National Guard (ANG) at Bangor Air National Guard Base (ANGB) in Bangor, Maine with properly sized and configured facilities, infrastructure, and services as outlined in an Installation Development Plan (IDP). The proposed construction and renovation projects as well as the demolition of excess and inefficient structures would conserve energy and resources through consolidation and modernization that are needed to enable Bangor ANGB to maintain the level of readiness necessary to support its mission. As directed by the National Environmental Policy Act (NEPA), the NGB, acting in coordination with the United States Army Corps of Engineers (USACE), is preparing an Environmental Assessment (EA) in order to evaluate the potential environmental effects associated with the Proposed Actions. The purpose of this this letter is to conduct consultation under Section 106 of the National Historic Preservation Act (NHPA).

Project Description and Area of Potential Effects

The 101st ARW would implement all proposed demolition, renovation, and construction projects as illustrated in the Project Map and as summarized in the Project List (see Attachments 1-4). The 101st ARW has identified ten (10) projects that would enhance current and future mission and operational efficiency. The Area of Potential Effect (APE) for the proposed federal action is defined as the areas where ground disturbance is occurring, staging areas are located, and facilities/infrastructure are being renovated or demolished (see Attachment 2). The upcoming EA will evaluate preferred alternatives, second alternatives, and the impact of no action for each of the ten projects.

As noted in the project summary list (see Attachment 4), Buildings 489, 505, 510, and 542 are proposed for demolition as preferred and/or secondary alternatives. Buildings 417 and 515 are proposed for renovation, and Building 514 is proposed to have an addition.

Efforts to Identify Historic Properties

Bangor ANGB conducted cultural resource studies of the installation in 2007 and determined Building 510 to be National Register of Historic Places (NRHP) eligible based on its historic association with the Over-the-Horizon Backscatter Transmitting Array (see Attachment 6, pp 27-31). In 2007, Bangor ANGB and ME SHPO entered into a Memorandum of Agreement (MOA) regarding an adverse effect to the array. In 2009, Bangor ANGB created an Integrated Cultural Resources Management Plan (ICRMP) to identify and manage historic properties as outlined under Section 110 of the National Historic Preservation Act. Bangor ANGB has continued to update the ICRMP, as needed.

Based on information provided in the 2007 cultural resource survey, ICRMP, and Real Property files for Bangor ANGB, Buildings 514 and 542 are not historic age (constructed in 1996 and 1997) and are outside the period of evaluation for Cold War Era historic resources defined as 1945-1991 in *Coming in from the Cold: Military Heritage in the Cold War* (report on the Department of Defense Legacy Cold War Project, 1993) and Michelle Michael, Adam Smith, and Jennifer Sin's *The Architecture of the Department of Defense: A Military Style Guide* (Department of Defense Legacy Resource Management Program, 2011). The NGB previously evaluated Buildings 417 (constructed in 1986), 489 (constructed in 1986), and 505 (constructed in 1985) under Criterion Consideration G in 2008 and determined the three buildings to be not eligible for the NRHP.

For the proposed Bangor IDP project, the USACE and NGB contracted with a cultural resource firm to investigate two buildings (Buildings 510 and 515) that would be directly impacted by the project and one building (Building 420) that the ICRMP identified as needing evaluation (see Attachment 6). As noted in the 2022 survey report, Building 420, the base commissary built in 1987, is a one-story brick steel frame structure with brick veneer. As a common support-type building seen on military bases throughout the country, the building is not distinctive in terms of architecture or design and did not serve a crucial role in helping the base or the ANG fulfill its mission during the Cold War. Building 515, constructed in 1960 as a maintenance shop, is a one-story concrete block building with a metal gable roof. The building was significantly altered in 2005 and lost a considerable amount of its historic integrity. For historical significance, Building 515 lacks architectural distinction and merit and, as a maintenance building, did not serve a critical need to either the base or the ANG during the Cold War Era. Both Buildings 420 and 515 are determined not eligible for inclusion in the NRHP.

The attached survey report also addresses Building 510, which was previously determined NRHP eligible in 2007 and included in a mitigation procedure executed in a 2007 MOA. As noted within the survey, Building 510, a one-story brick veneer building built in 1984, served as part of the operations center for the Over-the-Horizon Backscatter Transmitting Array (OTHB). In the time since the NGB and Bangor ANGB fulfilled the MOA with HABS/HAER Level II documentation of the OTHB (including Building 510) the array systems in Columbia Falls and Moscow were dismantled and are no longer extant. Bangor ANGB also retired the old operations center instruments from the facility due to their being obsolete, and since the mid-2000s, has used the building as a classroom and administrative facility. As detailed within the survey report, Building 510 has seen significant alterations to doors, exterior facades, and its interior configuration. The building's loss of association with an extant array system and numerous alterations have negatively impacted Building 510's historic integrity. As an individual building evaluated under Criterion Consideration G, the building no longer conveys historical significance as a Cold War Era resource and is architecturally indistinctive. The NGB has determined Building 510 as not eligible for the NRHP.

No cultural resource survey performed at Bangor ANGB (in 2007 or 2022) has identified a historic district on the installation. The ME SHPO concurred that no historic district exists on base based on the findings of the 2007 survey (see Attachment 5).

Proposed demolition and drainage projects within the IDP will require ground disturbance, but no archaeological sites will be affected. In the 2006 cultural resource survey Bangor ANGB and the NGB determined that no archaeological sites are identified on base and ME SHPO concurred that no further archaeological work was required on the installation (see Attachment 6). As with all ground disturbing activities, however, Bangor ANGB recognizes that inadvertent discovery of cultural resources is possible during construction and maintains a standard operating procedure that includes halting operations and notifying SHPO. Section 106 consultation letters were sent to Tribal Historic Preservation Officers (THPO) or Tribal governments via U.S. Postal Service (USPS) Certified Mail and Return Receipt on

October 18, 2021. To date, responses were received from the Passamaquoddy Tribe and the Penobscot Nation, stating that the proposed projects would not have any impact on cultural and historical concerns to their Tribes.

Finding of No Historic Properties Affected

In fulfillment of Section 106 under 36 CFR § 800.4, the NGB has reached a determination of no historic properties affected and invites your office to comment on our undertaking and effects determination. Please provide any comments you may have within 30 days of receipt of this letter to Jennifer Harty, 3501 Fetchet Avenue, Joint Base Andrews MD 20762-5157 or jennifer.harty@us.af.mil. Thank you for your assistance.

Sincerely

JENNIFER L. HARTY, GS-13, DAF
Cultural Resources Program Manager

6 Attachments:

1. Installation Location Map
2. Project Location Map
3. Map Showing Locations of Surveyed Buildings
4. Project Summary List
5. ME SHPO Concurrence Letter, 2008
6. Cultural Resources Survey Report, 2022

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

May 25, 2022

Ms. Jennifer Harty
National Guard Bureau
3501 Fetchet Avenue
Joint Base Andrews MD 20762-5157

Project: MHPC# 0769-22 Maine Air National Guard; Bangor Air National Guard Base
Provide Properly Sized and Configured Facilities; Building Demolitions

Town: Bangor, ME

Dear Ms. Harty:

In response to your recent request, I have reviewed the information received May 12, 2022 to initiate consultation on the above referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

After review of the "Architectural Survey Report for 101st Air Refueling Wing at Bangor Air National Guard Base," our office concurs that Buildings 420 and 515 are not eligible for listing in the National Register of Historic Places; however, the eligibility of Building 420 should be revisited when it turns 50 years old.

In addition, Building 510 has not been majorly altered but its former use and OTH-B equipment seem the only significant characteristics. With the associated arrays and the equipment removed, this non-descript building does not have any particular features associated with OTH-B. We feel that this building by itself is not eligible for its association with the OTH-B, and outside that association, it is not significant. Please send a hard copy of the architectural history survey report to our office for our records.

Based on the information submitted, I have concluded that there will be no historic properties (architectural or archaeological) affected by this proposed undertaking, as defined by Section 106.

Please contact Megan Rideout at (207) 287-2992 or megan.m.rideout@maine.gov if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney

Kirk F. Mohney
State Historic Preservation Officer

PHONE: (207) 287-2132 FAX: (207) 287-2335

Tribal Letters

The following letter was sent to the federally recognized tribes listed below. Responses received immediately follow the letter sent.

Tribe	Name	Address	Response Received
Aroostook Band of Micmac Indians	Edward Peter-Paul, Chief	7 Northern Rd. Presque Isle ME 04736	
Houlton Band of Maliseet Indians	Clarissa Sabattis, Chief	88 Bell Rd. Littleton ME 04730	
Passamaquoddy Tribe, Indian Township Reservation	William J. Nicholas Sr., Chief	PO Box 301 Princeton ME 04668	X
Passamaquoddy Tribe, Pleasant Point Reservation	Elizabeth (Maggie) Dana, Chief	9 Sakom Rd. Perry ME 04667	X
Penobscot Nation	Kirk E. Francis, Chief	27 Wabanaki Way Indian Island ME 04468	X

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DEPARTMENT OF DEFENSE, VETERANS AND EMERGENCY MANAGEMENT
101ST AIR REFUELING WING (AMC), MAINE NATIONAL GUARD
101 MAINEIAC AVE, SUITE 505
BANGOR, ME 04401-8009

4 October 2021

Colonel Matthew A. Bourassa, USAF
Commander, 101st Air Refueling Wing
101 Maineiac Ave, Suite 505
Bangor ME 04401-8029

Chief Edward Peter-Paul
Aroostook Band of Micmac Indians
7 Northern Road
Presque Isle ME 04736

Dear Chief Peter-Paul,

The National Guard Bureau (NGB) is currently investigating the feasibility of short-term construction, demolition, and renovation projects at the Air National Guard (ANG) 101st Air Refueling Wing (101 ARW) located at Bangor International Airport in Bangor, Maine (Attachment 1). The purpose of the Proposed Action is to implement these projects from the Installation Development Plan (IDP) to provide the 101 ARW with properly sized and configured facilities required to effectively accomplish their mission. The need for the proposed action is to demolish, renovate, or replace outdated facilities, comply with antiterrorism/force protection (AT/FP) requirements, and accommodate the evolving mission of the 101 ARW. As directed by the National Environmental Policy Act (NEPA), the NGB, with support from Tetra Tech, is preparing an Environmental Assessment (EA) to evaluate the potential environmental effects associated with the Proposed Action. The purpose of this letter is to initiate consultation under Section 106 of the National Historic Preservation Act for the proposed actions.

The undertaking is composed of ten (10) projects from the IDP that would address current mission deficiencies and opportunities for the 101 ARW (Attachment 2). The NGB has reviewed the undertaking and defined the Area of Potential Effects (APE) as staging areas, areas of proposed ground disturbance, and facilities that would be renovated (Attachment 3).

In 2008, an architectural survey was conducted at the Maine Air National Guard (ME ANG) installation at the Bangor International Airport, Bangor, Maine. The 2008 survey included an evaluation of 20 buildings – 13 were less than 50 years old and evaluated under Criterion Consideration G and the remaining seven were over 50 years old and evaluated under the standard National Register of Historic Places (NRHP) Criteria A – D. In consultation with the ME State Historic Preservation Officer (SHPO), the NGB determined that an archaeological investigation was not necessary for the installation, due to extensive ground disturbance.

The results of the 2008 study were compiled in a report entitled *Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine* and, in 2009, used to create the Integrated Cultural Resource Management Plan (ICRMP) at the 101 ARW.

NGB determined (with SHPO concurrence) that of the 20 structures, only B510 was eligible for listing in the NRHP. Building 510 was previously determined eligible, but was mitigated in 2007 when a Memorandum of Agreement (MOA) between the Air Combat Command (ACC) Acquisition Management and Integration Center and the Maine SHPO mitigated any future actions affecting the building (Attachment 4). Though none of the other structures were determined eligible, the ICRMP noted that several buildings will require NRHP evaluation once they reach 50 years old (Attachment 5). As of 2021, B515 is older than 50 years and requires evaluation. Additionally, the ICRMP indicates that NGB should evaluate B420 under Criterion Consideration G for exceptional Cold War significance. Though B420 is occupied by the Defense Commissary Agency, the host-tenant agreement identifies the ME ANG as the responsible party for environmental and cultural resources compliance.

To consider the effects of the proposed projects, NGB will evaluate the NRHP eligibility of two structures, B515 and B420. Several of the IDP projects have the potential to affect the viewshed of B515 and/or B420, and project 5 would require interior renovation of B515. NGB cannot assess the effects of the projects until the NRHP eligibility of these structures is determined. Project 4 proposes the demolition of NRHP-eligible B510. As previously noted, NGB mitigated this structure in 2007; however, the IDP notes that NGB should consult the Maine SHPO if demolition is proposed.

We invite your input regarding Tribal resources that may be present within the APE. To that end, and in accordance with Executive Order (EO) 13175, Consultation and Coordination with Indian Tribal Governments; EO 12372, Intergovernmental Review of Federal Programs; and Section 106 of the National Historic Preservation Act (36 Code of Federal Regulations [CFR] Parts 800.2, 800.3, and 800.4), the 101 ARW and NGB invite you to consult on the proposed undertakings.

As part of our consultation efforts, we respectfully request your assistance in identifying the following:

- traditional resources that may be located within the current APE;
- historic properties in the APE of which we may not be aware; and/or
- your Tribe's interest in participating in additional consultation.

If you request additional consultation, the NGB and 101 ARW will work with your office to adopt procedures that will meet your Tribe's needs and requirements for continued consultation.

In order for the NGB to address your concerns in a timely manner for both the Tribe and the proposed undertaking, please respond to this letter within 30 days of receipt. Please provide comments to Jennifer Harty, Cultural Resources Program Manager (A4), 3501 Fetchet Avenue, Joint Base Andrew, MD 20762-5157 or by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject line ATTN: 101 ARW EA. Thank you for your assistance.

Sincerely

BOURASSA.MATTHEW.ALAN.1006512719

Digitally signed by BOURASSA.MATTHEW.ALAN.1006512719
Date: 2021.10.15 08:37:37 -04'00'

MATTHEW A. BOURASSA, Col, MeANG
Commander, 101 ARW/CC

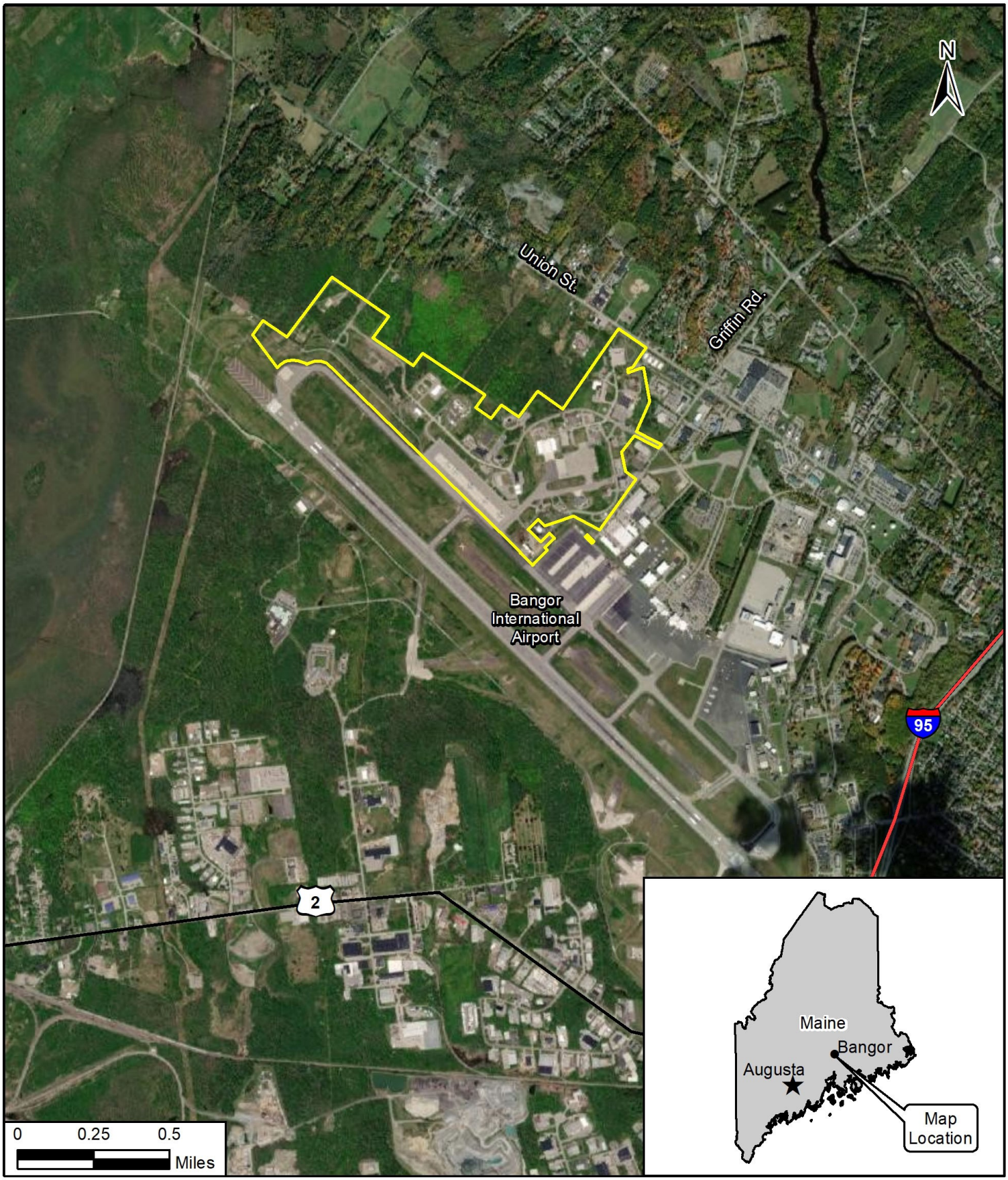
5 Attachments:

1. 101 ARW Location Map, 4 October 2021
2. 101 ARW Project List, 4 October 2021
3. 101 ARW Proposed Project Locations Map, 4 October 2021
4. MOA Between Headquarters Air Combat Command Acquisition Management and Integration Center and the Maine Historic Preservation Commission Regarding the Proposed Disposal of Over-the-Horizon Backscatter Radar Facilities in Maine, 2007
5. 101 ARW Archaeological and Architectural Survey Requirements for National Guard Bureau Installation Development Plans, 4 October 2021

Available upon request:

1. 101 ARW Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine, 2008
2. 101 ARW Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine 2009

Attachment 1: 101 ARW Bangor ANGB Location Map



LEGEND

Installation Boundary

Attachment 2: 101 ARW Project List

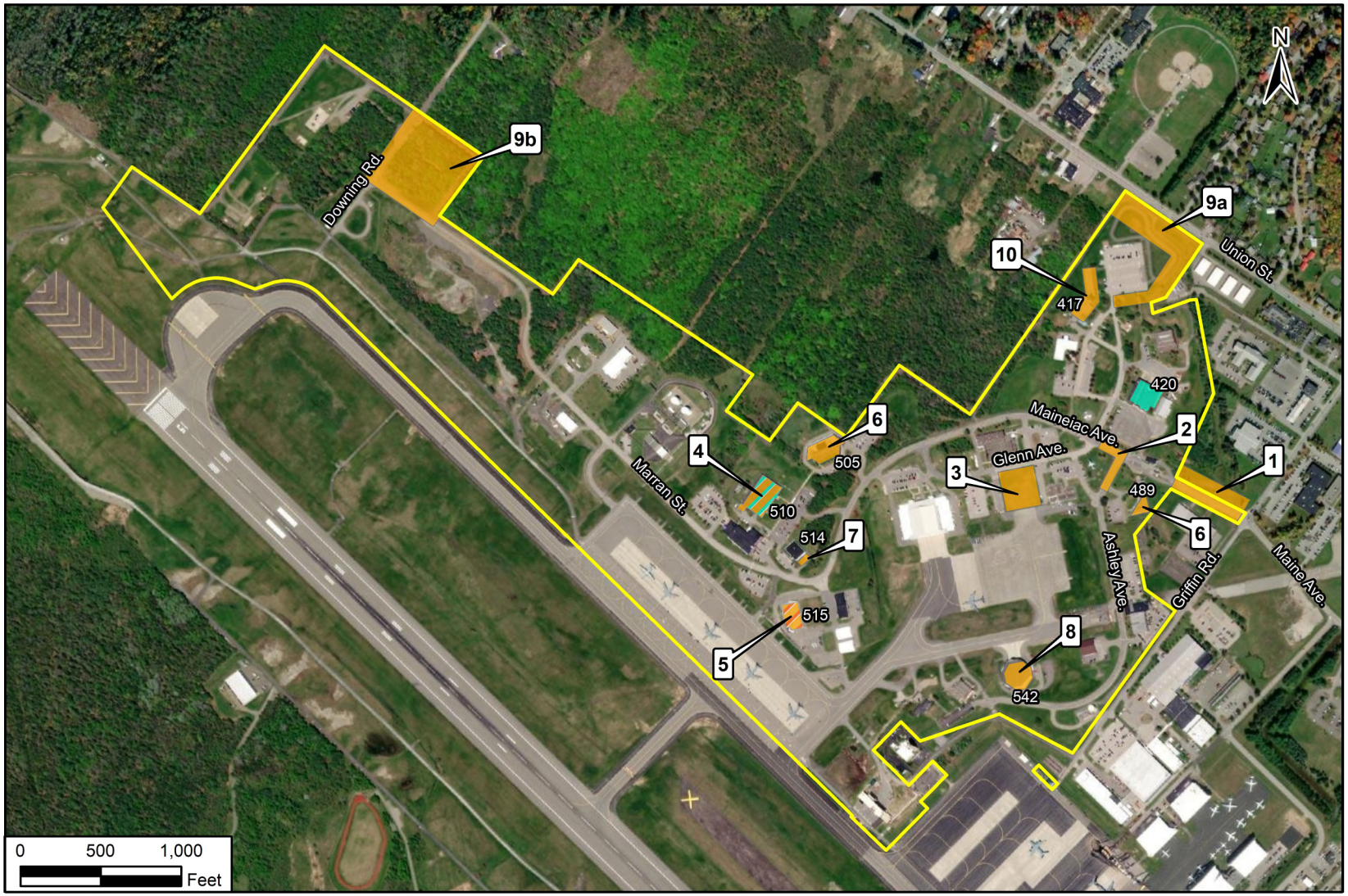
Project #	Project Title and Description	Project ID #	Estimated Year
1	**Alter Antiterrorism/Force Protection (AT/FP) at Main Gate (outside the gate)**. This project includes acquiring 0.93 acres to the right of the main gate as you are entering the gate on Maineiac Avenue; constructing 2,200 square yards (SY) of entrance and exit traffic lanes to accommodate truck traffic and inspection; repairing 3,500 SY of existing road pavement; renovating the gate, boundary fencing, generator, and signage; installing AT/FP traffic calming measures (barriers, planters); relocating electrical service, storm drains, and fire hydrant; and replacing and relocating the main base sign to include minor landscaping and utilities.	FKNN102003	2024
2	**Repair Main Entrance AT/FP (inside the gate)**. This project includes repairing 5,743 SY of road pavement; installing AT/FP barriers; and constructing 814 SY of sidewalk inside the main gate along Maineiac Avenue.	FKNN162349	2023
3	**Construct Fuel Cell Hangar**. This project would be the construction of a 40,871 square foot (SF) hangar off Glenn Avenue on the site of former building (B) 496 (aircraft maintenance hangar), to replace the existing hangar, which would be demolished (see project #8).	FKNN159044	2028
4	**Demolish B510**. This project would be demolition of B510 (34,551 SF heating facility building). The building remains from a prior Active Duty mission. It is not required for the 101 ARW mission and is incurring unnecessary maintenance and utility costs.	FKNN212001	2024
5	**Renovate B515 for Small Air Terminal (SAT)**. This project would be interior renovations to this 16,575 SF Aircraft Support Equipment shop/storage building to accommodate a new user of the facility (the SAT).	FKNN212002	2023
6	**Demolish B489 and B505**. This project would be demolition of two Reserve Forces Operational Training buildings: B489 (6,800 SF) and B505 (24,400 SF) because the buildings do not meet AT/FP standoff requirements from the base perimeter fence.	FKNN232003	2024
7	**Additions or Alterations (ADAL) to B514**. This project would be the construction of a 2,140 SF addition to B514 (the Communications Facility) for Communications Squadron vehicle maintenance and storage.	FKNN192001	2024
8	**Demolish B542**. This project would be the demolition of B542, the 23,418 SF fuel systems maintenance dock hangar. The 20 year old building is undersized and does not meet safety requirements or storage needs. The hangar does not allow for safe clearances around the aircraft while performing maintenance operations. The building would be demolished after the new hangar (project #3) would be constructed.	FKNN252001	2029
9	**Construct Second AT/FP Compliant Gate**. The current alternate gate is within the Quantity-Distance (QD) arc of the Munitions Storage Area (MSA). This project is in the very early stages. At this time, two possible locations are under consideration. One would be to construct a new gate off Union Street adjacent to the base's running track and connecting to Pesch Circle near B417. The other is to construct a new gate at the current alternate gate location off Downing Road, which would require rerouting of traffic once inside the base perimeter to avoid MSA QD arcs.	FKNN192006	2029

Attachment 2: 101 ARW Project List

Project #	Project Title and Description	Project ID #	Estimated Year
10	**ADAL to B417.** This project would be the construction of a 2,100 SF, 1-story addition to B417. B417 is the Troop Camp building, with barracks and dining hall. The addition would be on the east side of the building (facing the parking lot), between the lodging and dining wings of the building. The project also would include interior renovations (30,653 SF total) to the building's existing 21,219 SF, 3-story troop barracks and the 9,434 SF 1-story dining hall. The project would consolidate occupants of B489 and B505 (buildings to be demolished; see project #6) in to B417 to facilitate right-sizing of the base.	NA	2023

NA = Not available.

Attachment 3: 101 ARW Bangor ANGB Proposed Project Locations Map



LEGEND

- Installation Boundary
- Area of Potential Effect
- Potentially NRHP-Eligible Building in Viewshed of Projects
- NRHP-Eligible, but Mitigated under HABS/HAER Documentation Conducted by USAF in 2008
- Potentially NRHP-Eligible, to be Evaluated

Note: Areas shown are approximate.

Projects:

1. Main Gate AT/FP (outside gate)
2. Main Gate AT/FP (inside gate)
3. Construct Fuel Cell Hangar
4. Demolish B510
5. Renovate B515
6. Demolish B489 and B505
7. ADAL to B514
8. Demolish B542

9a. 2nd AT/FP Gate: Union St.

9b. 2nd AT/FP Gate: Downing Rd.

10. ADAL to B417

Attachment 4: MOA for B510

MEMORANDUM OF AGREEMENT

BETWEEN

HEADQUARTERS AIR COMBAT COMMAND ACQUISITION MANAGEMENT AND INTEGRATION CENTER

AND

THE MAINE HISTORIC PRESERVATION COMMISSION

REGARDING THE PROPOSED DISPOSAL OF OVER-THE-HORIZON BACKSCATTER RADAR FACILITIES IN MAINE

WHEREAS, the U.S. Air Force, herein represented by the Headquarters Air Combat Command Acquisition Management and Integration Center (ACC AMIC) at, Langley AFB, Virginia, has determined that the proposed disposal of Air Force property at Columbia Falls and Moscow Air Force installations will have an adverse effect upon the Over-the-Horizon Backscatter (OTHB) Radar System, a property eligible for inclusion in the National Register for Historic Places, and has consulted with the Maine Historic Preservation Commission, herein termed the Maine State Historic Preservation Officer (SHPO), pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 USC 470f); and

WHEREAS, the Advisory Council on Historic Preservation (Council) has been notified of this consultation per 36 CFR 800.6(a) (1) and declined to participate; and

WHEREAS, ACC invited the federally-recognized Passamaquoddy Tribe of Indian Township Reservation, the Passamaquoddy Tribe of Pleasant Point Reservation, and the Aroostook Band of Micmac Indians to participate in the consultation; and

WHEREAS, the Passamaquoddy Tribe requested participation in the Phase II archaeological evaluations at Columbia Falls and were allowed to do so; and

WHEREAS, no other comments from the tribes were received; and

WHEREAS, ACC conducted archaeological investigations at the Columbia Falls and Moscow installations, identifying three sites at the former which are ineligible for listing on the National Register of Historic Places; and

WHEREAS, definitions given in Appendix A are applicable throughout this Memorandum of Agreement;

NOW, THEREFORE, ACC AMIC and the Maine SHPO 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 historic properties.

STIPULATIONS

ACC AMIC will ensure that the following measures are carried out:

1. Prior to the disposal of the facilities and property at Columbia Falls and Moscow Air Force Stations, ACC AMIC will treat the effects of the undertaking by conducting Historic American Building Survey/Historic American Engineering Record (HABS/HAER) Level II documentation of the OTHB facilities at sites in Maine in accordance with the Secretary of the Interior's Standards for Architectural and Engineering Documentation. ACC AMIC shall ensure that the HABS/HAER documentation, including an original set of contact prints and negatives, as well as representative 35mm, 8X10" color prints and negatives, is submitted to and accepted by the Maine SHPO.

2. ACC AMIC shall provide a copy of the final report on Phase II archaeological site evaluations at the Columbia Falls installation to the Maine SHPO.

3. ACC AMIC shall work with the National Museum of the Air Force to establish an interpretive display concerning the OTHB radar system.

Execution of this Memorandum of Agreement by ACC AMIC and the Maine SHPO and implementation of its stipulations evidence that ACC AMIC has afforded the Maine SHPO an opportunity to comment on the proposed disposal of the Columbia Falls and Moscow installations and its effects on historic properties, and that ACC AMIC has taken into account the effects of the undertaking on historic properties.

POINTS of CONTACT

The State of Maine Historic Preservation Commission, Point of Contact:
Mr. Mike D. Jones
Maine Historic Preservation Commission
55 Capitol Street, 65 State House Station
Augusta, ME 04333
Telephone: (207) 287-2132
FAX: (207) 287-2335

Air Combat Command Program Management Squadron USAF
Point of Contact:
TSgt Richard E. Brown
ACC AMIC/PLGX
11817 Canon Blvd., Suite 306
Newport News, VA 23606
Telephone: (757) 764-9464
FAX: (757) 764-9477

AGREEMENT and ADMINISTRATION

This Memorandum of Agreement will be reviewed annually and shall be in effect until all of the before mentioned stipulations have been carried out. Upon completion of all above tasks this agreement will be terminated.

Signed: _____ Date: 7 Jun 07
Randal J. McFadden
Director, ACC Acquisition Management and Integration Center

Signed: _____ Date 8/14/07
Earle G. Shettleworth, Jr.
Director, Maine Historic Preservation Commission

Attachment 5: Archaeological and Architectural Survey Requirements for National Guard Bureau Installation Development Plans

101st Air Refueling Wing Bangor International Airport Air National Guard Base, Bangor, Maine

Architectural Surveys

Building #	Year Constructed	Current Age (2021)	Prev. Evaluation	Evaluation needed	IDP Projects with Potential Viewshed Impacts	Project with Direct Impacts	ICRMP Evaluation
B420	1987	34	none	G, less than 50 years	1, 2, 3, 6, 10	none	"In accordance with a host-tenant agreement, the ME ANG is responsible for environmental and cultural resources compliance for Building 420. At this time, Building 420 should be surveyed and evaluated for the NRHP under Criteria Consideration G for exceptional (less than 50 years old) Cold War significance." (ICRMP v)
B510	1984	37	G, eligible	none	5,6,7,8	4-demolish	A Memorandum of Agreement (MOA) was executed in August 2007 between the ACC Acquisition Management and Integration Center and the Maine SHPO regarding the OTHB radar facilities in Maine. Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Level II documentation subsequently was completed for Building 510; however, the IDP notes that the Maine SHPO should be consulted if demolition is proposed.

Attachment 5 (continued)							
Building #	**Year Constructed**	**Current Age (2021)**	**Prev. Evaluation**	**Evaluation needed**	**IDP Projects with Potential Viewshed Impacts**	**Project with Direct Impacts**	**ICRMP Evaluation**
B515	1960	61	G, not eligible	A, B, C	3,4,7,8	5-renovate	"Three Cold War-era buildings considered not eligible for the NRHP at the present time will require reevaluation upon reaching 50 years of age during the five-year period of this ICRMP. These are Building 515 and Building 497 at Bangor IAP (ANG), which will reach 50 years of age in 2010 and 2011." (ICRMP v)
Archaeological Surveys							
None							Per the 2008 survey entitled *Cultural Resources Survey, Architecture and Archaeology, of Maine Air National Guard Installations at Bangor Air National Guard Base and South Portland Air National Guard Station, Penobscot and Cumberland Counties, Maine*, and in consultation with the Maine SHPO, it was determined that an archaeological investigation was not necessary for the ME ANG installation due to extensive ground disturbance coupled with a low probability of archaeological sites.

Tribal Historic Preservation Office

Passamaquoddy Tribe
PO Box 159 Princeton, Me. 04668
207-214-4051

November 1, 2021

JENNIFER L. HARTY, M.A., RPA, GS-13, DAF
Cultural Resources Program Manager A4VN
Air National Guard Readiness Center
3501 Fetchet Avenue
Joint Base Andrews, MD 20762

Re: Bangor – Air National Guard Wing Project

Dear Jennifer;

The Passamaquoddy THPO has reviewed the following applications regarding the historic properties and significant religious and cultural properties in accordance with NHPA, NEPA, AIRFA, NAGPRA, ARPA, Executive Order 13007 Indian Sacred Sites, Executive Order 13175 Consultation and Coordination with Indian Tribal Governments, and Executive Order 12898 Environmental Justice.

The Projects listed above will not have any impact on cultural and historical concerns of the Passamaquoddy Tribe.

Sincerely;

Donald Soctomah
Soctomah@gmail.com
THPO
Passamaquoddy Tribe

PENOBSCOT NATION
CULTURAL & HISTORIC PRESERVATION
12 WABANAKI WAY, INDIAN ISLAND, ME 04468

CHRIS SOCKALEXIS – TRIBAL HISTORIC PRESERVATION OFFICER
E-MAIL: chris.sockalexis@penobscotnation.org

NAME	Jennifer Harty
ADDRESS	Air National Guard Readiness Center 3501 Fetchet Avenue Joint Base Andrews, MD 20762
OWNER'S NAME	National Guard Bureau
TELEPHONE	
EMAIL	NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil
PROJECT NAME	Short-term construction, demolition, and renovation projects at the Air National Guard 101st Air Refueling Wing - Bangor International Airport
PROJECT SITE	Bangor, ME
DATE OF REQUEST	October 29, 2021
DATE REVIEWED	January 21, 2022

Thank you for the opportunity to comment on the above referenced project. This project appears to have no impact on a structure or site of historic, architectural or archaeological significance to the Penobscot Nation as defined by the National Historic Preservation Act of 1966, as amended.

If there is an inadvertent discovery of Native American cultural materials during the course of the project, please contact my office at (207) 817-7471. Thank you for consulting with the Penobscot Nation Tribal Historic Preservation Office with this project.

Chris Sockalexis, THPO
Penobscot Nation

Appendix B

Notice of Availability

To be provided after NOA is published.

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Appendix C

Air Conformity Applicability Assessment

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Both the United States Environmental Protection Agency (EPA) and the state have established General Conformity Rules (GCR) specifically to ensure that the actions taken by federal agencies in nonattainment and maintenance areas do not affect a region's ability to meet the National Ambient Air Quality Standards (NAAQS) in a timely fashion. The GCR plays an important role in helping states and tribal regions improve air quality in those areas that do not meet the NAAQS. The general conformity rule divides the air conformity process into two distinct areas: applicability analysis and conformity determination. This assessment provides an applicability analysis to determine if a formal conformity determination is required.

National Ambient Air Quality Standards. The Clean Air Act (CAA) (42 United States Code [U.S.C.] §§ 7401–7671q), as amended, assigns EPA responsibility to establish the primary and secondary NAAQS (40 Code of Federal Regulations [CFR] Part 50) that specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead (Pb). Primary NAAQS provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary NAAQS provide public welfare protection, including protection against decreased visibility, harm to animals, and damage to buildings, crops, and vegetation. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Table C-1 outlines the NAAQS for each criteria pollutant.

Table C-1. National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
CO		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Pb		Primary and Secondary	Rolling 3-month average	0.15 micrograms/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	Annual	53 ppb	Annual mean
O_3		Primary and Secondary	8-hour	0.070 ppm	Annual fourth highest daily maximum 8-hour concentration, averaged over 3 years
PM	$PM_{2.5}$	Primary	Annual	12 micrograms/m^3	Annual mean, averaged over 3 years
		Secondary	Annual	15 micrograms/m^3	Annual mean, averaged over 3 years
		Primary and Secondary	24-hour	35 micrograms/m^3	98th percentile, averaged over 3 years

	PM_{10}	Primary and Secondary	24-hour	150 micrograms/m^3	Not to be exceeded more than once per year on average over 3 years
SO_2		Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: 40 CFR 50.1-50.12; USEPA 2021a.
Notes: ppm = parts per million; ppb = parts per billion; µg/m3 = micrograms per cubic meter.

Attainment Status. Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as nonattainment areas. Federal regulations designate AQCRs with levels below the NAAQS as attainment areas. Maintenance areas are AQCRs that have previously been designated as nonattainment and have been redesignated to attainment for a probationary period through implementation of maintenance plans. The portions of Penobscot County and all areas associated with the action are within the Millinocket AQCR (AQCR 109) (40 CFR Part 81). EPA has designated these portions of Penobscot County, and therefore all areas associated with the Proposed Action, as a maintenance area for the SO_2 NAAQS, and in full attainment for all other criteria pollutants (USEPA 2021b).

***De Minimis* Thresholds.** The applicability analysis process requires federal agencies to determine if their proposed action(s) would increase emissions of criteria pollutants above preset threshold levels (40 CFR §93.153). These threshold rates vary depending on severity of the nonattainment and geographic location. *De minimis* emissions are total direct and indirect emissions of a criteria pollutant caused by a federal action in a nonattainment or maintenance area at rates less than specified applicability thresholds (Table C-2 and C-3).

Table C-2 Applicability Thresholds for Nonattainment Areas

Pollutant/Nonattainment Status	Applicability Threshold (Tons/Year)
Ozone (VOC's or NO_X):	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other ozone NAA's outside an ozone transport region	100
Other ozone NAA's inside an ozone transport region:	
VOC	50
NO_X	100
Carbon Monoxide: All NAA's	100
SO_2 or NO_2: All NAA's	100
PM_{10}:	
Moderate NAA's	100
Serious NAA's	70
$PM_{2.5}$ (direct emissions, SO_2, NO_X, VOC, and Ammonia):	
Moderate NAA's	100
Serious NAA's	70
Pb: All NAA's	25

Notes: NAA = Nonattainment Area, NO_2 = nitrogen dioxide, NO_x = oxides of nitrogen, Pb = lead, $PM_{2.5}$ = particulate matter, less than 2.5 microns in diameter, PM_{10} = particulate matter less than 10 microns in diameter, SO_2 = sulfur dioxide, VOC = volatile organic compound.

Table C-3 Applicability Thresholds for Maintenance Areas

Pollutant/Maintenance Status	Applicability Threshold (Tons/Year)
Ozone (NO_X), SO_2, or NO_2:	
All maintenance areas	100
Ozone (VOC's)	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon monoxide: All maintenance areas	100
PM_{10}: All maintenance areas	100
$PM_{2.5}$ (direct emissions, SO_2, NO_X, VOC, and Ammonia)	100
All maintenance areas	100
Pb: All maintenance areas	25
Notes: NO_2 = nitrogen dioxide, NO_x = oxides of nitrogen, Pb = lead, $PM_{2.5}$ = particulate matter, less than 2.5 microns in diameter, PM_{10} = particulate matter less than 10 microns in diameter, SO_2 = sulfur dioxide, VOC = volatile organic compound.	

Proposed Action. The Proposed Action is to adopt and implement the 101st Air Refueling Wing (101 ARW) Bangor Air National Guard Base (ANGB) Installation Development Plan (IDP). The IDP, which was finalized in 2018, is the result of a comprehensive planning process and provides the 101 ARW with a planning, programming, and development strategy that addresses current and programmed mission deficiencies and opportunities at the base. The Proposed Action include the implementation of the projects outlined in the Maine ANG Base IDP. The construction efforts include:

- 45,000 square feet (SF) of building construction
- 60,000 SF of grading
- 9,000 SF of trenching
- 45,000 SF of architectural coatings
- 45,000 SF of paving
- 89,000 SF of demolition
- 44,000 SF reduction in heating of buildings

Methodology. The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impacts associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). Total direct and indirect emissions associated with the action were

estimated through ACAM on a calendar-year basis for the construction and operations (net gain/loss upon action fully implemented) emissions. A detailed emissions report is attached.

Applicability Determination. General Conformity under the CAA, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B. Based on the analysis, as outlined in the attached Record of Conformity Analysis (ROCA) the requirements of this rule are not applicable. None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); therefore, the requirements of the General Conformity Rule are not applicable.

References

USEPA (U.S. Environmental Protection Agency). 2021a. NAAQS Table. Accessed January 2021. https://www.epa.gov/criteria-air-pollutants/naaqs-table.

USEPA (U.S. Environmental Protection Agency). 2021b. Attainment Status. Accessed March 2021. https://www3.epa.gov/airquality/greenbook/anayo_me.html.

Acronyms and Abbreviations

§	section
101 ARW	101st Air Refueling Wing
ACAM	Air Conformity Applicability Model
ANGB	Air National Guard Base
AQCR	Air Quality Control Region
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
EPA	United States Environmental Protection Agency
GCR	General Conformity Rules
IDP	Installation Development Plan
µg/m3	micrograms per cubic meter
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
O_3	ozone
Pb	lead

PM	particulate matter
ppb	parts per billion
ppm	parts per million
ROCA	Record of Conformity Analysis
SF	square foot/feet
SO_2	sulfur dioxide
U.S.C.	United States Code
VOC	volatile organic compound

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

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

a. Action Location:

Base: BANGOR ANGB
State: Maine
County(s): Penobscot
Regulatory Area(s): Millinocket AQCR 109, ME

b. Action Title: Maine ANG Base IDP

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2022

e. Action Description:

The Proposed Action include the implementation of the projects outlined in the Maine ANG Base IDP. The construction efforts include:

45,000 sf of Building Construction
60,000 sf of Grading
9,000 sf of Trenching
45,000 sf of Architectural Coatings
45,000 sf of Paving
89,000 sf of Demolition
44,000 sf Reduction in of Heating of Buildings

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B. Based on the analysis, the requirements of this rule are not applicable None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

Construction

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Millinocket AQCR 109, ME			
VOC	1.267		
NOx	4.465		
CO	5.340		
SOx	0.012	100	No
PM 10	3.235		
PM 2.5	0.190		
Pb	0.000		
NH3	0.003		
CO2e	1134.4		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

Operations

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Millinocket AQCR 109, ME			
VOC	-0.042		
NOx	-0.365		
CO	-0.287		
SOx	-0.025	100	No
PM 10	-0.044		
PM 2.5	-0.044		
Pb	0.000		
NH3	0.000		
CO2e	-312.8		

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location
Base: BANGOR ANGB
State: Maine
County(s): Penobscot
Regulatory Area(s): Millinocket AQCR 109, ME

- Action Title: Bangor ANGB IDP

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2022

- Action Purpose and Need:
Bangor ANGB IDP

- Action Description:

The Proposed Action include the implementation of the projects outlined in the Maine ANG Base IDP. The construction efforts include:

45,000 sf of Building Construction
60,000 sf of Grading
9,000 sf of Trenching
45,000 sf of Architectural Coatings
45,000 sf of Paving
89,000 sf of Demolition
44,000 sf Reduction in of Heating of Buildings

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Bangor ANGB IDP
3.	Heating	Heating of Buildings
4.	Emergency Generator	Potential Back-Up Generators
5.	Heating	Removal of Heated Space
6.	Emergency Generator	Removal of Generators

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: Penobscot
Regulatory Area(s): Millinocket AQCR 109, ME

- Activity Title: Bangor ANGB IDP

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Description:
Bangor ANG Base IDP
Construction 165,174
Demolition 90,305

- Activity Start Date
Start Month: 1
Start Month: 2022

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2022

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.267335
SO_x	0.011665
NO_x	4.464543
CO	5.339533
PM 10	3.235207

Pollutant	Total Emissions (TONs)
PM 2.5	0.190225
Pb	0.000000
NH_3	0.003408
CO_2e	1134.4

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2022

- Phase Duration
Number of Month: 12
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 89000
Height of Building to be demolished (ft): 12

- 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 Emission Factors (lb/hour) (default)

Concrete/Industrial Saws Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0410	0.0006	0.2961	0.3743	0.0148	0.0148	0.0037	58.556
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1919	0.0024	1.3611	0.7352	0.0536	0.0536	0.0173	239.51
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0383	0.0007	0.2301	0.3598	0.0095	0.0095	0.0034	66.884

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.333	000.002	000.239	003.410	000.010	000.009		000.022	00311.964
LDGT	000.387	000.003	000.404	004.497	000.013	000.011		000.024	00401.851
HDGV	000.652	000.005	001.022	013.943	000.026	000.023		000.044	00733.884
LDDV	000.140	000.003	000.136	002.311	000.004	000.004		000.008	00299.631
LDDT	000.268	000.004	000.380	003.893	000.007	000.006		000.008	00426.102
HDDV	000.557	000.013	005.449	001.849	000.165	000.152		000.029	01462.835
MC	002.066	000.003	000.828	013.435	000.028	000.025		000.055	00398.578

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

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)
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

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2022

- Phase Duration
Number of Month: 6
Number of Days: 0

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2.2.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 45000
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
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- 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 Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0806	0.0014	0.4657	0.5731	0.0217	0.0217	0.0072	132.92
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0507	0.0012	0.2785	0.3488	0.0105	0.0105	0.0045	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1919	0.0024	1.3611	0.7352	0.0536	0.0536	0.0173	239.51
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0383	0.0007	0.2301	0.3598	0.0095	0.0095	0.0034	66.884

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.333	000.002	000.239	003.410	000.010	000.009		000.022	00311.964
LDGT	000.387	000.003	000.404	004.497	000.013	000.011		000.024	00401.851

HDGV	000.652	000.005	001.022	013.943	000.026	000.023		000.044	00733.884
LDDV	000.140	000.003	000.136	002.311	000.004	000.004		000.008	00299.631
LDDT	000.268	000.004	000.380	003.893	000.007	000.006		000.008	00426.102
HDDV	000.557	000.013	005.449	001.849	000.165	000.152		000.029	01462.835
MC	002.066	000.003	000.828	013.435	000.028	000.025		000.055	00398.578

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
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
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

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

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

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2022

- Phase Duration
Number of Month: 3
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 4500
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

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0806	0.0014	0.4657	0.5731	0.0217	0.0217	0.0072	132.92
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0507	0.0012	0.2785	0.3488	0.0105	0.0105	0.0045	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1919	0.0024	1.3611	0.7352	0.0536	0.0536	0.0173	239.51
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0383	0.0007	0.2301	0.3598	0.0095	0.0095	0.0034	66.884

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.333	000.002	000.239	003.410	000.010	000.009		000.022	00311.964
LDGT	000.387	000.003	000.404	004.497	000.013	000.011		000.024	00401.851
HDGV	000.652	000.005	001.022	013.943	000.026	000.023		000.044	00733.884
LDDV	000.140	000.003	000.136	002.311	000.004	000.004		000.008	00299.631
LDDT	000.268	000.004	000.380	003.893	000.007	000.006		000.008	00426.102
HDDV	000.557	000.013	005.449	001.849	000.165	000.152		000.029	01462.835
MC	002.066	000.003	000.828	013.435	000.028	000.025		000.055	00398.578

2.3.4 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
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
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

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2022

- Phase Duration
Number of Month: 12
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 45000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

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

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0797	0.0013	0.5505	0.3821	0.0203	0.0203	0.0071	128.81
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0274	0.0006	0.1265	0.2146	0.0043	0.0043	0.0024	54.457
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0340	0.0006	0.2783	0.2694	0.0116	0.0116	0.0030	61.069
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0383	0.0007	0.2301	0.3598	0.0095	0.0095	0.0034	66.884
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0260	0.0003	0.1557	0.1772	0.0077	0.0077	0.0023	25.661

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.333	000.002	000.239	003.410	000.010	000.009		000.022	00311.964
LDGT	000.387	000.003	000.404	004.497	000.013	000.011		000.024	00401.851
HDGV	000.652	000.005	001.022	013.943	000.026	000.023		000.044	00733.884
LDDV	000.140	000.003	000.136	002.311	000.004	000.004		000.008	00299.631

LDDT	000.268	000.004	000.380	003.893	000.007	000.006		000.008	00426.102
HDDV	000.557	000.013	005.449	001.849	000.165	000.152		000.029	01462.835
MC	002.066	000.003	000.828	013.435	000.028	000.025		000.055	00398.578

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- 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

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2022

- Phase Duration
Number of Month: 3
Number of Days: 0

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 45000
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

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.333	000.002	000.239	003.410	000.010	000.009		000.022	00311.964
LDGT	000.387	000.003	000.404	004.497	000.013	000.011		000.024	00401.851
HDGV	000.652	000.005	001.022	013.943	000.026	000.023		000.044	00733.884
LDDV	000.140	000.003	000.136	002.311	000.004	000.004		000.008	00299.631
LDDT	000.268	000.004	000.380	003.893	000.007	000.006		000.008	00426.102

HDDV	000.557	000.013	005.449	001.849	000.165	000.152		000.029	01462.835
MC	002.066	000.003	000.828	013.435	000.028	000.025		000.055	00398.578

2.5.4 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

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2022

- Phase Duration
Number of Month: 3
Number of Days: 0

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 45000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes 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

2.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0806	0.0014	0.4657	0.5731	0.0217	0.0217	0.0072	132.92
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0507	0.0012	0.2785	0.3488	0.0105	0.0105	0.0045	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1919	0.0024	1.3611	0.7352	0.0536	0.0536	0.0173	239.51
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0383	0.0007	0.2301	0.3598	0.0095	0.0095	0.0034	66.884

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.333	000.002	000.239	003.410	000.010	000.009		000.022	00311.964
LDGT	000.387	000.003	000.404	004.497	000.013	000.011		000.024	00401.851
HDGV	000.652	000.005	001.022	013.943	000.026	000.023		000.044	00733.884
LDDV	000.140	000.003	000.136	002.311	000.004	000.004		000.008	00299.631
LDDT	000.268	000.004	000.380	003.893	000.007	000.006		000.008	00426.102
HDDV	000.557	000.013	005.449	001.849	000.165	000.152		000.029	01462.835
MC	002.066	000.003	000.828	013.435	000.028	000.025		000.055	00398.578

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
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)

3. Heating

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Penobscot
Regulatory Area(s): Millinocket AQCR 109, ME

- Activity Title: Heating of Buildings

- Activity Description:
Heating of Buildings - Net Chang in Area

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.009496
SO_x	0.001036
NO_x	0.172648
CO	0.145024
PM 10	0.013121

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.013121
Pb	0.000000
NH_3	0.000000
CO_2e	207.9

3.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 44000
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0824

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

3.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

3.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year

FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

County: Penobscot
Regulatory Area(s): Millinocket AQCR 109, ME

- Activity Title: Potential Back-Up Generators

- Activity Description:

Potential Back-Up Generators

- Activity Start Date

Start Month: 1
Start Year: 2023

- Activity End Date

Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.028249
SO_x	0.023794
NO_x	0.116438
CO	0.077760
PM 10	0.025414

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.025414
Pb	0.000000
NH_3	0.000000
CO_2e	13.5

4.2 Emergency Generator Assumptions

- Emergency Generator

Type of Fuel used in Emergency Generator: Diesel

Number of Emergency Generators: 5

- Default Settings Used: Yes

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135 (default)
Average Operating Hours Per Year (hours): 30 (default)

4.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

4.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

5. Heating

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County: Penobscot
Regulatory Area(s): Millinocket AQCR 109, ME

- Activity Title: Removal of Heated Space

- Activity Description:
89,000 sqft removed

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	-0.023170
SO_x	-0.002528

Pollutant	Emissions Per Year (TONs)
PM 2.5	-0.032016
Pb	0.000000

NO_x	-0.421267
CO	-0.353864
PM 10	-0.032016

NH_3	0.000000
CO_2e	-507.2

5.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 89000
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0994

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

5.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

5.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
$FC_{HER} = HA * EI / HV / 1000000$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year
$HE_{POL} = FC * EF_{POL} / 2000$

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

6. Emergency Generator

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

County: Penobscot
Regulatory Area(s): Millinocket AQCR 109, ME

- Activity Title: Removal of Generators

- Activity Description:
Removal of 10 generaotrs

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	-0.056498
SO_x	-0.047588
NO_x	-0.232875
CO	-0.155520
PM 10	-0.050828

Pollutant	Emissions Per Year (TONs)
PM 2.5	-0.050828
Pb	0.000000
NH_3	0.000000
CO_2e	-26.9

6.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 10

- Default Settings Used: Yes

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135 (default)
Average Operating Hours Per Year (hours): 30 (default)

6.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

6.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

Appendix D

Plant Species Observed During the Bangor ANGB 2020 Flora Survey

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Table D. Plant Species Observed During the Bangor ANGB 2020 Flora Survey

Common Name	Scientific Name	Cover Type(s) Observed	Origin
Allegheny blackberry	*Rubus allegheniensis*	All	Native
Alternate-leaf dogwood	*Cornus alternifolia*	Forest	Native
American basswood	*Tilia americana*	Forest	Native
American beech	*Fagus grandifolia*	Forest	Native
American elderberry	*Sambucus nigra*	Forest, Wetland	Native
American elm	*Ulmus americana*	Forest, Landscaped, Wetland	Native
American water plantain	*Alisma subcordatum*	Wetland	Native
American waterhorehound	*Lycopus americanus*	Wetland	Native
Annual bluegrass	*Poa annua*	Landscaped	Introduced
Arrowleaf tearthumb	*Polygonum sagittatum*	Wetland	Native
Asiatic bittersweet	*Celastrus orbiculatus*	Forest, Landscaped	Introduced
Awlfruit sedge	*Carex stipata*	Wetland	Native
Balsam fir	*Abies balsamea*	Forest, Landscaped, Wetland	Native
Balsam poplar	*Populus balsamifera*	Forest, Wetland	Native
Beaked hazelnut	*Corylus cornuta*	Forest	Native
Bebb's willow	*Salix bebbiana*	Wetland	Native
Bedstraw	*Gallium sp*	Landscaped	Both
Bentgrass	*Agrostis sp*	Landscaped	Both
Bermudagrass	*Cynodon dactylon*	Landscaped	Introduced
Bigtooth aspen	*Populus grandidentata*	Forest	Native
Bird vetch	*Vicia cracca*	All	Introduced
Birdfoot trefoil	*Lotus corniculatus*	Landscaped, Roadside	Introduced
Bittercress	*Cardamine sp*	Wetland	Both
Black ash	*Fraxinus nigra*	Forest, Wetland	Native
Black birch	*Betula lenta*	Forest	Native
Black cherry	*Prunus serotina*	Forest	Native
Black locust	*Robinia pseudoacacia*	Forest	Introduced
Black medic	*Medicago lupulina*	Landscaped	Introduced
Black-eyed coneflower	*Rudbeckia hirta*	Landscaped	Native
Blunt spike-rush	*Eleocharis obtusa*	Wetland	Native
Brackenfern	*Pteridium aquilinum*	Forest	Native
Bristly buttercup	*Ranunculus hispidus*	Landscaped, Wetland	Native

Table D (continued)			
Common Name	**Scientific Name**	**Cover Type(s) Observed**	**Origin**
Bristly dewberry	*Rubus hispidus*	All	Native
Broadleaf helleborine	*Epipactis helleborine*	Forest	Introduced
Broad-leaved cattail	*Typha latifolia*	Wetland	Native
Brome	*Bromus sp*	Landscaped	Both
Bull thistle	*Cirsium vulgare*	Landscaped	Introduced
Canada bluegrass	*Poa compressa*	Landscaped	Introduced
Canada goldenrod	*Solidago canadensis*	Forest, Landscaped	Native
Canada lettuce	*Lactuca canadensis*	Landscaped	Introduced
Canada mayflower	*Maianthemum canadense*	Forest	Native
Canada thistle	*Cirsium arvense*	Landscaped	Introduced
Carex	*Carex sp*	Forest	Both
Chokecherry	*Prunus virginiana*	Forest	Native
Christmas fern	*Polystichum acrostichoides*	Forest Edge	Native
Cinnamon fern	*Osmunda cinnamomea*	Forest, Wetland	Native
Climbing nightshade	*Solanum dulcamara*	All	Introduced
Coltsfoot	*Tussilago farfara*	Forest, Landscaped	Introduced
Common barberry	*Berberis vulgaris*	Forest	Introduced
Common boneset	*Eupatorium perfoliatum*	Landscaped, Wetland	Native
Common buckthorn	*Rhamnus cathartica*	Forest, Wetland	Introduced
Common cinquefoil	*Potentilla simplex*	Landscaped	Native
Common crabgrass	*Digitaria sanguinalis*	Landscaped	Introduced
Common dandelion	*Taraxacum officinale*	Landscaped	Both
Common duckweed	*Lemna minor*	Wetland	Native
Common evening-primrose	*Oenothera biennis*	Landscaped	Native
Common milkweed	*Asclepias syriaca*	Landscaped	Native
Common mugwort	*Artemisia vulgaris*	Landscaped	Introduced
Common mullein	*Verbascum thapsus*	Landscaped	Both
Common plantain	*Plantago major*	Landscaped	Introduced
Common ragweed	*Ambrosia artemisiifolia*	Landscaped	Native
Common reed	*Phragmites australis*	Wetland	Introduced
Common selfheal	*Prunella vulgaris*	Landscaped	Native
Common sheep sorrel	*Rumex acetosella*	Landscaped	Introduced

Table D (continued)

Common Name	Scientific Name	Cover Type(s) Observed	Origin
Common velvetgrass	*Holcus lanatus*	Landscaped	Introduced
Common winterberry	*Ilex verticillata*	Wetland	Native
Common yarrow	*Achillea millefolium*	Landscaped	Both
Crested woodfern	*Dryopteris cristata*	Wetland	Native
Crownvetch	*Securigera varia*	All	Introduced
Curly dock	*Rumex crispus*	Landscaped	Native
Devil's beggarticks	*Bidens frondosa*	Forest, Landscaped, Wetland	Native
Ditch stonecrop	*Penthorum sedoides*	Wetland	Introduced
Dovefoot geranium	*Geranium molle*	Landscaped	Introduced
Eastern cottonwood	*Populus deltoides*	Landscaped	Native
Eastern hayscented fern	*Dennstaedtia punctilobula*	Wetland	Native
Eastern hemlock	*Tsuga canadensis*	Forest	Introduced
Eastern marsh fern	*Thelypteris ovata*	Wetland	Native
Eastern poison ivy	*Toxicodendron radicans*	Forest, Landscaped, Wetland	Native
Eastern teaberry	*Gaultheria procumbens*	Forest	Native
Eastern white pine	*Pinus strobus*	Forest	Native
False baby's breath	*Gallium mollugo*	Landscaped	Introduced
False Solomon's-seal	*Maianthemum racemosum*	Forest	Native
False violet	*Rubus dalibarda*	Forest	Native
Fescue	*Festuca sp*	Landscaped	Introduced
Field horsetail	*Equisetum arvense*	Landscaped, Wetland	Native
Fowl bluegrass	*Poa palustris*	Wetland	Native
Fowl manna-grass	*Glyceria striata*	Wetland	Native
Fringed sedge	*Carex crinita*	Wetland	Native
Garden valerian	*Valeriana officinalis*	Forest	Introduced
Glossy buckthorn	*Frangula alnus*	Forest	Introduced
Gray alder	*Alnus incana*	Forest, Wetland	Native
Gray birch	*Betula populifolia*	Forest, Landscaped, Wetland	Native
Great burdock	*Arctium minus*	Landscaped	Introduced
Greater bladder sedge	*Carex intumescens*	Wetland	Native
Green ash	*Fraxinus pennsylvanica*	Forest	Native
Groundcedar	*Lycopodium complanatum*	Forest	Native
Henbit	*Lamium amplexicaule*	Landscaped	Introduced

Table D (continued)

Common Name	Scientific Name	Cover Type(s) Observed	Origin
Hophornbeam	*Ostrya virginiana*	Forest	Native
Interrupted fern	*Osmunda claytoniana*	Forest	Native
Jack-in-the-pulpit	*Arisaema triphyllum*	Forest	Native
Japanese knotweed	*Polygonum cuspidatum*	Forest, Landscaped	Introduced
Japanese rose	*Rosa rugosa*	Landscaped	Introduced
Lady fern	*Athyrium filix-femina*	Wetland	Native
Large barnyard grass	*Echinochloa crus-galli*	Landscaped	Introduced
Mapleleaf viburnum	*Viburnum acerifolium*	Forest	Native
Microcarpus	*Scirpus microcarpus*	Wetland	Native
Morrow's honeysuckle	*Lonicera morrowii*	Forest	Introduced
Multiflora rose	*Rosa multiflora*	Landscaped	Introduced
Narrowleaf plantain	*Plantago lanceolata*	Landscaped	Introduced
New England aster	*Symphyotrichum novae-angliae*	Landscaped, Wetland	Introduced
New York fern	*Parathelypteris noveboracensis*	Forest, Wetland	Native
Northern bugleweed	*Lycopus uniflorus*	Wetland	Native
Northern red oak	*Quercus rubra*	Forest, Landscaped	Native
Northern white cedar	*Thuja occidentalis*	Forest, Landscaped	Native
Orange hawkweed	*Hieracium aurantiacum*	Landscaped	Introduced
Orchard grass	*Dactylis glomerata*	Landscaped	Introduced
Oxeye daisy	*Leucanthemum vulgare*	Landscaped	Introduced
Panicgrass	*Dicanthelium sp.*	Landscaped	Introduced
Paper birch	*Betula papyrifera*	Forest	Native
Partridgeberry	*Mitchella repens*	Forest	Native
Pepperweed	*Lepidium sp*	Landscaped	Both
Pink lady's-slipper	*Cypripidium acaule*	Forest	Native
Pinkweed	*Polygonum pensylvanicum*	Wetland	Native
Plumleaf crabapple	*Malus prunifolia*	Landscaped	Introduced
Possumhaw	*Viburnum nudum*	Forest, Wetland	Native
Poverty rush	*Juncus tenuis*	Landscaped	Native
Purple loosestrife	*Lythrum salicaria*	Wetland	Introduced
Purpleleaf willowherb	*Epilobium coloratum*	Wetland	Native
Pussy willow	*Salix discolor*	Wetland	Native
Quaking aspen	*Populus tremuloides*	Forest	Native

Table D (continued)

Common Name	Scientific Name	Cover Type(s) Observed	Origin
Queen Anne's lace	*Daucus glomerata*	Landscaped	Introduced
Rabbit-foot clover	*Trifolium arvense*	Landscaped	Introduced
Red baneberry	*Acaea rubra*	Forest	Native
Red clover	*Trifolium pratens*	Landscaped	Introduced
Red maple	*Acer rubrum*	All	Native
Red-osier dogwood	*Cornus sericea*	Wetland	Native
Reed canarygrass	*Phalaris arundinacea*	Landscaped, Wetland	Introduced
Rice cutgrass	*Leersia oryzoides*	Forest, Wetland	Native
River willow	*Salix eriocephala*	Wetland	Native
Royal fern	*Osmunda regalis var. spectabilis*	Wetland	Native
Sallow sedge	*Carex lurida*	Wetland	Native
Sensitive fern	*Onoclea sensibilis*	Forest, Wetland	Native
Siberian elm	*Ulmus pumila*	Landscaped	Both
Sikly dogwood	*Cornus amomum*	Wetland	Native
Slender wheatgrass	*Elymus trachycaulus*	Landscaped	Native
Smoothish hawkweed	*Hieracium hawkweed*	Forest	Native
Soft rush	*Juncus effusus*	Wetland	Native
Southern arrow-wood	*Viburnum dentatum*	Forest, Wetland	Native
Spaghnum moss	*Spaghnum sp.*	Forest	Native
Speckled alder	*Almus incana* ssp. *rugosa*	Wetland	Native
Spotted sandmat	*Chamaesyce maculata*	Landscaped	Native
Spotted spurge	*Euphorbia maculata*	Landscaped	Native
Spotted touch-me-not	*Impatiens capensis*	Forest	Native
St John's wort	*Hypericum perforatum*	Landscaped, Wetland	Introduced
Staghorn sumac	*Rhus typhina*	Forest	Native
Stalked bulrush	*Scirpus pedicellatus*	Wetland	Native
Stalked waterhorehound	*Lycopus rubellus*	Wetland	Native
Starflower	*Trientalis borealis*	Forest	Native
Sticky cockle	*Silene noctiflora*	Landscaped	Introduced
Stinging nettle	*Urtica dioica*	Forest, Landscaped	Both
Striped maple	*Acer pensylvanicum*	Forest	Native
Sugar maple	*Acer saccharum*	Forest	Native
Sulfur cinquefoil	*Potentilla recta*	Landscaped	Introduced

Table D (continued)

Common Name	Scientific Name	Cover Type(s) Observed	Origin
Swamp seedbox	*Ludwigia palustris*	Landscaped, Wetland	Native
Swamp smartweed	*Polygonum hydropiperoides*	Wetland	Native
Sweet fern	*Comptonia peregrina*	Forest	Native
Sweet vernalgrass	*Anthoxanthum odoratum*	Landscaped	Introduced
Sweet-scented bedstraw	*Gallium triflorum*	Landscaped	Native
Timothy grass	*Phleum pratense*	Landscaped	Introduced
Toad flax	*Linaria vulgaris*	Landscaped	Introduced
Tree groundpine	*Lycopodium dendroideum*	Forest	Native
Violet	*Viola sp*	Forest	Native
Virginia creeper	*Parthenocissus quinquefolia*	Forest	Native
Weeping willow	*Salix x pendulina*	Wetland	Introduced
White ash	*Fraxinus americana*	Forest	Native
White clover	*Trifolium repens*	Landscaped	Introduced
White meadowseet	*Spiraea alba var. latifolia*	Forest, Wetland	Native
White rattlesnakeroot	*Prenanthes alba*	Forest	Native
White spruce	*Picea glauca*	Forest	Native
White sweet clover	*Melilotus officinalis*	Landscaped	Introduced
Wild sarsaparilla	*Aralia nudicaulis*	Forest	Native
Witch-hazel	*Hamamelis virginiana*	Forest	Native
Wood sorrel	*Oxalis sp*	Forest, Landscaped	Both
Woodland strawberry	*Fragaria vesca*	Landscaped	Native
Wool-grass	*Scirpus cyperinus*	Wetland	Native
Wrinkled goldenrod	*Solidago rugosa*	All	Native
Yellow birch	*Betula alleghaniensis*	Forest	Native
Yellow blue-bead lily	*Clintonia borealis*	Forest	Native
Yellow sedge	*Carex flava*	Wetland	Native

Source: AGEISS and HDR 2022.

Appendix E

Wildlife Species Observed During the Bangor ANGB 2020 Fauna Survey

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Table E. Wildlife Species Observed During the Bangor ANGB 2020 Fauna Survey

Common Name	Scientific Name	Habitat Observed
Amphibians		
Bullfrog	*Lithobates catesbeianus*	Wetland
Gray treefrog	*Hyla versicolor*	Wetland
Green frog	*Lithobates clamitans*	Wetland
Northern leopard frog	*Lithobates pipiens*	Wetland
Wood frog	*Lithobates sylvaticus*	Wetland
Birds		
Alder flycatcher	*Empidonax alnorum*	Developed/Maintained
American crow	*Corvus brachyrhynchos*	Developed/Maintained, Forest, Forest Edge
American goldfinch	*Spinus tristis*	Developed/Maintained, Disturbed, Forest, Forest Edge
American kestrel	*Falco sparverius*	Installation[a]
American redstart	*Setophaga ruticilla*	Developed/Maintained
American robin	*Turdus migratorius*	Developed/Maintained, Forest
Black-capped chickadee	*Poecile atricapillus*	Developed/Maintained, Disturbed, Forest, Forest Edge
Black-throated green warbler	*Setophaga virens*	Forest Edge
Blue jay	*Cyanocitta cristata*	Developed/Maintained, Forest, Forest Edge
Brown creeper	*Certhia americana*	Forest
Cedar waxwing	*Bombycilla cedrorum*	Developed/Maintained, Forest, Forest Edge
Chestnut-sided warbler	*Setophaga pensylvanica*	Developed/Maintained
Chipping sparrow	*Spizella passerina*	Developed/Maintained
Common raven	*Corvus corax*	Developed/Maintained
Common yellowthroat	*Geothlypis trichas*	Forest Edge
Dark-eyed junco	*Junco hyemalis*	Forest
Downy woodpecker	*Dryobates pubescens*	Forest Edge
Eastern kingbird	*Tyrannus tyrannus*	Forest Edge
Eastern phoebe	*Sayornis phoebe*	Developed/Maintained, Forest Edge
Eastern wood pewee	*Contopus virens*	Developed/Maintained
Fish crow	*Corvus ossifragus*	Developed/Maintained
Hermit thrush	*Catharus guttatus*	Forest Edge
House finch	*Haemorhous mexicanus*	Developed/Maintained, Forest Edge
House sparrow	*Passer domesticus*	Developed/Maintained
Killdeer	*Charadrius vociferus*	Developed/Maintained

Table E (continued)		
Common Name	**Scientific Name**	**Habitat Observed**
Birds (continued)		
Least flycatcher	*Empidonax minimus*	Developed/Maintained
Lincoln's sparrow	*Melospiza lincolnii*	Installation[a]
Mourning dove	*Zenaida macroura*	Developed/Maintained
Northern cardinal	*Cardinalis cardinalis*	Developed/Maintained, Forest Edge
Northern flicker	*Colaptes auratus*	Developed/Maintained
Northern mockingbird	*Mimus polyglottos*	Developed/Maintained
Red-breasted nuthatch	*Sitta canadensis*	Developed/Maintained, Forest, Forest Edge
Red-eyed vireo	*Vireo olivaceus*	Developed/Maintained, Forest
Red-tailed hawk	*Buteo jamaicensis*	Installation[a]
Ruffed grouse	*Bonasa umbellus*	Installation[a]
Savannah sparrow	*Passerculus sandwichensis*	Developed/Maintained
Solitary sandpiper	*Tringa solitaria*	Developed/Maintained
Song sparrow	*Melospiza melodia*	Developed/Maintained, Forest Edge
Turkey vulture	*Cathartes aura*	Developed/Maintained
Veery	*Catharus fuscescens*	Forest
White-breasted nuthatch	*Sitta carolinensis*	Forest Edge
White-crowned sparrow	*Zonotrichia leucophrys*	Developed/Maintained
Wild turkey	*Meleagris gallopavo*	Developed/Maintained
Wilson's snipe	*Gallinago delicata*	Developed/Maintained
Wood thrush	*Hylocichla mustelina*	Forest
Yellow warbler	*Setophaga petechia*	Developed/Maintained
Yellow-rumped warbler	*Setophaga coronata*	Developed/Maintained
Insects		
Hickory tussock moth caterpillar	*Lophocampa caryae*	Installation[a]
White admiral	*Limenitis arthemis*	Installation[a]
Mammals		
Big brown bat	*Eptesicus fuscus*	Forest Edge[b]
Coyote	*Canis latrans*	Installation[a]
Deer mouse	*Peromyscus maniculatus*	Developed, Wetland
Eastern chipmunk	*Tamias striatus*	Installation[a]

Eastern red bat	*Lasiurus borealis*	Forest Edge[b]
Hoary bat	*Lasiurus cinereus*	Forest Edge[b]
Little brown bat	*Myotis lucifugus*	Forest Edge[b]
Meadow jumping mouse	*Zapus hudsonius*	Wetland
Meadow vole	*Microtus pennsylvanicus*	Developed, Wetland
Northern short-tailed shrew	*Blarina brevicauda*	Developed
Red squirrel	*Tamiasciurus hudsonicus*	Installation[a]
Red-backed vole	*Myodes gapperi*	Wetland
Silver-haired bat	*Lasionycteris noctivagans*	Forest Edge[b]
Tri-colored bat	*Perimyotis subflavus*	Forest Edge[b]
White-footed mouse	*Peromyscus leucopus*	Developed, Forest, Wetland

Source: AGEISS and HDR 2022
Notes:
a. Species seen while traversing the installation.
b. Acoustic detection.

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