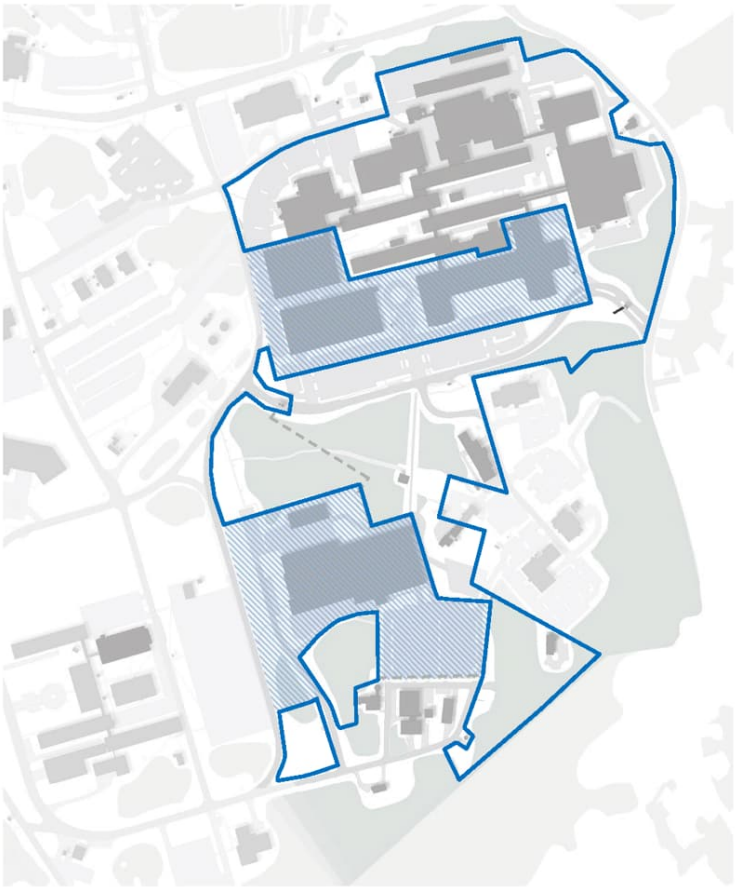
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
LINCOLN LABORATORY

MASTER LEASE AND BUILDING CONVEYANCE
at
HANSCOM AFB



DRAFT
ENVIRONMENTAL ASSESSMENT

MIT Lincoln Laboratory

Massachusetts Institute of Technology

66th AIR BASE WING

November 2023

ENVIRONMENTAL ASSESSMENT
MIT LINCOLN LABORATORY
Master Lease and Building Conveyance at Hanscom AFB

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ACRONYMS AND ABBREVIATIONS

ABG	Air Base Group
ACAM	Air Conformity Applicability Model
ACM	asbestos-containing material
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AFCRL	Air Force Cambridge Research Laboratories
AFMAN	Air Force Manual
AFMC	Air Force Materiel Command
AFRL	Air Force Research Laboratory
AICUZ	Air Installations Compatible Use Zones
ALTA	American Land Title Association
APIMS	Air Program Information Management System
AST	Aboveground Storage Tank
BSA	Base Support Agreement
C&D	Construction and Demolition
CAA	Clean Air Act
CE	Civil Engineering/Environmental
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CH_4	Methane
CHP	Central Heat Plant
CMR	Code of Massachusetts Regulations
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide equivalents
CSL-MIF	Compound Semiconductor Laboratory/Microelectronics Integration Facility
CWP	Chilled Water Plant
CZN	NEPA Division
DAF	Department of the Air Force
dB	Decibel

DNL	Day-Night Average Sound Level
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Assessment
EHS	Environmental Health & Safety
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement (federal)
EISA	Energy Independence and Security Act
EMCS	Energy Management Control System
EO	Executive Order
EPF	Engineering and Prototyping Facility
ERP	Environmental Restoration Program
FAR	Federal Acquisition Regulation
FFRDC	Federally Funded Research and Development Center
FIRM	Flood Insurance Rate Map
FMP	Facility Modernization Plan
FONSI	Finding of No Significant Impact
FY	Fiscal Year
GCR	General Conformity Regulations
GHG	Greenhouse Gas
HAFB	Hanscom Air Force Base
HARM	Hazard Assessment Rating Methodology
HSG	Hydrologic Soil Group
IDP	Installation Development Plan
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
IRP	Installation Restoration Program
JAC	Joint Advisory Committee
kW	Kilowatt
kWh	Kilowatt hour
kV	Kilovolt
MassDEP	Massachusetts Department of Environmental Protection
MassGIS	Massachusetts Bureau of Geographic Information
Massport	Massachusetts Port Authority

MBTA	Massachusetts Bay Transportation Authority
MHC	Massachusetts Historical Commission
MILCON	Military Construction
MIT	Massachusetts Institute of Technology
MIT LL	Massachusetts Institute of Technology Lincoln Laboratory
MSL	mean sea level
MWRA	Massachusetts Water Resources Authority
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act
NHESP	Natural Heritage & Endangered Species Program
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
O_3	Ozone
OSHA	Occupational Safety and Health Administration
PAL	Public Archaeology Laboratory
Pb	Lead
PCBs	Polychlorinated Biphenyls
PM	Particulate Matter
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
R&D	Research & Development
RCRA	Resource Conservation and Recovery Act
SAF/IE	Deputy Assistant Secretary of the Air Force for Environment, Safety, and Infrastructure
SAGE	Semi-Automatic Ground Environment Air Defense System
SAP	Satellite Accumulation Point
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheets

sf	square foot (feet)
SIP	State Implementation Plan
SLUCM	Standard Land Use Coding Manual
SO_2	Sulfur Dioxide
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TPY	Tons Per Year
TRI	Toxic Release Inventory
TSCA	Toxic Substances Control Act
UFC	Unified Facilities Criteria
USEPA	United States Environmental Protection Agency
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

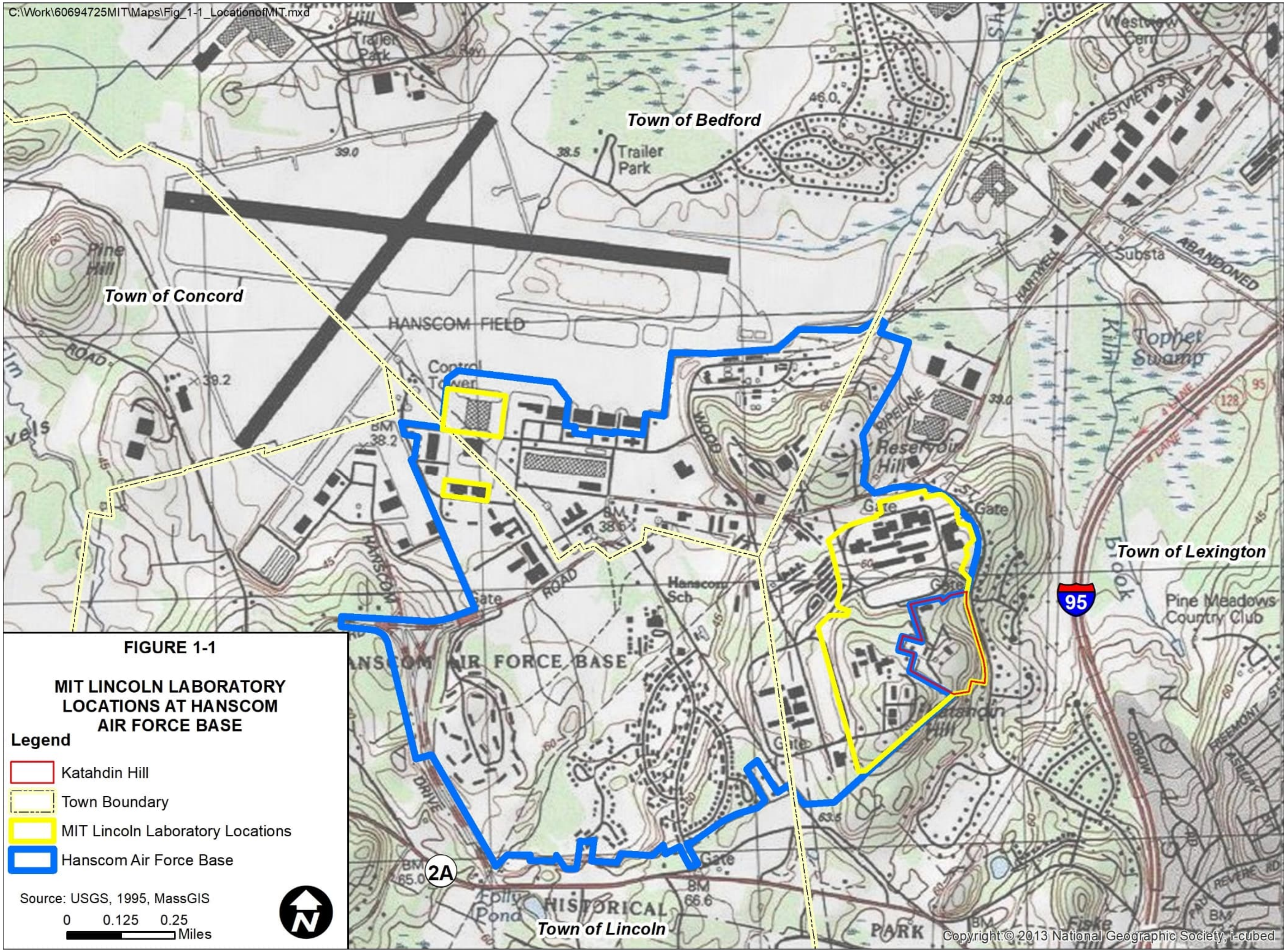
The Massachusetts Institute of Technology (MIT) is a Massachusetts non-profit educational corporation. MIT Lincoln Laboratory (MIT LL), which is a part of MIT, is a Federally Funded Research and Development Center (FFRDC) operated and managed by MIT for the U.S. Department of Defense (DoD). MIT operates MIT LL under a prime contract sponsored by the DoD, Office of the Under Secretary of Defense for Research and Engineering. DoD Instruction (DoDI) 5000.77, Federal Acquisition Regulation (FAR) 35.017 and the prime contract outline the long-term special relationship between the parties. The Office of the Under Secretary of Defense (Research and Engineering) is the primary sponsor with responsibility for overall oversight of MIT LL. The DoD Deputy Chief Technology Officer is the Executive Agent and serves as the Chair of the Joint Advisory Committee (JAC), which provides overall policy and program guidance to the management of MIT LL.

MIT LL's mission is to apply advanced technology to problems of national security that involve research and development activities, with a focus on long-term technology development. Research at MIT LL is aligned within key mission areas that have a specific focus; however, the mission-oriented work supports cross-divisional, multidisciplinary collaborations. The research includes projects in air and missile defense, space surveillance technology, tactical systems, biological-chemical defense, homeland protection, and communications, cyber, and information technology. The areas that constitute the core of the work performed at MIT LL are sensors, information extraction (signal processing and embedded computing), communications, and integrated sensing and decision support, all supported by a broad research base in advanced electronics. MIT LL takes projects from the initial concept stage, through simulation and analysis, to design and rapid prototyping, and finally to field demonstration.

The majority of MIT LL facilities are on federal property, occupying approximately 80 acres in Lexington, Massachusetts on the eastern perimeter of Hanscom Air Force Base (HAFB) in Massachusetts (Figure 1-1). An additional 20 of the acres utilized are MIT property in Lexington, commonly referred to as the "Katahdin Hill" area, contiguous with HAFB. MIT LL also utilizes a hangar and three buildings on the western side of HAFB in Bedford and Lincoln, Massachusetts, proximate to the aprons associated with the runways. MIT LL has historically operated on HAFB and while there are several operational and security reasons that argue for the continuation, the law is clear that MIT LL's moving off base is not legally permissible as any such move would require new construction. In the 2023 Consolidated Appropriations Act, Public Law 117-328, the recurring provision is Section 8026(c), which states in part:

> Notwithstanding any other provision of law, none of the funds available to the department from any source during the current fiscal year may be used by a defense FFRDC, through a fee or other payment mechanism, for construction of new buildings not located on a military installation ….

MIT LL's use of the existing Department of the Air Force (DAF) owned facilities is currently governed by the HAFB Base Support Agreement (BSA) incorporated into MIT's FFRDC Prime Contract with the Air Force Life Cycle Management Center. This prime contract is the vehicle that controls MIT LL's DoD FFRDC efforts, and responsibility for the operations and maintenance of the MIT LL facilities is set out in the BSA.


C:\Work\60694725MIT\Maps\Fig_1-1_LocationofMIT.mxd
Town of Bedford
Town of Concord
Town of Lexington
Town of Lincoln
HANSCOM FIELD
HANSCOM AIR FORCE BASE
Trailer Park
Control Tower
Pine Hill
Reservoir Hill
Tophet Swamp
Pine Meadows Country Club
Folly Pond
HISTORICAL
PARK
Hanscom Sch
Gate
Substa
ABANDONED
HARTWELL
WESTVIEW ST
PIPELINE
WOOD
ROAD
HANSCOM
DRIVE
95
128
2A
FIGURE 1-1
MIT LINCOLN LABORATORY LOCATIONS AT HANSCOM AIR FORCE BASE
Legend
Katahdin Hill
Town Boundary
MIT Lincoln Laboratory Locations
Hanscom Air Force Base
Source: USGS, 1995, MassGIS
0 0.125 0.25 Miles
N
Copyright: © 2013 National Geographic Society, i-cubed

The Air Force-owned buildings constructed in the 1950s and 1960s are in poor condition as identified in multiple independent studies. In June 2021, Jacobs Engineering performed a detailed review of the MIT LL facilities and concluded: "Facilities and systems across Lincoln Laboratory are in a state of frailty, endangering critical research, impacting the output of current programs … " (MIT LL, 2021)

These facilities do not meet current building mechanical and electrical system codes or industry standards for high-technology facilities, are obsolete for modern research needs, and are either nearing or are beyond the end of their useful lives. The dilapidated state of the current facilities and inadequate utility capacities have resulted in numerous and costly disruptions of mission-critical research. Current and future research is limited by building design constraints such as inability to isolate building vibration, inability to maintain higher levels of cleanroom cleanliness, inadequate laboratory space, and inadequate power and cooling for modern research needs. The facilities are overcrowded with insufficient space to meet mission demand and multiple programs sharing space in areas intended to hold a single program. None of the existing buildings meet modern energy conservation codes and the existing buildings have no means to meet federal and state goals for reduction of greenhouse gasses.

BSAs are typically used to document unilateral government decisions to provide incidental governmental support to a contractor and short-term use of government property such as office space, computers, phones, or other miscellaneous items. Under the BSA and the imposition of the Air Force Instructions (AFIs), MIT LL is unable to perform certain work (e.g., minor construction). This leaves the Laboratory unable to resolve conditions long recognized to threaten the long-term viability of MIT LL, including deteriorated facilities, obsolete design, operational safety risks, inadequate utility capacity, and insufficient laboratory and secured space to meet mission demand. Recently, the Sage Analysis Group concluded a study that was presented and approved by the JAC in June of 2023, which stated in part: "AFI rules delay, limit and hurt efficiency for critical DoD research."

In 2014, in its Comprehensive Review of MIT LL, the DoD indicated that Facilities Modernization needed to be a priority and a Facilities Modernization Plan (FMP) was developed. This emphasis on facilities was reiterated in the DoD 2019 Comprehensive Review. Per the action from the DoD JAC meeting of 16 August 2022, in order to execute the FMP, DAF proposed to enter into a lease agreement (Master Lease) with MIT to facilitate current FFRDC operations and establish the conditions needed for long-term modernization of the MIT LL facility complex. The lease approach was approved at the DoD JAC meeting on 29 June 2023, as well as FMP version 7.1.

The authority for the Master Lease is 10 United States Code (USC), Section 2669, *Transfer of Land and Facilities to Support Contracts with Federally Funded Research and Development Centers*, established in the Fiscal Year (FY) 2023 National Defense Authorization Act (NDAA). Section 2669 provides the authority for the Secretary of a military department to enter into a long-term lease, for no consideration, with a FFRDC to further the purposes of the FFRDC contract. Additionally, it provides for the conveyance, at no cost, of facilities and improvements on the leased land in furtherance of the FFRDC contract.

The Sage Analysis Group study approved in June 2023 concluded: "Adopting the FMP will enable additional, improved, and more efficient R&D (Research and Development) for sponsors." Further delays would increase risks to MIT LL's critical work. (MIT LL, 2023a)

The proposed Master Lease footprint was developed by Vanasse Hangen Brustlin, considering current DoD FFRDC operations, HAFB operations, and the JAC-approved MIT LL FMP requirements. The FMP is a sequence of long-term activities to enable the FFRDC to continue to operate at capacity throughout the modernization effort, which is expected to take approximately 40 years to execute.

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to address a long-standing need, identified originally back in 2007 in meetings with the then Air Force Real Property Agency, and then formally in the DoD 2014 Comprehensive Review of MIT LL, to provide a methodology to allow MIT to expeditiously address critical facility modernization needs. The purpose would be to establish the conditions MIT LL needs to make facility modifications to support future actions associated with building upgrades in order to meet DoD project and schedule requirements.

Long-term operation and maintenance of a significant amount of government land and buildings requires a bilateral agreement to document real property interests as well as the numerous terms and conditions related to the facilities such as duration, repair, maintenance, modernization, access, easements, boundaries, related infrastructure, utilities, risk of loss, insurance, damage, indemnification, termination, etc. A formal lease would implement 10 USC 2669 and would provide much needed clarity by specifically documenting the legal rights and responsibilities of each party. A lease coupled with a conveyance of the buildings on the lease footprint would clarify the respective legal rights and obligations of the DAF and MIT, establish the conditions needed for long-term modernization of the MIT LL facility complex, and normalize the complex as an integrated research and development entity, thereby allowing MIT LL to improve the research and development specified by MIT's FFRDC Contract.

Action is needed because most of the buildings used by MIT LL have high risk of causing business disruptions due to potential facility systems failures. AFIs and related manuals and regulations have been interpreted to limit and restrict MIT LL from adequately addressing deteriorated facilities, obsolete design, operational safety risks, and inadequate utility capacity to meet FFRDC contract demand.

This Proposed Action is only for the leasing of land and conveyance of buildings. The Proposed Action would establish the conditions MIT LL needs to make critical and necessary improvements in the future, and then relocate some functions that have become highly compressed or fragmented. This would allow MIT LL to vacate and then MIT to demolish some existing buildings in order to build new replacement purpose-built facilities. As these actions are not yet proposed and regardless would not occur in the next 5 years, they would be evaluated separately in accordance with the Air Force *Environmental Impact Analysis Process (EIAP)*, 32 Code of Federal Regulations (CFR) Part 989, as projects are proposed. MIT LL would be required to comply with the environmental/conservation laws and regulations that are described in Air Force Manual (AFMAN) 32-7002, *Environmental Compliance and Pollution Prevention*, and AFMAN 32-7003, *Environmental Conservation*, such as the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA), and the Clean Air Act (CAA). Under the lease, DAF will continue to be the lead agency for this proposed and all future NEPA actions.

1.3 APPLICABLE FEDERAL LAWS AND REGULATIONS

This Environmental Assessment (EA) addresses the Proposed Action and the No Action alternative in accordance with NEPA (42 USC 4321-4347), Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500 – 1508), and 32 CFR Part 989. While MIT LL is a FFRDC, it is not a federal agency per NEPA implementing regulations (40 CFR Section 1508.1(k))[1]. Thus, for the purposes of NEPA analysis and review, DAF is the lead agency for the Proposed Action.

The EA is a written analysis that serves to:

- provide analysis sufficient to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI); and
- aid federal agencies in complying with NEPA when no EIS is required.

If this EA were to determine the Proposed Action would have the potential to significantly degrade the environment, have the potential to significantly threaten public health or safety, or generate substantial environmental controversy concerning the significance or nature of the environmental impact, then an EIS would normally be completed. An EIS involves a comprehensive assessment of project impacts and alternatives and a high degree of public input. Alternatively, if this EA results in a FONSI, then the action would not be the subject of an EIS. The level and extent of detail and analysis in the EA is commensurate with the importance of the environmental issues involved and with the information needs of both the decision-makers and the general public.

In addition, this EA evaluates the compliance of the Proposed Action with potential requirements of the following federal environmental laws and regulations:

- CAA
- Clean Water Act
- Pollution Prevention Act
- NHPA
- Archaeological Resources Protection Act
- Endangered Species Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act (TSCA)
- Occupational Safety and Health Administration (OSHA) regulations
- Executive Order (EO) 11988, *Floodplain Management*
- EO 11990, *Protection of Wetlands*
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks

[1] An FFRDC is sponsored by a government agency but is not itself a government agency. MIT LL is part of MIT, not a federal agency.

- EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis
- EO 14057, Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability
- EO 14008, Tackling the Climate Crisis at Home and Abroad
- Section 438 of the Energy Independence and Security Act (EISA)
- AFI 32-1001, Civil Engineer Operations
- AFI 32-1015, Integrated Installation Planning
- AFI 32-7001, Environmental Management
- AFI 32-7020, Environmental Restoration Program
- AFMAN 32-7002, Environmental Compliance and Pollution Prevention
- AFMAN 32-7003, Environmental Conservation
- AFMAN 32-1067, Water and Fuel Systems

1.4 REQUIRED FEDERAL, STATE, AND LOCAL PERMITS

As the Proposed Action is a lease and conveyance of facilities and improvements, no federal, state, or local permits would be required for this action itself.

1.5 INTERGOVERNMENTAL COORDINATION, PUBLIC AND AGENCY PARTICIPATION

HAFB consulted the Massachusetts Historical Commission (MHC), Minute Man National Historical Park, the Narragansett Indian Tribe, Mashpee Wampanoag Tribe, and Wampanoag Tribe of Gay Head (Aquinnah). Attachment A includes copies of the consultation. MIT LL coordinated with and is on the 27 November 2023 agenda of the Town of Lexington Select Board to describe the intent of the proposed Master Lease and building conveyance to representatives of the Towns of Bedford, Concord, Lexington, and Lincoln that surround HAFB.

Copies of the Draft MIT Lincoln Lab Master Lease EA and FONSI were made available for agencies and public review at the following internet link:

https://www.hanscom.af.mil/About-Us/Fact-Sheets/Display/Article/379486/civil-engineering/

Thirty days have been allowed for the agencies and the public to comment on the Draft EA/FONSI. The public comment period will end on 23 December 2023. The public comment notification is included in Attachment C.

Because the Proposed Action would be undertaken by the DAF but occur on property to support MIT's DoD FFRDC activities, this EA is being prepared by MIT LL on behalf of HAFB. The EA is being reviewed by the DAF, including the environmental planning organizations at HAFB, the Air Force Civil Engineer Center (AFCEC) NEPA Division (CZN), and the Air Force Materiel Command (AFMC) headquarters.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The FY23 NDAA created a new statute, 10 USC Section 2669, which explicitly provided for both a 50-year no cost lease agreement and a conveyance of facility ownership. The law allowed a covered FFRDC to obtain a 50-year no cost lease of its land, facilities, infrastructure, and improvements with a conveyance of ownership of the facilities and improvements. DAF proposes negotiating and signing a lease agreement (Master Lease), with a 50-year term, to include utility infrastructure in the land area, and effectuating a separate conveyance via quitclaim deed of facility and improvements ownership from the DAF. MIT agrees with the 50-year lease and conveyance of buildings, facilities, and infrastructure approach.

The Proposed Action would involve establishing and implementing a lease agreement (Master Lease) between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT, in order to facilitate current FFRDC operations and establish the conditions needed for long-term modernization of the MIT LL FFRDC facility complex. This Proposed Action is only for the leasing of land and conveyance of buildings. It is a real estate transaction. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. Future building modification, demolition, and construction on the property would be evaluated separately in accordance with the Air Force *EIAP*, 32 CFR Part 989, as projects are proposed.

The Master Lease area is a total of about 66.58 acres of land divided into five parcels, and includes 22 existing buildings with a total of 1,183,260 gross square feet, and various utility lines that would be conveyed to MIT. The Master Lease area does not include the Compound Semiconductor Laboratory – Microelectronics Integration Facility (CSL-MIF) and Engineering and Prototyping Facility (EPF) military construction (MILCON) project sites or the areas currently leased to MIT by the DAF pursuant to the MIT Federal Credit Union Lease or the South Lab Land Lease, the latter encompassing the parking garage and the entire South Lab complex. In the future, the lease area and building conveyance may be adjusted to add the MILCON project sites and buildings when construction is completed, and add the area and buildings encompassed by the South Lab Land Lease no later than when that lease period ends. However, the credit union is a separate entity, independent of MIT, and has a standalone lease in accordance with the applicable AFIs.

The Master Lease details a Use of Leased Premises section, which discusses permitted uses required or necessary to perform and support the research and development activities of the Prime Contract. These uses include but are not limited to, general office use, research and development, biotechnical research, light and heavy laboratories, parking, support facilities, and related activities to carry out the operation, maintenance, renovation, improvements, demolition, and modernization to the existing buildings and facilities, the construction of new buildings, infrastructure, and improvements, as hereinafter defined, and as required in the performance of the Prime Contract by the Lessee and for no other purposes, subject, however, to all applicable provisions of this Lease. However, while these general uses are stated within the Master Lease agreement, the Proposed Action would establish the conditions MIT LL will need in the future to relocate some functions that have become highly compressed or fragmented, and would allow MIT LL to vacate and then eventually allow MIT LL to demolish some existing buildings in order to build new replacement purpose-

built facilities. As these actions are not yet proposed and regardless would not occur in the next 5 years, they would be evaluated separately in accordance with the Air Force *EIAP*, 32 CFR Part 989, as projects are proposed.

2.2 SELECTION STANDARDS AND CRITERIA

The following standards are based on the purpose and need for the Proposed Action and were used to determine reasonable alternatives:

1. Provide the ability for MIT to make modifications to existing buildings.
2. Provide the ability for MIT to construct new buildings and demolish existing buildings as necessary.
3. Provide the ability for MIT to budget and schedule DoD projects which meet program requirements in reliable timeframes of 3 to 5 years, instead of the more than 5-year timeframe required going through the military funding process.

The Proposed Action is a real estate transaction. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. Future building modification, demolition, and construction on the property would be evaluated separately in accordance with the Air Force *EIAP*, 32 CFR Part 989, as projects are proposed.

The single prime contract that the DAF has with MIT has approximately 900 open projects. Most of these projects have urgent operational needs, and often these projects have short durations and require the development of new and/or advanced technologies. In the prime contract Work Statement, para 1.2, 'Scope' states, "Research and Development projects will extend from fundamental investigations in science through the development of new, advanced technologies, including rapid prototyping.…"

Alternatives were evaluated considering the selection standards as applied to the MIT LL FFRDC mission and priorities.

2.3 ALTERNATIVES ELIMINATED FROM FURTHER ANALYSIS

The alternative of a lease without building and facilities conveyance was carefully examined. Without building conveyance, the land would be leased to MIT, but the buildings would remain as Air Force property and MIT would continue to be subject to the Air Force funding and approval processes that have limited MIT's ability to repair and modernize the existing buildings.

After consideration of this alternative, it was determined that building conveyance concurrent with the lease was required, and specific statutory authority for the conveyance was drafted by the DAF and enacted in Public Law. The recommendation for this legal entitlement for a conveyance was made by the Deputy Assistant Secretary of the Air Force for Environment, Safety, and Infrastructure (SAF/IE), maintaining that if there was a lease with no building conveyance, MIT would still need to go through the Air Force funding and approval processes.

Without the conveyance of these buildings, MIT would not be entitled to make any improvements, which has been the current problem, as important DoD funded projects are continuously delayed or on hold. There are other reasons the "no conveyance" alternative was eliminated from consideration, such as thwarting the ability to apply for various grants for energy efficiency improvements, as these require MIT as the applicant to be the building owner, and the foundational determination was premised on the fact that MIT did not want to renew a contract for the FFRDC with buildings that could not be improved.

The lease without building and facilities conveyance alternative was evaluated resulting in its elimination. For the reasons discussed above, the alternative would not meet any of the three selection standards.

2.4 ALTERNATIVES CARRIED FORWARD FOR ANALYSIS

MIT LL and HAFB are evaluating two options for the Proposed Action:

- No Action
- Master Lease with facilities conveyance

2.4.1 No Action Alternative

The No Action alternative is the baseline for the rest of the analysis and helps determine the extent to which the Proposed Action would impact the environment. While the No Action alternative does not fulfill the Purpose nor Need for the Proposed Action, the consequences of the No Action alternative are evaluated in this EA in accordance with 32 CFR 989.8.

Under the No Action alternative, there would be no lease of land nor conveyance of buildings or facilities, and operations and maintenance would continue under the BSA. MIT would not be able to build new replacement facilities nor perform unspecified minor construction on a timeline that would enable meeting DoD project requirements and schedules, leaving the status quo situation as is with no change. Under the No Action Alternative, for the most part, operations would remain in the current buildings and facilities would not be improved beyond remedying deferred maintenance. The current situation is not sustainable as the likelihood of building failure, including possibly catastrophic building failure, is increasing. Ultimately, the dilapidated state of the status quo would lead to the inability of MIT LL to accomplish its unique DoD mission**.**

2.4.2 Master Lease with Facilities Conveyance (Preferred Alternative)

The Master Lease area is a total of about 66.58 acres of land divided into five parcels (Figure 2-1). The Master Lease area includes 22 existing buildings with a total of 1,183,260 gross square feet, as detailed in Table 2-1, and various utility lines that would be conveyed to MIT. The Master Lease area does not include the CSL-MIF and EPF MILCON project sites or the areas currently leased to MIT by the Air Force pursuant to the MIT Federal Credit Union Lease or the South Lab Land Lease, the latter encompassing the parking garage and the entire South Lab complex. In the future, the lease area and building conveyance may be adjusted to add the MILCON project sites and buildings when construction is completed, and add the area and buildings encompassed by the South Lab Land Lease no later than when that lease period ends.

However, the credit union is a separate entity, independent of MIT, and has a standalone lease in accordance with the applicable AFIs.

The Master Lease with facilities conveyance is the Preferred Alternative and thus the Proposed Action evaluated in this EA.

2.5 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

Potential environmental impacts associated with the No Action alternative and the Proposed Action for all resources are summarized as follows:

- As there would be no lease of land nor conveyance of buildings or facilities under the No Action alternative, and operations and maintenance would continue under the BSA, implementation of this alternative would have no significant impacts.
- As the Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT, implementation of this alternative would have no significant impacts.

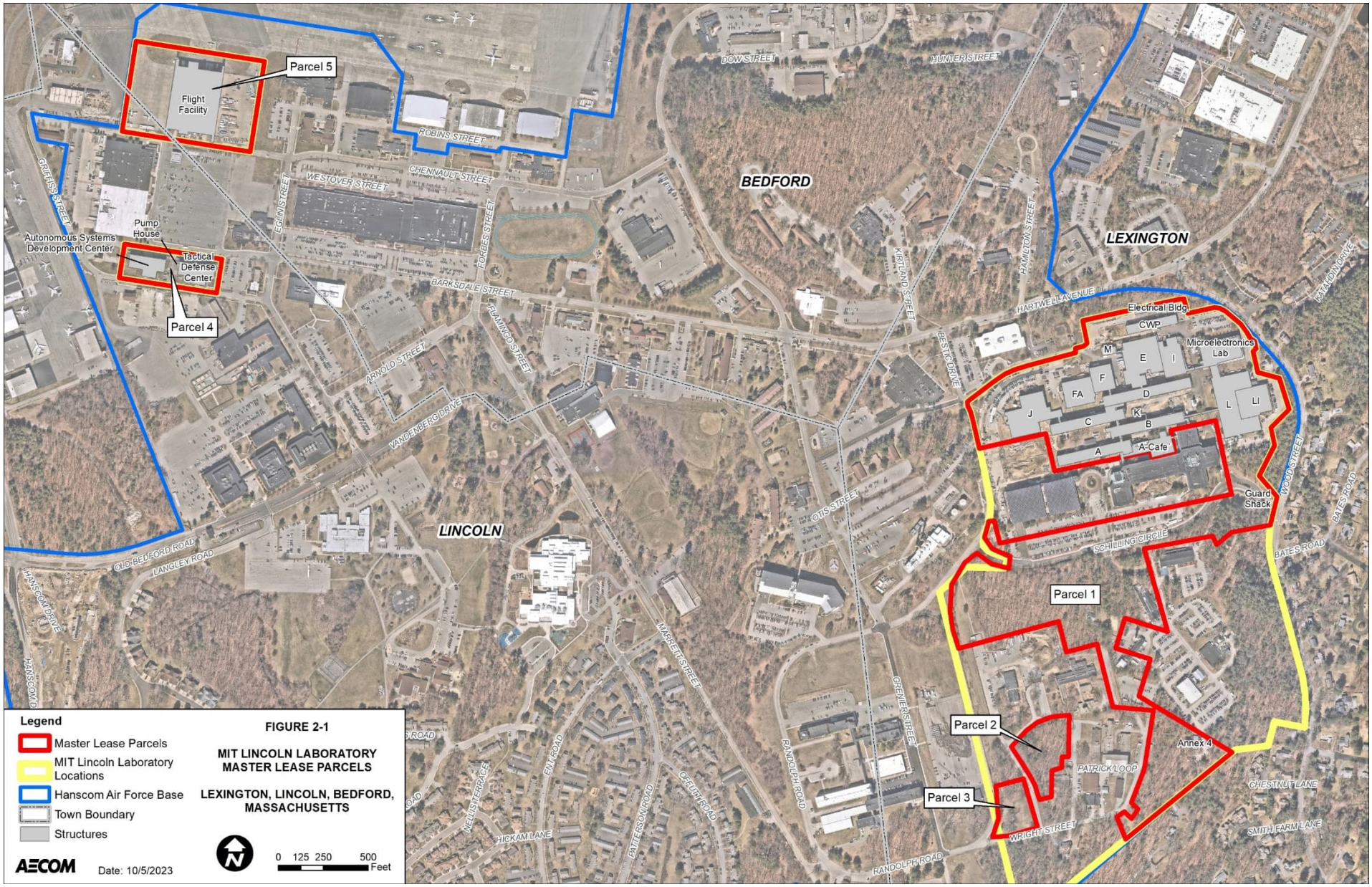

Parcel 5
Flight Facility
Parcel 4
Pump House
Autonomous Systems Development Center
Tactical Defense Center
Parcel 1
Parcel 2
Parcel 3
BEDFORD
LEXINGTON
LINCOLN
Electrical Bldg
CWP
Microelectronics Lab
A-Cafe
Guard Shack
Annex 4
ROBINS STREET
WESTOVER STREET
CHENNAULT STREET
BARKSDALE STREET
ARNOLD STREET
VANDENBERG DRIVE
OTIS STREET
HARTWELL AVENUE
SCHILLING CIRCLE
PATRICK LOOP
WRIGHT STREET
RANDOLPH ROAD
CHESTNUT LANE
SMITH FARM LANE
BATES ROAD
WOOD STREET
OLD BEDFORD ROAD
LANGLEY ROAD
HANSCOM DRIVE
MARRETT STREET
GREENE STREET
HICKAM LANE
PATTERSON ROAD
O'FLINT ROAD
Legend
Master Lease Parcels
MIT Lincoln Laboratory Locations
Hanscom Air Force Base
Town Boundary
Structures
AECOM
Date: 10/5/2023
FIGURE 2-1
MIT LINCOLN LABORATORY MASTER LEASE PARCELS
LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS
0 125 250 500 Feet

Table 2-1. Summary of Parcels and Buildings for MIT Lincoln Laboratory Master Lease

Building Title / Description	Gross Area (sf)	Net Area (sf)	Floors	Year Built
Parcel 1				
Building A	80,923	75,200	3	1952, 2018
A-Café	21,742	20,542	2	1993, 2004, 2017
Building B	103,515	95,099	4	1952
Building C	143,593	132,949	6	1952
Building D	127,923	117,007	5	1952
Building E	60,181	58,313	3	1952
Building F	44,260	43,163	3	1955
Building FA	47,995	47,332	2	1962
Building I	49,643	47,537	4	1966
Building J	78,783	70,974	3	1957
Building K	2,402	2,272	1	1957
Building L, LI	133,483	130,066	3	1961, 1990
Building M	5,431	4,852	2	1984, 1991
Microelectronics Lab	94,939	88,614	3	1989
Chilled Water Plant (CWP)	15,236	14,675	1	1967
Electrical Building	4,786	4,603	1	1986
Guard Shack	60	54	1	1955-1957
Annex 4	3,241	2,843	2	1961
Parcel 1 Total	1,018,136	956,095		
Parcel 4				
Tactical Defense Center	21,029	19,820	2	1964, 2012
Pump House	60	54	1	1964
Autonomous Systems Center	17,300	16,587	1	1964, 2015, 2016
Parcel 4 Total	38,389	36,461		
Parcel 5				
Flight Facility	126,734	120,543	3	1956, 2001
Parcel 5 Total	126,734	120,543		
Master Lease Total	**1,183,260**	**1,113,100**		

Notes: 1. Parcels 2 and 3 currently do not support any buildings.
2. All buildings listed above are currently in use by MIT LL and are owned by DAF.

3.0 AFFECTED ENVIRONMENT AND ANTICIPATED ENVIRONMENTAL IMPACTS

This chapter describes the existing conditions of the resources that may be affected by the Proposed Action and assesses the environmental consequences of implementing the No Action and Master Lease with Facilities Conveyance alternatives on these resources, including direct, indirect, and cumulative effects. The chapter is organized by potentially affected resources.

3.1 TOPOGRAPHY, GEOLOGY, AND SOILS

3.1.1 Affected Environment

The topography around HAFB is characterized by gentle, low lying, easterly slopes. Most of HAFB has an average elevation of 125 to 130 feet above mean sea level (MSL). The MIT LL campus is located at a somewhat higher elevation, generally ranging from 185 feet to 225 feet MSL. Several low hills are also located in or adjacent to HAFB, including Katahdin Hill (300 feet MSL), upon which the Upper Air Force Research Laboratory (AFRL) and adjacent MIT property are located.

The primary bedrock formations underlying the base are Siluro-Ordovician intrusive igneous rocks. Andover granite is the most common bedrock underlying the base. Assabet quartz diorite and Shawsheen gneiss are also present in the northeast portion of the base (HAFB, 2010a). Bedrock is exposed at a few locations within the base (HAFB, 2010a). In general, depth to bedrock on or immediately adjacent to the MIT LL campus ranges from as little as 7 feet (in the west) to as much as 67 feet (in the south and southwest). Surficial geology and geomorphology on the base reflect the presence of several large glaciers during the Pleistocene era, when much of HAFB was covered by Glacial Lake Concord. As the glaciers retreated, eroded bedrock and mixed rock particles were deposited as till, drumlins, kames, and kame terraces (HAFB, 2010a).

Soils at HAFB were generally formed in glacial till/outwash, or ground moraines, with the eastern side (higher elevations) of the base primarily formed in glacial till and the western and northern sides formed in glacial outwash (HAFB, 2010a). Due to earthmoving activities since construction of the base in the early 1940s, most of the soils have been modified and are now urban land or udorthents (HAFB, 2010a). Areas on base that still maintain the original soil are primarily comprised of sandy loam or loamy sand (HAFB, 2010a).

In general, most of the soils at HAFB, especially in the areas with low degree of relief, fall into Hydrologic Soil Group (HSG) C, indicating moderately high runoff potential when soils are thoroughly wetted. However, areas with a high degree of relief fall into HSG A and B, soils with low to moderately low runoff potential when thoroughly wet (USDA, 2007).

3.1.1.1 Soil Types in Vicinity of Proposed MIT LL Master Lease and Building Conveyance

The online United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey was consulted for soils located at the five parcels.

3.1.1.1.1 Parcel 1

As indicated in the Custom Soil Resource Report (USDA, 2023), the soils located within Parcel 1 are represented by five soil groups. These groups comprise Windsor loamy sands with 3 to 8 percent slopes (map unit symbol 255B), Urban land (map unit symbol 602), Udorthents-Urban land complex (map unit symbol 656), Hollis-Rock outcrop-Charlton complex with 15 to 25 percent slopes (map unit symbol 104D), and Charlton-Hollis-Rock outcrop complex with 15 to 25 percent slopes (map unit symbol 103D).
The soil group in the center of Parcel 1 is Windsor loamy sands with 3 to 8 percent slopes (map unit symbol 255B). According to the Middlesex County map unit description (USDA, 2023), these soils' parent materials are classified as loose sandy glaciofluvial deposits derived from granite, schist and/or gneiss. These soils are found on glacial outwash plains, deltas, dunes and outwash terraces. Windsor loamy sands with 3 to 8 percent slopes are classified as HSG A with a natural drainage class defined as excessively drained. This soil type also has a low runoff class and a depth to water table of more than 80 inches. These soils are classified as "Additional farmland of statewide importance," which, per 7 CFR 657.5(c), "is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops."

Urban Land soils make up a majority of the soil types within the northern and southern portions of Parcel 1. According to the HAFB Integrated Natural Resources Management Plan (INRMP), Urban Land (map unit symbol 602) is defined as soils altered or obscured by buildings, industrial areas, paved parking lots, sidewalks, roads, railroad yards, etc. covering at least 75 percent of the surface area (HAFB, 2010a, 2023). These soils also have a primary parent material of excavated and filled land and are classified as "Not Prime Farmland" (USDA, 2023).

A second soil group in the southern portion of Parcel 1 is classified as Hollis-Rock outcrop-Charlton complex with 15 to 25 percent slopes (map unit symbol 104D). According to the Middlesex County map unit description, Hollis-Rock outcrop-Charlton complex is defined as having parent material that is friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss. These soils are found on drumlins and ground moraines, with a drainage class of "well drained" and are in HSG A (USDA, 2023). The HAFB INRMP describes this soil class as soil mixed with rock outcrops, containing moderate to steep slopes, stony and extremely stony surfaces (HAFB, 2010a).

The final soil group in Parcel 1, located in the northeastern portion of the parcel, is classified as Charlton-Hollis-Rock-outcrop complex with 15 to 25 percent slopes (map unit symbol 103D). According to the Middlesex County map unit description, Charlton-Hollis-Rock-outcrop complex is defined as having parent material that is friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss. These soils are found on drumlins and ground moraines, with a drainage class of "well drained" and are in HSG A (USDA, 2023). The HAFB INRMP describes this soil class as soil mixed with rock outcrops, containing steep slopes, stony and extremely stony surfaces (HAFB, 2010a).

3.1.1.1.2 Parcels 2, 3, 4, and 5

As shown on Figure 3-1, Parcel 2, located southwest of Parcel 1, is comprised entirely of Charlton-Hollis-Rock outcrop complex with 3 to 8 percent slopes (map unit symbol 103B). This soil type occurs on less steep slopes, but otherwise shares the characteristics described above for Charlton-Hollis-Rock-outcrop complex with 15 to 25 percent slopes (map unit symbol 103D).

Parcel 3 is located directly southwest of Parcel 2 and is made up of two separate soil groups. The first soil group is Charlton-Hollis-Rock outcrop complex with 3 to 8 percent slopes (map unit symbol 103B), located on the eastern portion of the parcel. The second soil group is Urban Land (map unit symbol 602), which is located across the western portion of the parcel.

Parcel 4 and Parcel 5 are in the northwestern portion of HAFB. The soil type for both of these parcels is made up entirely of Urban Land (map unit symbol 602), as the site has been developed and in use since the formation of the base.

3.1.2 Anticipated Environmental Impacts

3.1.2.1 No Action

The No Action alternative would not result in any short- or long-term, direct, indirect, or cumulative impacts to topography, geologic features, or soils on HAFB or the MIT LL facility complex, as the alternative would leave the status quo situation as is with no change and, for the most part, operations would remain in the current buildings and facilities would not be improved beyond remedying deferred maintenance. Implementation of this alternative would have no significant impacts to topography, geology, and soils.

3.1.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No short- or long-term, direct, indirect, or cumulative impacts to topography, geology, and soils would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts to topography, geology, and soils.

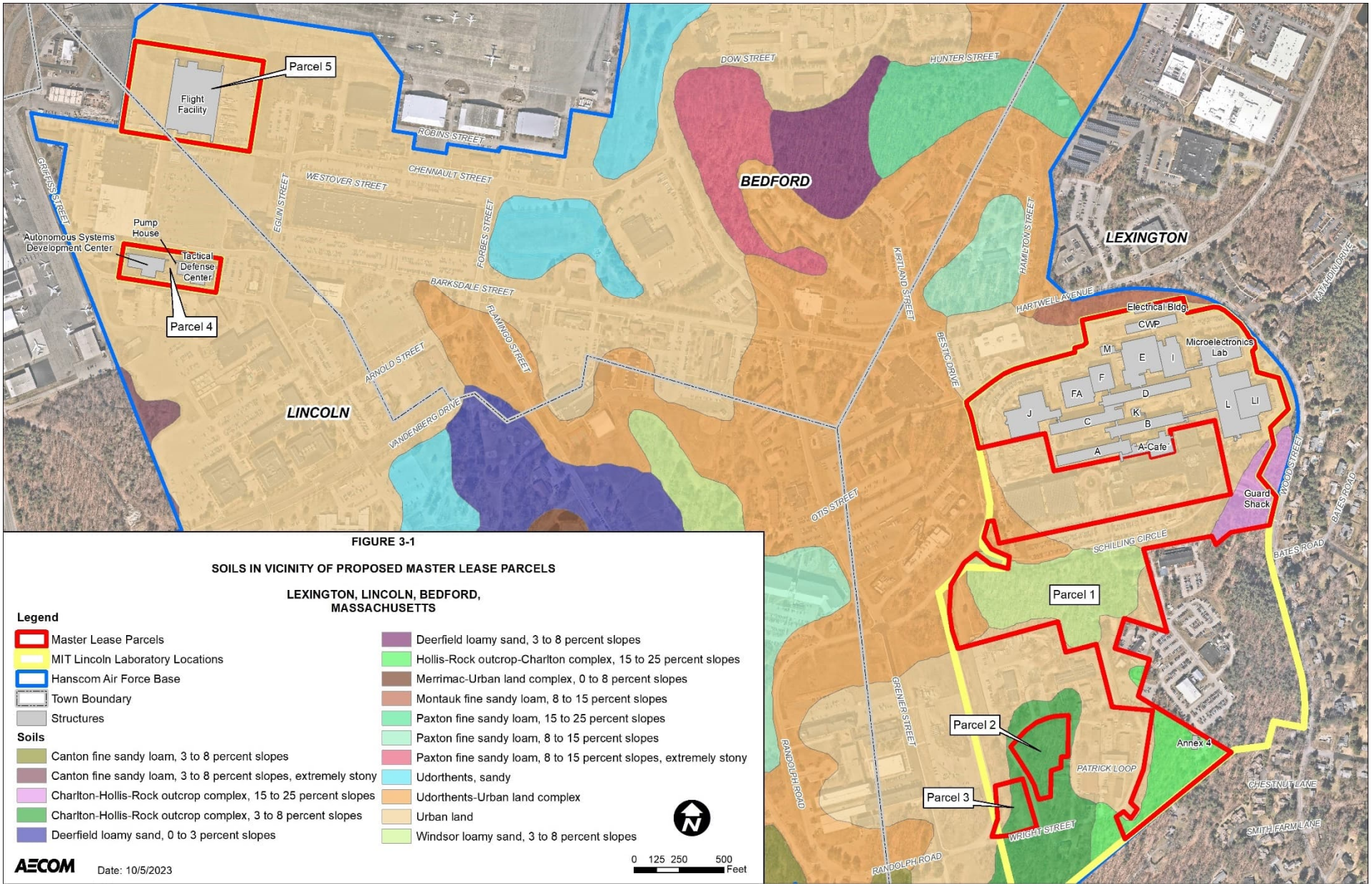


FIGURE 3-1

SOILS IN VICINITY OF PROPOSED MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

Legend

- Master Lease Parcels
- MIT Lincoln Laboratory Locations
- Hanscom Air Force Base
- Town Boundary
- Structures

Soils

- Canton fine sandy loam, 3 to 8 percent slopes
- Canton fine sandy loam, 3 to 8 percent slopes, extremely stony
- Charlton-Hollis-Rock outcrop complex, 15 to 25 percent slopes
- Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes
- Deerfield loamy sand, 0 to 3 percent slopes
- Deerfield loamy sand, 3 to 8 percent slopes
- Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes
- Merrimac-Urban land complex, 0 to 8 percent slopes
- Montauk fine sandy loam, 8 to 15 percent slopes
- Paxton fine sandy loam, 15 to 25 percent slopes
- Paxton fine sandy loam, 8 to 15 percent slopes
- Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony
- Udorthents, sandy
- Udorthents-Urban land complex
- Urban land
- Windsor loamy sand, 3 to 8 percent slopes

AECOM Date: 10/5/2023

3.2 LAND USE

3.2.1 Affected Environment

HAFB is located approximately 18 miles northwest of Boston, Massachusetts, just outside the Route 128/I-95 circumferential expressway. The base is located just west of a major light industrial and office park corridor, which leads to the HAFB gate (Hartwell Avenue) closest to MIT LL. HAFB occupies approximately 846 acres of federally owned land within the towns of Bedford, Lexington, and Lincoln, all of which are primarily suburban residential communities with commercial centers. The closest residential areas to the MIT LL campus are located approximately 500 to 650 feet to the east along Wood Street.

The Laurence G. Hanscom Field airport (Hanscom Field) is located adjacent to HAFB in the town of Bedford (with the southwestern portion of the airport located in the town of Concord). The airport is owned by the Commonwealth of Massachusetts and administered by the Massachusetts Port Authority (Massport) (HAFB, 2017). While the DAF no longer owns Hanscom Field, the military does use it for occasional flight operations. According to Massport, less than 1 percent of the flights are military (HAFB, 2017). There are two runways at the airport, approximately 5,000 and 7,000 feet long.

The Minute Man National Historical Park, operated by the National Park Service, is adjacent to the southern perimeter of HAFB and south of the MIT LL campus, and spans the towns of Lexington, Lincoln, and Concord along the Route 2A corridor. The park, encompassing 967 acres, was created by an act of Congress in 1959 to preserve and interpret the events, ideas, significant historic sites, structures, properties, and landscapes associated with the start of the American Revolution at Lexington's Battle Green and Concord's North Bridge and along the Battle Road of 19 April 1775. Great Meadows National Wildlife Refuge, encompassing approximately 3,800 acres, is located approximately three miles northwest of the MIT LL campus.

HAFB is comprised of 846-acres of land, containing 713 acres that are developed or altered (HAFB, 2023). These developed or altered areas support 413 administrative and research facilities/buildings, 731 private housing units, sidewalks, and roads. The 133 undeveloped acres on the base are semi-improved or forested, and wetland areas.

MIT LL occupies approximately 100 acres through the BSA. Most of the facilities MIT LL uses are on approximately 80 acres of federal property on the eastern perimeter of HAFB, while 20 of the acres utilized are MIT property. The MIT LL campus, as well as the Katahdin Hill facilities, is located within the town boundary of Lexington. The majority of the former AFRL campus is located in Lexington with a small portion located with the town boundary of Lincoln.

3.2.1.1 Parcel-Specific Land Use

There are 11 major land use classifications designated on HAFB, as identified in the 2017 HAFB Installation Development Plan (IDP) and shown in Figure 3-2. The predominant land uses within the proposed Master Lease parcels are Industrial Use Area and Open Space/Buffer Zone (HAFB, 2017).

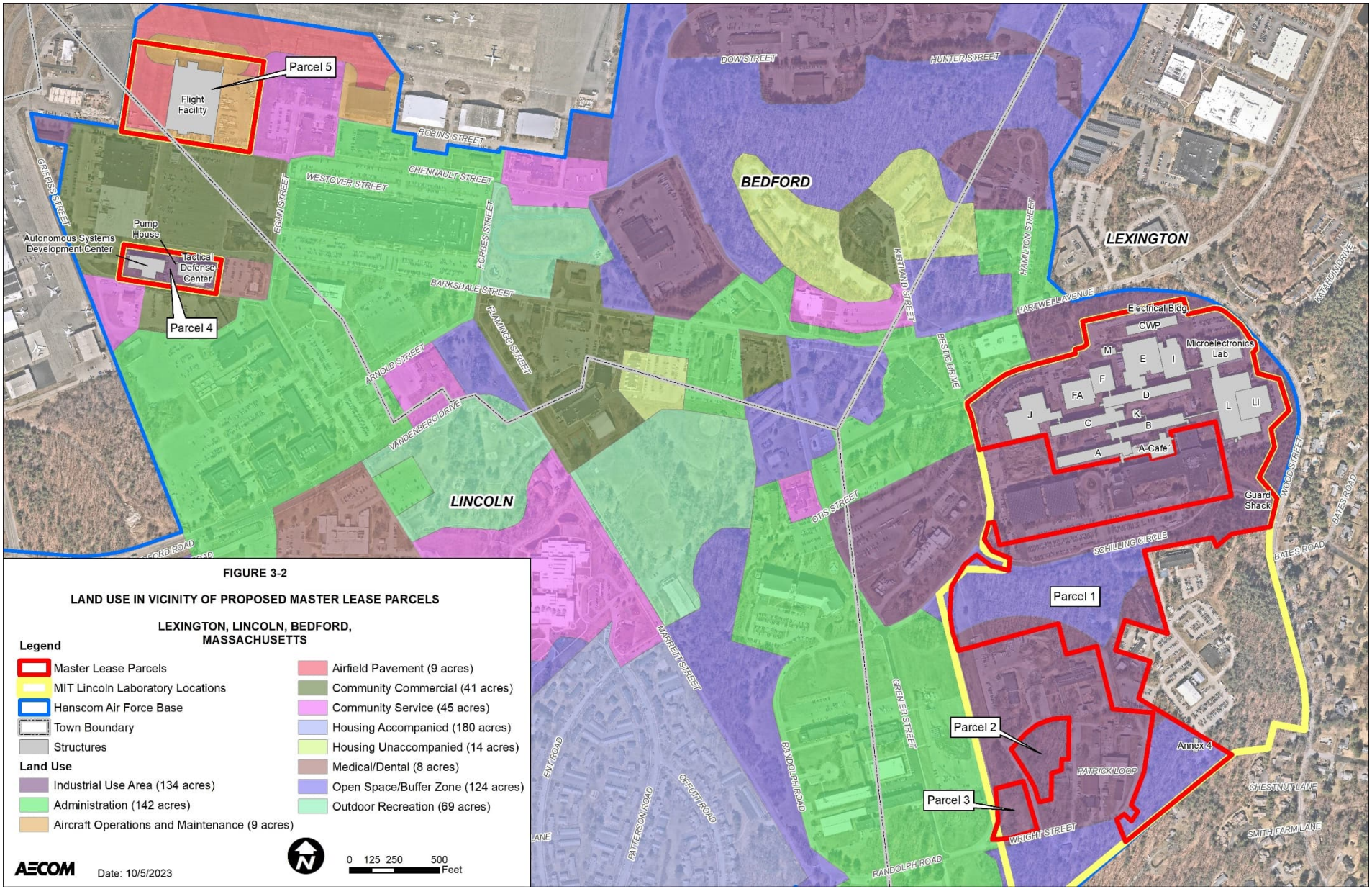


FIGURE 3-2

LAND USE IN VICINITY OF PROPOSED MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

Legend

- Master Lease Parcels
- MIT Lincoln Laboratory Locations
- Hanscom Air Force Base
- Town Boundary
- Structures

Land Use

- Industrial Use Area (134 acres)
- Administration (142 acres)
- Aircraft Operations and Maintenance (9 acres)
- Airfield Pavement (9 acres)
- Community Commercial (41 acres)
- Community Service (45 acres)
- Housing Accompanied (180 acres)
- Housing Unaccompanied (14 acres)
- Medical/Dental (8 acres)
- Open Space/Buffer Zone (124 acres)
- Outdoor Recreation (69 acres)

AECOM Date: 10/5/2023

0 125 250 500 Feet

3.2.1.1.1 Parcel 1

Parcel 1 encompasses 18 buildings and land in two major land use types: Industrial Use Area and Open Space/Buffer Zone (Table 2-1 and Figure 3-2).

Buildings A through E were constructed in 1952 and Building F was constructed in 1955. By 1957, Building K and a portion of Building J were built. Building L and Annex 4 were constructed in 1961 and Building FA was constructed in 1962. According to information provided by MIT LL, Building I was constructed in 1966 and the Chilled Water Plant (CWP) building was constructed in 1967, with a building addition in 1992. Building M was constructed in 1984 and the Electrical Building was constructed in 1986. The Microelectronics Lab was constructed in 1989. Between 1990 and 1993, Building LI, Building S (abuts to the south), a Cafeteria (A-Café), and an off-site parking garage (abuts to the south) were constructed. A portion of the northern side of Building FA was demolished between 1995 and 2001. Building A Annex (part of Building A) was constructed in 2018.

Buildings A, B, C, D, E, F, FA, J, L, LI, M, the Microelectronics Lab, and Annex 4 are primarily used for offices and laboratories. Laboratories include dry labs, wet labs, clean labs, and assembly and production labs. Buildings F and FA are data centers and electronic labs, and include classified areas. Building M includes the main chemical storage and hazardous waste storage area.

A portion of Building I was formerly used as a repair garage for vehicle maintenance and repairs; however, for at least the past two decades, the building has been used for assembly and testing. Building K is used for document storage, and is used to store and destroy classified documents.

The CWP consists of an office area, a breakroom area, restrooms, and a control room, with a majority of the remainder of the building containing equipment (compressors, chillers) associated with the chilled water processes that provide chilled water to the MIT LL buildings. The Electrical Building contains high voltage switch gear that transfers electricity to substations throughout the MIT LL campus.

A cafeteria is located in Building A-Café and a “grab and go” café is located in Building D. Boiler rooms, elevators (except Building K and the CWP), mechanical/utility closets, machine shops, and restrooms are located throughout the MIT LL facility complex.

Paved parking, accessways, walkways, and landscaped areas are located surrounding buildings in the northern portion of Parcel 1 as well as around Annex 4, located in the southern portion of Parcel 1. A bus stop is located in the southern portion of the parcel along Schilling Circle. A walking trail, picnic pavilion, volleyball court, gas grills, and storage shed for propane tanks associated with the gas grills are located in the wooded area on the southern portion of the parcel. A guard shack is located along Schilling Circle at Gate 3 (Wood Street), which provides direct access to MIT LL.

3.2.1.1.2 Parcels 2 and 3

Parcels 2 and 3 are within the boundaries of the former Upper AFRL located on Katahdin Hill. The buildings of the Upper AFRL were used for laboratory, office, and research and assembly uses up through 2011, at which time the AFRL activities ended and AFRL activities and personnel were relocated (Public Archaeology Laboratory (PAL), 2012). The buildings were then used by DAF tenants for offices and Civil Air Patrol.

No buildings are currently located within Parcels 2 and 3.

Parcel 2 encompasses a woodlot; the land is classified as an Industrial Use Area (Figure 3-2).

Parcel 3 is located directly southwest of Parcel 2 and is open field and woodlot; its land use classification likewise is Industrial Use Area. The southern portion of Parcel 3 previously supported a building that was used as a Speech Research Laboratory following its construction in 1955; however, the building was demolished in mid-2008 (PAL, 2014).

3.2.1.1.3 Parcels 4 and 5

Parcel 4 and Parcel 5 are located on the northwestern portion of HAFB. Parcel 4 contains the Tactical Defense Center, Pump House, and Autonomous Systems Development Center (Table 2-1). The land in Parcel 4 is classified as an Industrial Use Area (Figure 3-2). Parcel 5 contains the Flight Facility, and the land is classified as both Aircraft Operations and Maintenance, and Airfield Pavement.

By 1955, the current Flight Facility building was constructed. The Tactical Defense Center and Autonomous Systems Development Center were constructed in 1964; these buildings were developed on the previously paved lot. Between 1995 and 2001, buildings to the west-southwest of the Flight Facility were demolished and the Commissary Building was constructed. Between 2001 and 2003, a building to the south of the Flight Facility and north of the Tactical Defense Center and Autonomous Systems Development Center was replaced with the current paved parking lot. The Flight Facility, Tactical Defense Center, and Autonomous Systems Development Center are former airplane hangars that have been repurposed for MIT LL use in the 1999-2005 time frame.

The Flight Facility is currently used by MIT LL as a flight testing facility. The upper floors of the building are used as light laboratory, office, and conference room space. The east side of the building is used for various research and test activities.

The Tactical Defense Center is used as laboratory research and test space.

The Pump House is a small pump building, which is no longer in use.

The Autonomous Systems Development Center is primarily used for electronic research and consists of an office and high bay area. The high bay area in the building is used for testing drones and other electronic equipment. An aboveground pool is located inside the building and used for testing equipment under water.

3.2.2 Anticipated Environmental Impacts

3.2.2.1 No Action

The No Action alternative would result in the continued occupancy of the aging, over-crowded facilities on the MIT LL facility complex. As there would be no new construction, there would be no change in designated land uses. Implementation of this alternative would have no significant impacts on land use.

3.2.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No short- or long-term,

direct, indirect, or cumulative impacts to land use would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts on land use.

3.3 WATER RESOURCES

3.3.1 Affected Environment

The characteristics of surface water and groundwater, as well as associated wetlands and floodplains, on HAFB and at MIT LL are discussed in this section and generally describe the conditions within and surrounding the Master Lease parcels and HAFB.

3.3.1.1 Surface Water

Most of HAFB and all of the Master Lease parcels are located in the Shawsheen River Watershed, a tributary of the Merrimack River Basin. Prior to construction of the base, the headwaters of the Shawsheen River (a south to north flowing river) originated from a small pond on HAFB that drained northeast through wetlands (HAFB, 2010a). The pond has since been filled, and the headwaters now originate from a swampy area in the southwest portion of the base just north of Folly Pond and North Great Road (Massachusetts Department of Environmental Protection (MassDEP), 2003). Two unnamed tributaries flow from the swampy area to a culvert at Marrett Street and Old Bedford Road, where the river enters closed conduits (MassDEP, 2003). The river resurfaces to the northeast of the taxiways on HAFB. The stormwater network conveys surface runoff around HAFB property to the Shawsheen River and Kiln Brook, one of its tributaries (HAFB, 2010a). MIT LL drains to Kiln Brook, and thus contributes to the headwaters of the Shawsheen River (MassDEP, 2003).

Surface runoff in the area varies seasonally, with low flow in the winter months and heavy flow in the spring due to snowmelt and an increase in rain. While surface runoff does contribute to the Shawsheen River Watershed, flows in the watershed also rely heavily upon groundwater flow moving through the base. This groundwater flow results from the array of small wetlands areas and the underground aquifer, which supplies enough discharge so the flow of the river does not stop (HAFB, 2010a).

No surface waters exist within or in the immediate vicinity of the proposed Master Lease parcels. These areas ultimately drain to the Shawsheen River.

3.3.1.2 Groundwater

The aquifer located under HAFB flows to the northeast and consists of an upper, unconfined aquifer with lacustrine deposits of glacial origin. The unconfined aquifer is underlain by a semi-confined lower aquifer above bedrock. The aquifer is categorized as “Medium Yield,” having a yield between 100- and 300-gallons per minute (Massachusetts Bureau of Geographic Information (MassGIS), 2007).

The groundwater table within the vicinity of wetlands and areas of lower elevation is known to be particularly high on base, with depth to groundwater ranging from three to seven feet (HAFB, 2003). The depth to the water table throughout the base generally ranges from 3 to approximately 23 feet (HAFB, 2003, MIT LL, 1988).

Groundwater on the base, which is not used for drinking water, in many locations contains naturally occurring dissolved manganese and iron, which exceed the respective drinking water standards (HAFB, 2003). Additionally, groundwater in some areas has been contaminated due to past activities on base; therefore, the Environmental Restoration Program (ERP) monitors and treats several sites for groundwater contamination (HAFB, 2003). See Section 3.11.3 for additional detail on the ERP.

3.3.1.3 Wetlands

Prior to construction of the base in the early 1940s, numerous wetlands comprised the land area currently occupied by the base due to the low elevation of the area (MassDEP, 2003). Many of the wetland areas were filled during construction of the base (MassDEP, 2003). A 1997 base-wide wetlands survey (updated in 2007) identified and delineated 35 wetlands on HAFB (HAFB, 2010a). According to the 2010 Integrated Natural Resources Management Plan (HAFB, 2010a), wetlands, ranging from wet meadow to mature forested swamp, occupy approximately 43 acres (5 percent) of the base.

A small number of wetlands are located outside and proximate to the perimeter of Parcel 1 (Figure 3-3) and could be at risk of alteration if any potential future construction were to take place within the parcel. The closest wetland to Parcel 1 is a freshwater swamp located approximately 30 feet north of the northern perimeter. The wetlands also contribute groundwater discharge towards the Shawsheen River Watershed and if contaminated could pose a risk to the nearby Shawsheen River (HAFB, 2010a).

3.3.1.4 Floodplains

The National Flood Insurance Rate Map (FIRM) indicates a portion of the Shawsheen River's 100-year floodplain is located in the northeast area of the base, from the headwaters of the river to where it crosses the HAFB boundary (MassGIS, 2023). Studies have indicated a lack of groundwater recharge (due to urbanization/impervious cover) leads to flooding during storm events and low flow between storm events (MassDEP, 2003; HAFB, 2010a). No floodplains are present within the boundaries of the proposed Master Lease parcels (Figure 3-3).

3.3.2 Anticipated Environmental Impacts

3.3.2.1 No Action

The No Action alternative would not result in any alteration of the surface water, groundwater, wetland, or floodplain resources on MIT LL or HAFB. Implementation of this alternative would have no significant impacts on water resources.

3.3.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No short- or long-term, direct, indirect, or cumulative impacts to water resources would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts on water resources.

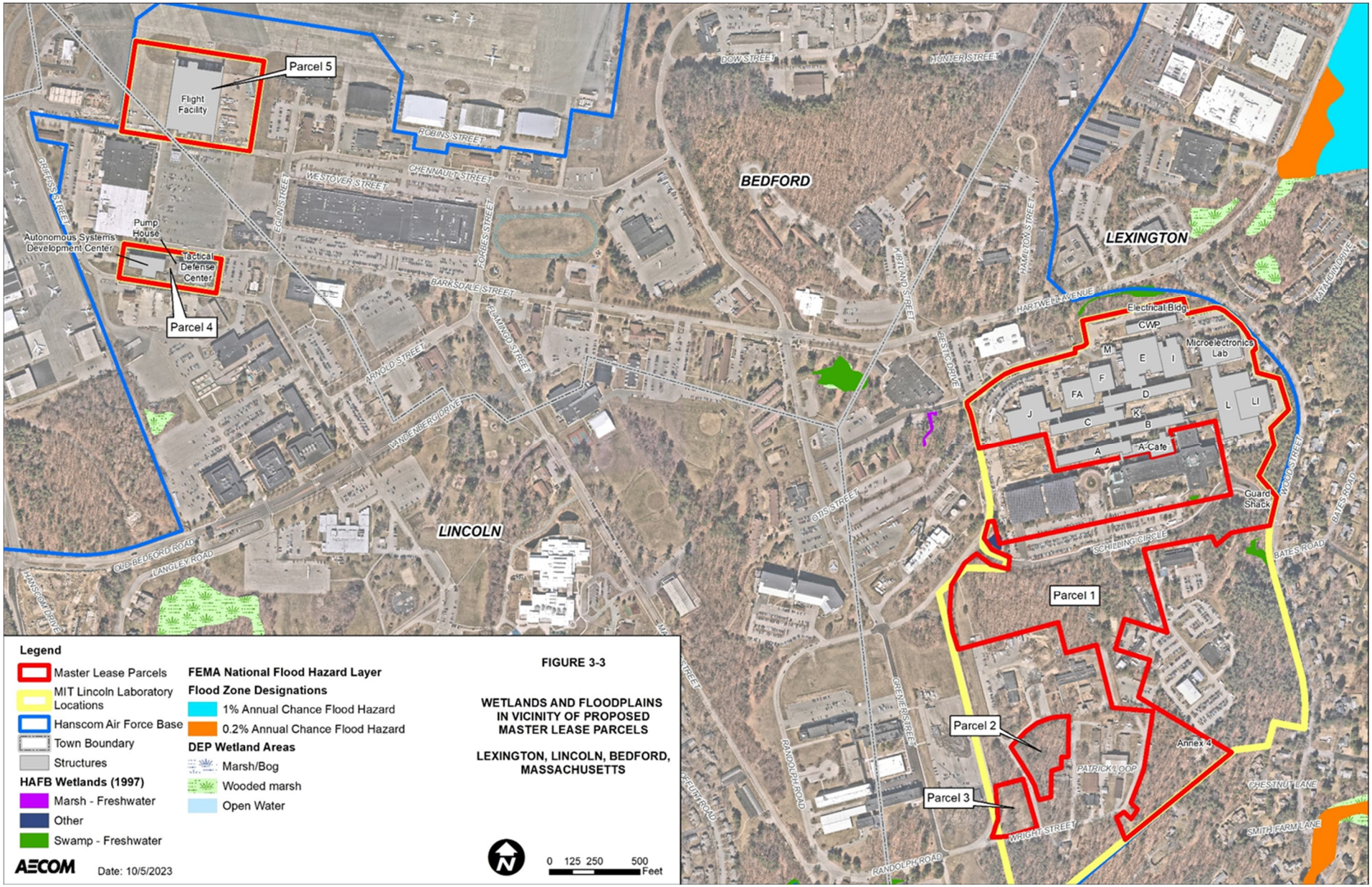


FIGURE 3-3

WETLANDS AND FLOODPLAINS IN VICINITY OF PROPOSED MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

3.4 BIOLOGICAL RESOURCES

3.4.1 Affected Environment

HAFB is located in the Gulf of Maine Coastal Plain Level IV ecoregion within the Northeastern Coastal Zone Level III ecoregion (USEPA, 2023). The Gulf of Maine Coastal Plain ecoregion currently is mostly forested; i.e., nearly all second-growth forest (bplant.org, 2023). All but a small amount of cropland and pastureland remains and, although less populous than the Boston metro area to the northeast, the ecoregion is moderately urbanized.

This section contains descriptions of biological resources, including vegetation, wildlife, and threatened or endangered species for HAFB and MIT LL within and surrounding the five proposed Master Lease parcels.

3.4.1.1 Vegetation

Due to earthmoving activities since construction of the base in the early 1940s, most of the native vegetation on base has been modified. Undisturbed remnant grasslands comprise less than 5 percent of uplands on base and occur adjacent to developed areas (HAFB, 2010a). Areas of forested uplands comprise 22 percent of the base, including mixed hardwood/softwood forests and American beech (*Fagus grandifolia*) stands. Vegetation present on base is representative of species present within the region. Developed areas of the base are planted with grasses (dominated by rye (*Lolium* spp.), fescue (*Festuca* spp.), and bluegrass (*Poa* spp.)), shrubs, and trees for aesthetics and erosion control. Erosion is minimized on base as part of the maintenance program. Plant selection, fertilization, and terracing techniques are used to ensure successful plantings and minimize soil exposure.

Invasive plants at HAFB include Tartarian honeysuckle (*Lonicera tartarica*), European buckthorn (*Rhamnus frangula*), multiflora rose (*Rosa multiflora*), garlic mustard (*Alliaria officinalis*), purple loosestrife (*Lythrum salicaria*), Oriental bittersweet (*Celastrus orbiculatus*), Japanese knotweed (*Polygonum cuspidatum*), and common reed (*Phragmites australis*) (HAFB, 2010a). Most of these species are interspersed throughout the upland and wetland systems. These invasive plants are not currently managed at a large scale on base. At a smaller scale, however, work was performed in 2010 to remove common reed from a stormwater retention area on base; this area continues to be managed. Selected wetland areas may be managed in the future for common reed and purple loosestrife.

3.4.1.2 Wildlife

HAFB is classified by the Massachusetts Division of Fisheries and Wildlife as a Category II installation (pursuant to AFMAN 32-7003, *Environmental Conservation*), defined as installations that "are unsuitable for conserving and managing fish and wildlife because of mission restrictions or resource limitations, or they are of limited size and do not have unimproved grounds" (HAFB, 2010a). HAFB fits this categorization due to the lack of continuous habitat, and the lack of potential management areas for wildlife habitat (HAFB, 2010a). However, HAFB is adjacent to the Great Meadows National Wildlife Refuge. Approximately 85 percent of the refuge's more than 3,800 acres is comprised of valuable freshwater wetlands stretching along 12 miles of the Concord and Sudbury Rivers. The United States Fish & Wildlife Service (USFWS) protects and manages Great Meadows as nesting, resting, and feeding habitat for wildlife, with special emphasis on migratory birds.

Wildlife occurring or potentially occurring on HAFB and MIT LL include birds, mammals, amphibians, fish, and macroinvertebrates; however, diversity and abundance are limited on base due to habitat fragmentation. Additionally, the base does not support significant populations of larger mammals, whose movement would be restricted by the base's perimeter fence. Nonetheless, the fragmented nature of the base habitat has created a favorable environment for avian and small mammal species well adapted to humans and development. For mature woodlots such as those present in the center portion of Parcel 1 and in Parcel 2, as well as other nearby woodlands, the oaks and beeches provide a source of nuts for species such as the eastern gray squirrel (*Sciurus carolinensis*) and wild turkey (*Meleagris gallopavo*). Otherwise, there is no noteworthy habitat for wildlife present within the proposed Master Lease parcels.

3.4.1.3 Threatened and Endangered Species

The Eastern longhorn elderberry beetle (*Desmocerus palliatus*) and the spotted turtle (*Clemmys guttata*) were both previously listed as a state Species of Special Concern but were removed from the protection list in 2006 and are no longer state protected species. HAFB still takes specific measures to protect the beetle habitat by preserving areas where elderberry bushes (*Sambucus* spp.) (i.e., the primary food source) occur. Both species utilize wetlands, and both continue to be inherently protected as part of base wetland protection efforts (HAFB, 2010a).

There are two state-listed species known to inhabit the grasslands adjacent to the runways on Massport's Hanscom Field: grasshopper sparrow (*Ammodramus savannarum*), listed as threatened, and upland sandpiper (*Bartramia longicauda*), listed as endangered (HAFB, 2010a; NHESP, 2020b). Habitat for both species is predominantly grassland fields (HAFB, 2010a).

The Massachusetts Natural Heritage & Endangered Species Program (NHESP) has identified portions of HAFB, located near Hanscom Field to the northwest, as being within *Priority Habitat* and *Estimated Habitat* for both species (HAFB, 2010a; NHESP, 2008). However, it is important to note that according to MassGIS data (2021a; 2021b), no NHESP *Estimated Habitat of Rare Wildlife* are located on HAFB, although the data do document *Priority Habitat of Rare Species* in the location described above, at a minimum distance of 500 feet northwest of 5, farther from Parcel 4, and distant from Parcels 1, 2, and 3.

The blue-spotted salamander (*Ambystoma laterale*) is listed by the NHESP (2020a, 2020b) as threatened in Bristol and Plymouth Counties and as special concern throughout the rest of the state, including Middlesex County. Environmental DNA samples taken in wetlands on HAFB confirmed the presence of blue-spotted salamanders (HAFB, 2022).

The list of federally protected species in the vicinity of HAFB was reviewed using the USFWS Information for Planning and Consultation (IPaC) tool (USFWS, 2023) to identify threatened, endangered, proposed, and candidate species that may occur in areas that may be affected by the Proposed Action. According to the list generated from the IPaC tool, there are no federally listed species known to occur within HAFB or within the proposed Master Lease parcels, with the exception of the northern long-eared bat (*Myotis septentrionalis*) and the monarch butterfly (*Danaus plexippus*). While no longer listed as threatened/endangered, the bald eagle remains protected under the Bald and Golden Eagle Protection Act (16 USC 668-668d); however, no bald eagles are known to nest on HAFB.

The northern long-eared bat, which has the potential to be located throughout Massachusetts, was listed as threatened under the Endangered Species Act on 1 April 2015. However, with the ongoing spread of deadly white-nose syndrome increasing the risk of extinction, the USFWS reclassified the Northern long-eared bat as endangered in November 2022, effective as of 30 January 2023. The species has the potential to be located throughout Massachusetts. Northern long-eared bats spend winters hibernating in caves and mines with constant temperatures, high humidity and no air currents. Suitable summer habitat consists of forest and woodland habitat, and also may include adjacent edges of agricultural fields, old fields, and pastures (USFWS, 2014).

The forested and wooded areas within Parcels 1, 2, and 3 could potentially provide summer habitat for northern long-eared bats. However, a bat acoustic survey conducted on HAFB was unable to confirm the presence of northern long-eared bat on the property (Schwab, 2018). On 29 September 2023, HAFB extended through March 2024 its original determination, dated 2 October 2018, that proposed undertakings within the boundaries of the base will have "no effect" on the federally listed northern long-eared bat (see Attachment B).

On 17 December 2020, the USFWS (2020) announced that listing the monarch butterfly as endangered or threatened under the Endangered Species Act is warranted but precluded by the Service's work on higher-priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. With this decision, the monarch butterfly was listed as a candidate species under the Act and its status will be reviewed annually until a listing decision is made. Although candidate species receive no statutory protection under the Endangered Species Act, the USFWS encourages cooperative conservation efforts for these species. Monarch habitat is varied—encompassing fields, roadside areas, open areas, wet areas, and urban gardens—and, as such, potential habitat for the species occurs on and within the immediate vicinity of both HAFB and the proposed lease parcels.

3.4.2 Anticipated Environmental Impacts

3.4.2.1 No Action

The No Action alternative would not result in any short- or long-term, direct, indirect, or cumulative impacts to vegetation, wildlife, or threatened/endangered species on HAFB or the MIT LL facility complex. Implementation of this alternative would have no significant impacts on biological resources.

3.4.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No short- or long-term, direct, indirect, or cumulative impacts to biological resources would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts on biological resources.

3.5 CULTURAL RESOURCES

3.5.1 Affected Environment

The HAFB region contains areas of prominent prehistoric and historic importance. There are hundreds of properties listed in the records of the MHC for the four surrounding towns alone. HAFB is located to the north of Minute Man National Historical Park, a National Park Service-administered property encompassing significant properties associated with the start of the American Revolution. In addition, there are other significant places, located within HAFB, that served as naturally fortified positions from which the militia fired on the British.

Four prehistoric archaeological sites are recorded adjacent to the base, and several small prehistoric sites (temporary camps, chipping stations, and lithic workshops) have been reported in the vicinity of the base. The 1997 Phase I Archaeological Survey concluded there are no areas of the main base at HAFB that contain prehistoric resources (Parsons, 1998; HAFB, 2010d).

3.5.1.1 Historic Resources

A survey from PAL recommended Building F be classified as Historic-Eligible. Building F is located in the northern portion of Parcel 1. Since its original construction, there have been only a handful of small modifications made to the building, in the form of a few small windows that were cut into the concrete bunker. The base's historical usage and Cold War era significance outweigh any physical alterations that have been made. The historic classification was recommended for this building due to its important research and development mission, the MIT LL Semi-Automatic Ground Environment Air Defense System (SAGE) project. The SAGE project was the nation's first air defense system and was the impetus for the establishment of Lincoln Laboratory (MIT LL, 2023b). Building F was recommended as individually eligible for the National Register of Historic Places (NRHP) under Criteria A and C at the national level. Under criterion A, the SAGE project building (Building F) is significant for its association with Cold-war era defense research, and development of air defense systems and solid-state computers. Under criterion C, the SAGE project building is regarded as a distinctive architectural and engineering form developed for a specific mission and is valuable for understanding the Air Force's Cold War emphasis on short-warning response time technology (PAL, 2003).

The Flight Facility, located within Parcel 5, has also been regarded as a building of historical significance. The building is a Kuljian "Double Cantilever" type airplane hangar and has been recommended as individually eligible for historical significance under Criterion Consideration G and C for its distinctive engineering (PAL, 2003).

The Air Force Cambridge Research Laboratories (AFCRL) Historic District encompasses Parcel 3 as well as parts of Parcels 1 and 2 (Figure 3-4). The AFCRL had developed a system that digitized data into code for transmission on phone lines. The first test occurred at Hanscom Field in September of 1950. The North Korean invasion of South Korea further heightened the United States' concern for national air defense readiness. DAF General Vandenberg wrote a letter to the President of MIT regarding the formation of a joint laboratory, and recommended the lab be located in Cambridge. However, the President of MIT felt the formation of a lab dealing with classified information on campus was not within the maintained academic integrity of the school. In 1950 the DAF Air Research and Development Command selected Hanscom Field for the location of the AFCRL. The DAF constructed the core buildings of the AFCRL

Phillips Laboratories between 1954 and 1956 as an integrated lab and office complex. The facility was intended to be an exemplary Modern Style research complex modeled on International Style precedents. Additional laboratory and office buildings were added to this complex in 1961, 1971, 1986, and 1991. The buildings in the Katahdin Hill area were constructed for AFCRL, on an as-needed basis, for activities for which there was no room in the monumental Phillips Laboratories buildings or had specialized spatial or equipment needs. These laboratories were subsequently renamed, first as the Air Force Geophysics Laboratory and then as two Directorates of the Air Force Research Laboratories. All of these lab activities were transferred to Wright-Patterson AFB and Kirtland AFB, and most of the buildings have been demolished. As previously noted, the AFCRL activities ended in 2011.

3.5.1.2 Archaeological Resources

In 1998, Parsons Engineering Science, Inc. (Parsons, 1998) conducted a Phase I archaeological survey of 34 previously identified areas that were considered to have moderate to high potential for archaeological resources on HAFB. No cultural materials were discovered in these areas. The Massachusetts State Historic Preservation Officer, i.e., MHC, in its 22 June 1998 letter regarding this survey report, wrote "The report indicated that no significant historical or archaeological resources were encountered in the archaeological survey of the 34 areas previously determined to have moderate to high potential to contain archaeological resources." MHC concurred with this finding stating, "no further archaeological research is warranted for these surveyed areas" (MHC, 1998).

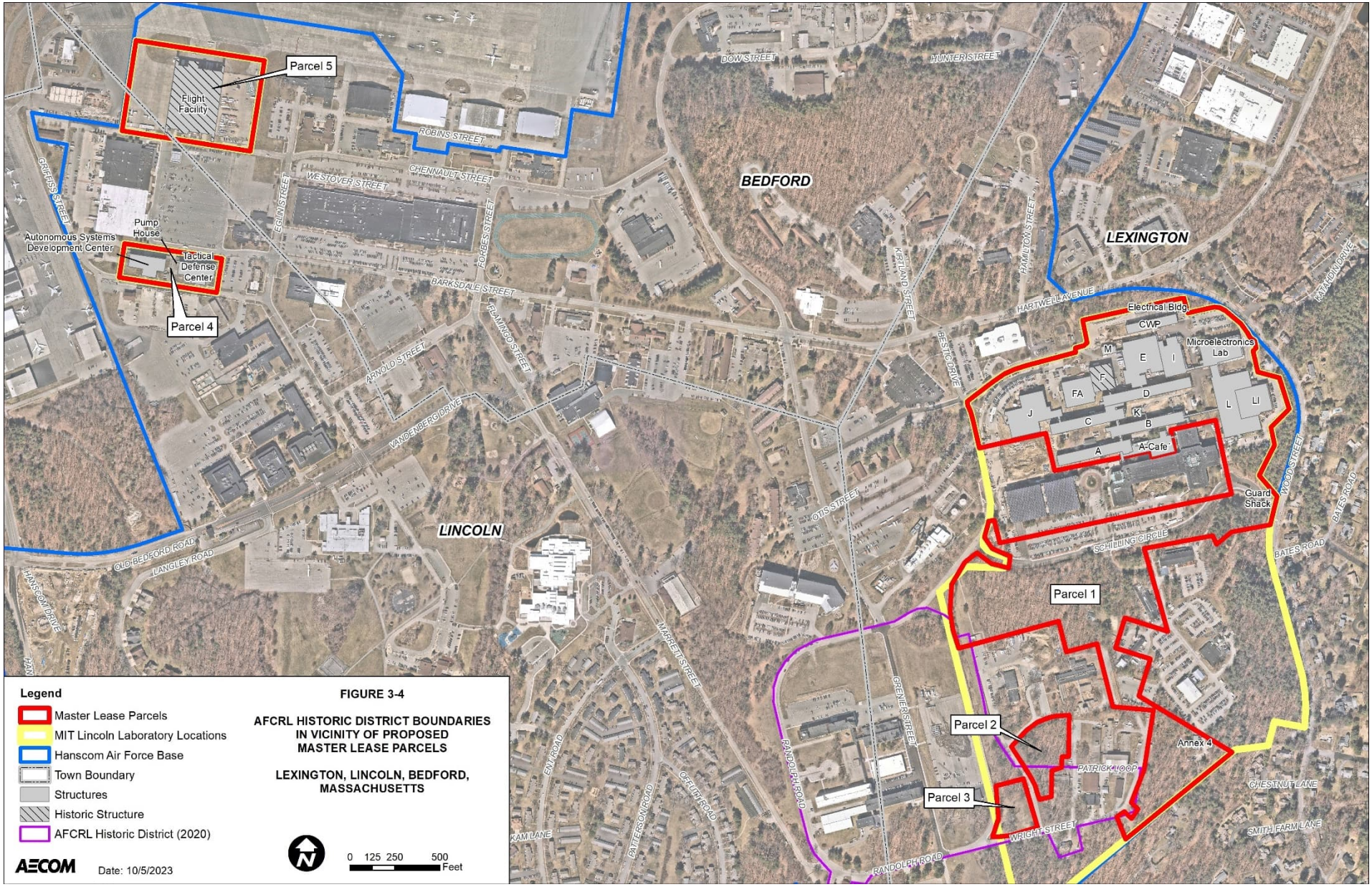


FIGURE 3-4

AFCRL HISTORIC DISTRICT BOUNDARIES IN VICINITY OF PROPOSED MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

3.5.2 Anticipated Environmental Impacts

3.5.2.1 No Action

Under the No Action alternative, no new facility would be constructed. Occupancy in the existing buildings would continue, and there would be expenditures related to operating costs and deferred maintenance; however, large scale renovations would not occur. The No Action alternative would not result in any short- or long-term, direct, indirect, or cumulative impacts to historic or archaeological resources. Implementation of this alternative would have no significant impacts on cultural resources.

3.5.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative.

In order to provide for the preservation of historic properties after transfer, the legal documents of this transaction, including the title and lease of property, will include language that ensures future actions undertaken by MIT LL will be reviewed for impacts to historic properties, including the requirement, where applicable, to resolve adverse effects.

The lease will include language similar to the following: "Lessee shall coordinate any proposal for construction, repair, or maintenance of historic properties (i.e., facilities and properties that are eligible for inclusion on the National Register of Historic Places) with the government prior to proceeding. Lessee shall assist government in developing consultation packages to the State Historic Preservation Office, including assessment of effects, in order to achieve compliance with Section 106 of the NHPA prior to undertaking any action with the potential to adversely affect historic properties." The title transfer will include preservation language similar to the following: "The Flight Facility and Building FA are eligible for listing in the National Register of Historic Places. Grantee agrees to comply with the NHPA, 36 CFR 800, as if it were a federal entity for undertakings (construction, repair, maintenance, or demolition) that have the potential to adversely affect historic properties. This provision shall survive any subsequent title transfer in perpetuity." As requested by the National Park Service in a letter dated 12 September 2023 (see Attachment A), Minute Man National Historical Park will be included as a consulting party prior to undertaking any action with the potential to adversely affect historic properties.

In addition, the lease and the title require the reversion of the property to federal government ownership at the end of the 50-year term. The exact language and specific real property instruments including such language is subject to change. However, the real property instruments will contain language to ensure compliance with applicable laws, agreements, and plans with respect to historic properties.

On 15 August 2023, HAFB submitted a letter to MHC (see Attachment A) informing the commission of the proposed Master Lease and building conveyance, and DAF's determination that as the proposed undertaking is "limited to the execution of the lease and conveyance of property, there will be ***No Adverse Effect*** to historic properties insofar as the lease and title transfer includes appropriate preservation

language." A copy of this letter also was sent to Minute Man National Historic Park. On 23 September 2023 MHC concurred with the *No Adverse Effect* determination.

On 16 August 2023, HAFB sent letters to the Tribal Nations—specifically, the Narragansett Indian Tribe, Mashpee Wampanoag Tribe, Wampanoag Tribe of Gay Head (Aquinnah)—requesting their assistance in identifying historic properties of religious and cultural significance to the tribes on the base and within the proposed lease area. HAFB has not received any responses.

Consequently, no short- or long-term, direct, indirect, or cumulative impacts would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts on cultural resources.

3.6 AIR QUALITY

3.6.1 Affected Environment

Air quality in any given location is defined by the concentration of various pollutants in the atmosphere. Air quality is determined by the type and number of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant's concentration is determined by comparing it to federal and/or state ambient air quality standards. The federal CAA, 42 U.S.C. Sections 7401–7671q provides that emission sources must comply with the air quality standards and regulations that have been established by federal and state regulatory agencies. These standards and regulations focus on (1) the maximum allowable ambient pollutant concentrations, and (2) the maximum allowable emissions from individual sources.

3.6.1.1 Criteria Pollutants and National Ambient Air Quality Standards

The USEPA sets National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, as required by the CAA (summarized in Table 3-1): ozone (O_3); nitrogen dioxide (NO_2); particulate matter equal to or less than 10 microns in aerodynamic diameter (PM_{10}) and particulate matter equal to or less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$); carbon monoxide (CO); sulfur dioxide (SO_2); and lead (Pb). O_3 is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors. The O_3 precursors are oxides of nitrogen (NO_x) and volatile organic compounds (VOCs). States may either adopt the NAAQS or establish their own more stringent standards. The Commonwealth of Massachusetts has adopted the NAAQS to regulate air pollution levels.

Areas that meet the NAAQS standard for a criteria pollutant are designated as being "in attainment" while areas where criteria pollutant levels exceed the NAAQS are designated as "nonattainment." A maintenance area is a former nonattainment area that has recently been re-designated as an attainment area. However, during the maintenance period, most of the CAA rules for a nonattainment area are still applicable to a maintenance area. In general, an attainment area is considered to have a good ambient air quality condition.

The CAA requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans, are developed by state and local air quality management agencies and submitted to USEPA for approval.

Table 3-1. Summary of USEPA NAAQS for Criteria Pollutants

Criteria Pollutant	Primary/ Secondary	Standard		Form
		Averaging Time	Level	
Carbon Monoxide	Primary	8-hour	9 parts per million (ppm)	Not to be exceeded more than once per year
		1-hour	35 ppm	
Lead	Primary and Secondary	Averaged over a rolling 3-month period	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide	Primary	1-hour	100 parts per billion (ppb)	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	Annual	53 ppb	Annual Mean
Sulfur Dioxide	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
Particulate Matter ($PM_{2.5}$)	Primary	Annual	12 µg/m^3	Annual mean, averaged over 3 years
	Secondary	Annual	15 µg/m^3	Annual mean, averaged over 3 years
	Primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
Particulate Matter (PM_{10})	Primary and Secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Ozone	Primary and Secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years

Source: USEPA, 2020

3.6.1.2 Clean Air Act Conformity

40 CFR Part 93, Subpart B, commonly referred to as the General Conformity Regulations (GCR), requires federal actions occurring in nonattainment or maintenance areas to conform to any State Implementation Plan approved or promulgated under Section 110 of the CAA. HAFB is located predominantly within the town of Bedford, Middlesex County, Massachusetts, with portions extending into the adjoining towns of Lincoln and Lexington. A portion of the town of Concord previously extended into HAFB, but that area now is within Hanscom Field. In addition, Hanscom is located in the Northeast Ozone Transport Area. The project is located in Middlesex County, Massachusetts, which is in attainment for all six criteria air pollutants, just recently meeting attainment standards for ozone.

The DAF has developed an automated screening tool known as the Air Conformity Applicability Model (ACAM) to perform a simplified GCR applicability analysis for DAF proposed projects in nonattainment or maintenance areas, and a NEPA air analysis in attainment areas. ACAM is used in conjunction with other DAF guideline documents to identify proposed actions and alternatives that would likely result in no or minimal emission increases and those that may require further air quality analysis and undergo a GCR determination.

While the GCR *de minimis* thresholds are intended to be used to perform an applicability analysis, they can also be used as a general indicator for air quality NEPA assessments. General Conformity De Minimis Thresholds, in the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide –Volume II - Advanced Assessments (AFCEC, 2020), are the maximum net change an action can acceptably emit in nonattainment and maintenance areas; these threshold values would also be a conservative indicator whether an action's emissions within an attainment area would result in significant impact. In this case, 50 tons per year (tpy) of VOC, 100 tpy of NO_x, or 250 tons per year (tpy) for each of the other criteria pollutants are indicators of potential significant air quality impacts for the Proposed Action.

3.6.1.3 Stationary and Mobile Source Emissions

New major stationary sources are subject to Prevention of Significant Deterioration (PSD) and/or New Source Review (NSR) programs to ensure these sources are constructed without significant deterioration of the air in the area. USEPA oversees programs for stationary source operating permits (Title V) and for new or modified major stationary source construction and operation. Mobile sources, such as aircraft, vehicles, or nonroad equipment, are regulated under the CAA Title II through enforcing emissions standards on sources manufactured.

HAFB maintains a Title V Operating Permit, as the base is considered a major stationary source due to its potential to emit NO_x emissions exceeding 50 tons per year; however, MIT LL facilities are not directly included within this permit. Most of MIT LL's existing facilities receive their heating from the HAFB Central Heat Plant (CHP), which is regulated as part of HAFB's Title V permit. MIT LL does not currently have a Title V permit, as it does not exceed the thresholds for being considered a major stationary source. Instead, MIT LL currently has a Non-Major Comprehensive Air Quality Plan Approval (Transmittal No. X262821, Application No. NE-14-009, issued 3 June 2015) that consolidated earlier plan approvals, applicable permits-by-rule, and an Environmental Results Program compliance certification. The primary sources of emissions at MIT LL include diesel fuel combustion for standby electrical power and natural gas combustion for heating water.

MIT LL's Non-Major Comprehensive Air Plan Approval authorizes it to operate a 2,000-kilowatt (kW) diesel generator (referred to as Unit No. 1) for emergency power. The Air Plan Approval also establishes maximum allowable facility-wide emission limitations for NO_x, CO, VOC, PM, and SO_2 in tons per month and in tons per rolling 12-month period. The permit also covers nine natural gas fired small boilers, two furnaces, and four water heaters, as well as operational processes. Annual reporting of NO_x, CO, VOC, PM, and SO_2 emissions to MassDEP is required. Annual emissions for stationary sources at MIT LL compared to annual emissions at HAFB and within Middlesex County (including mobile sources) are included in Table 3-2.

Table 3-2. Annual Criteria Pollutant Emissions at MIT LL, HAFB, and Middlesex County

	Emissions from Stationary Sources			**Emissions from Mobile Sources**
Air Pollutant	**MIT LL (tons/year in 2022)[1]**	**HAFB (tons/year in 2022)[2]**	**Middlesex County (tons/year in 2020)[3]**	**Middlesex County (tons/year in 2020)[3]**
Carbon Monoxide (CO)	1.36	27.6	16,433	94,228
Lead (Pb)	-	-	0.071	-
Nitrogen Oxides (NO_x)	4.78	44.4	4,326	7,705
Sulfur Dioxide (SO_2)	0.23	17.9	110	45
Particulate Matter ($PM_{2.5}$)	0.3 for PM	3.6	8,627	3,303
Particulate Matter (PM_{10})		4.1	23,526	5,942
Volatile Organic Compounds (VOCs)	1.37	2.5	-	-

Sources: [1]MIT LL, 2023d; [2]Air Program Information Management System (APIMS), 2022; [3]USEPA, 2020

3.6.1.4 Climate Change and Greenhouse Gases

Although the Earth's climate naturally changes through time, recent scientific evidence has shown the process has been exacerbated in the past several decades, most likely due to human activities such as fossil fuel combustion and deforestation. Evidence of a changing climate includes increases in average air temperature and changes in precipitation patterns and storm intensity. This change has been attributed to an excess of greenhouse gases (GHG) in the atmosphere, which absorb solar energy and radiate it back to the Earth surface, rather than radiating solar energy back out of the atmosphere. Greenhouse gases include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons.

There are several state and federal programs regulating GHG emissions. On a national level, the USEPA Mandatory Reporting of Greenhouse Gases Rule (40 CFR Part 98) includes GHG emissions reporting requirements for large emissions sources. In Massachusetts, the Climate Protection and Green Economy Act, Massachusetts General Laws Chapter 21N, has GHG reporting and compliance requirements outlined in 310 Code of Massachusetts Regulations (CMR) 7.71, *Reporting of Greenhouse Gas Emissions*. Facilities regulated under Title V of the CAA must report GHG emissions in accordance with both regulations; therefore, HAFB reports GHG emissions, converted into one value known as a CO_2 equivalent (CO_2e), using approved factors to weigh each pollutant. The 2018 CO_2e emissions for stationary and mobile sources

at the base, as reported to USEPA and MassDEP, were approximately 28,700 metric tons per year (APIMS, 2018).

3.6.2 Anticipated Environmental Impacts

3.6.2.1 No Action

Under the No Action alternative, no new facilities would be constructed. Occupancy in the existing buildings would continue, and there would be expenditures related to operating costs and deferred maintenance; however, large scale renovations would not occur. Total air emissions from MIT LL would be expected to remain at volumes similar to those generated under current operations. Implementation of this alternative would have no significant impacts on air quality.

3.6.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same and would not increase air emissions compared to current operations and the No Action alternative. No short- or long-term, direct, indirect, or cumulative impacts to air quality would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts on air quality.

The CAA requires that actions of federal agencies or federally supported activities should not: 1) cause or contribute to any new air quality standard violation; 2) increase the frequency or severity of any existing standard violation; or 3) delay the timely attainment of any standard or any required interim emission reductions or other milestones. Under Section 176(c) of the CAA, a project is in "conformity" if it corresponds to the State Implementation Plan's (SIP's) purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving the expeditious attainment of the standards. USEPA published final rules on general conformity (40 CFR Parts 51 and 93 in the Federal Register on 30 November 1993, and revised on 24 March 2010) that apply to federal actions in areas in non-attainment for any of the criteria pollutants. A formal conformity determination is required when the annual net total of direct and indirect emissions from a federal action occurring in a non-attainment area equals or exceeds the applicable *de minimis* levels.

The project is located in Middlesex County, Massachusetts, which is in attainment for all six criteria air pollutants, just recently meeting attainment standards for ozone. On 12 March 2008, a new 8-hour ozone standard became effective and the previous, 1997 8-hour ozone standard was revoked on 13 February 2017. Middlesex County achieved attainment for ozone when the 1997 ozone standard was revoked. However, because the area is still considered a maintenance area for ozone, the emissions of VOC and NO_x must be accounted for as they are precursors for the formation of ozone.

The Proposed Action is a real estate transaction, and MIT LL operations under the Proposed Action will not increase air emissions compared to current conditions and the No Action alternative. As such, although the action will occur in an area that is in maintenance for ozone, the action is exempt from conformity requirements under the provisions of CAA implementing regulations (40 CFR Section 93.153(c)(2)(x-xi)).

As noted in EA Section 1.2, additional NEPA analysis will be required for any modifications to existing facilities or construction of new facilities. When that NEPA analysis is required, a conformity applicability and air quality impacts analysis will also be required to comply with NEPA and CAA requirements.

3.7 NOISE

3.7.1 Affected Environment

The primary source of noise in the vicinity of HAFB and MIT LL results from normal base operation and military and civilian aircraft usage at Hanscom Field. Even though military flights currently comprise just 1.4 percent of the flights from Hanscom Field, military flights tend to be noisier aircraft, as military aircraft are exempt from the noise abatement measures applicable to civilian aircraft. In 2022, military aircraft generated 7 percent of Hanscom's total noise energy despite representing less than 2 percent of the aircraft activity. Military activity has consistently represented less than 2 percent of the activity during the past four decades, while its contribution to the noise energy has ranged from 1.8 percent to 47 percent (Massport, 2023).

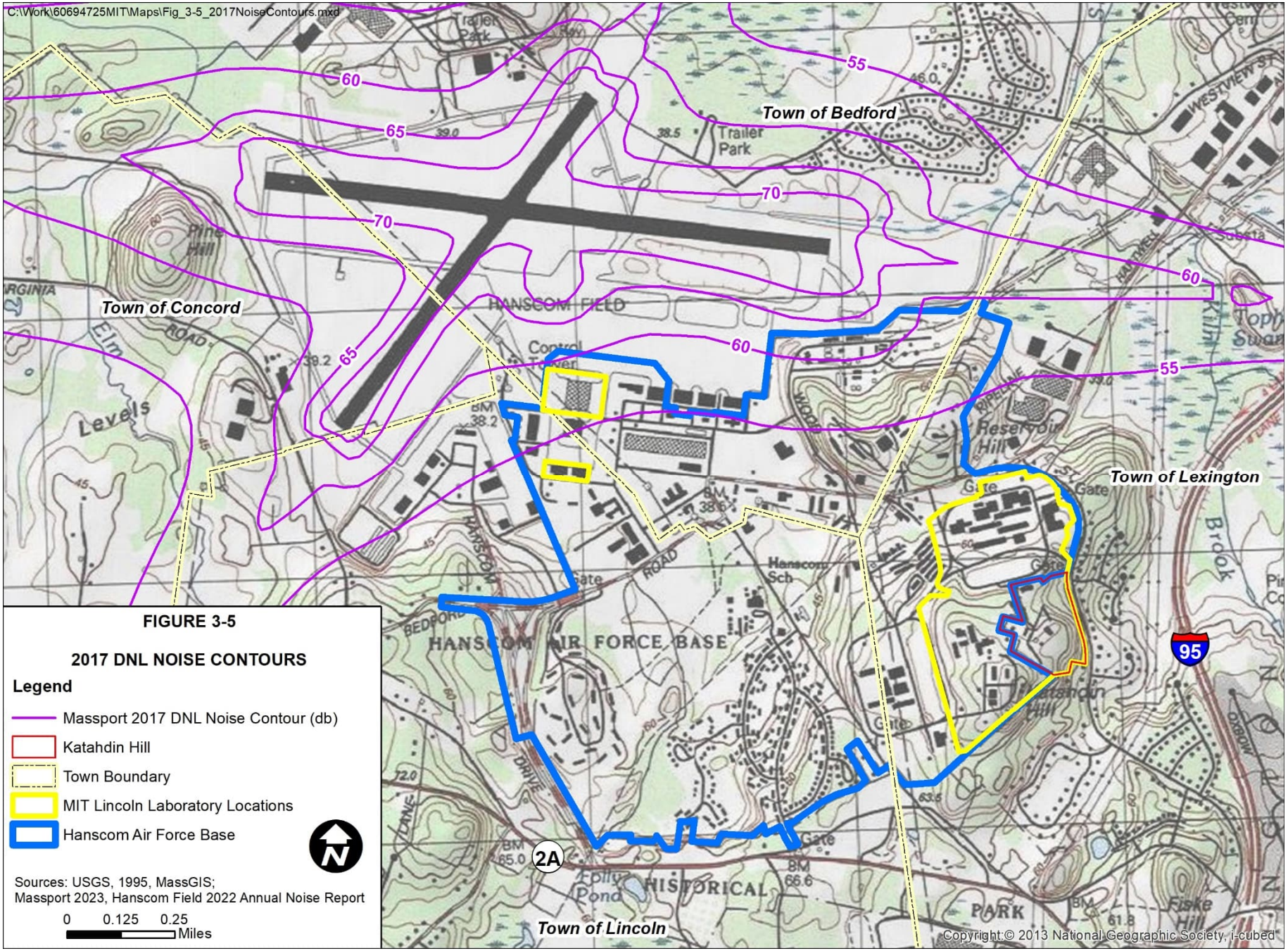
Ground-based vehicle operations at HAFB consist mainly of privately-owned vehicles and government vehicles. Government-owned vehicles include on-road maintenance and utility vehicles and off-road equipment such as sweeper vacuums, cranes, lawn mowers, and forklifts (HAFB, 2003). Noise generated independent of aircraft flight at HAFB, such as maintenance and shop operations, ground traffic, and construction, is comparable to the noise generated in the surrounding communities.

The purpose of the Air Installations Compatible Use Zones (AICUZ) program is to achieve compatibility between air installations and neighboring communities by protecting the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations. DoDI 4165.57, *Air Installations Compatible Use Zones*, Table 2 provides land use compatibility recommendations based on standard land use coding manual (SLUCM) codes and the A-weighted[2] day-night average sound level (DNL) or community noise equivalent level (CNEL) noise areas on and around air installations. The table recommends all SLUCM categories are compatible with A-weighted DNL/CNEL levels less than 65 decibels (dB).

At HAFB, where no flying mission exists and the airfield is owned and operated by Massport, AICUZ do not apply (HAFB, 2017). In place of AICUZ, Federal Aviation Administration standards apply. The Massport (2023) *Hanscom Field 2022 Annual Noise Report* observes that as overall operations have decreased at Hanscom Field over the last several years, both operations and noise remain well below historical peaks.

The associated noise contours generally reflect proximity to the runways. As illustrated by Figure 3-5, which shows 2017 DNL noise contours, the area of highest decibel readings (85 dB and higher) is located in the immediate vicinity of the runways. Extended areas of higher level noise occur along the aircraft approach and departure corridors. The DNL 65 dB contour is entirely within Hanscom Field property.

[2] A-weighted is an expression of the relative loudness of sounds in the air as perceived by the human ear where the dB values of sound at low frequencies are reduced. By contrast, unweighted dB make no correction for audio frequency. (DoDI 4165.57)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55
60
65
70
Town of Bedford
Town of Concord
Town of Lexington
Town of Lincoln
HANSCOM FIELD
HANSCOM AIR FORCE BASE
Trailer Park
Pine Hill
Levels
Elm
ROAD
Reservoir Hill
Gate
Hanscom Sch
Fiske Hill
PARK
HISTORICAL
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FIGURE 3-5
2017 DNL NOISE CONTOURS
Legend
Massport 2017 DNL Noise Contour (db)
Katahdin Hill
Town Boundary
MIT Lincoln Laboratory Locations
Hanscom Air Force Base
N
Sources: USGS, 1995, MassGIS;
Massport 2023, Hanscom Field 2022 Annual Noise Report
0 0.125 0.25
Miles

Parcels 1, 2, and 3 are located a considerable distance from the runways; therefore, aircraft operations do not contribute significantly to existing ambient noise levels. Parcels 4 and 5 are located within areas that have average ambient noise levels less than 55 dB and between 55 and 60 dB, respectively (Massport, 2023).

3.7.2 Anticipated Environmental Impacts

3.7.2.1 No Action

Under the No Action alternative, no new facilities would be constructed. Occupancy in the existing buildings would continue, and there would be expenditures related to operating costs and deferred maintenance; however, large scale renovations would not occur. The No Action alternative would not result in a change in the ambient noise levels at HAFB or MIT LL. Implementation of this alternative would have no significant impacts to the noise environment.

3.7.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No short- or long-term, direct, indirect, or cumulative impacts to noise would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts to the noise environment.

3.8 INFRASTRUCTURE

3.8.1 Affected Environment

The existing utility services and associated infrastructure at HAFB and MIT LL, in the vicinity of the proposed Master Plan parcels, are discussed in this section based on the 2017 HAFB IDP (HAFB, 2017) and review of the GIS data layers in the HAFB geodatabase. The utilities include water, wastewater, electricity, telephone, fiber optic, natural gas, and steam and chilled water. Fire protection is also discussed in this section.

3.8.1.1 Water Supply

Nearly the entire potable water supply to HAFB, as well as MIT LL, is provided by the town of Lexington. Lexington receives its water from the Massachusetts Water Resources Authority (MWRA), for which the Quabbin Reservoir serves as the primary source. Water is distributed throughout HAFB via 2- to 16-inch diameter lines that run throughout a majority of Parcel 1's northern and southern sections. Parcel 2 and Parcel 3 have no water supply pipes running underneath them but do have a handful running along their perimeters. For Parcels 4 and 5, water supply pipes run through and along the perimeters of both parcels.

3.8.1.2 Wastewater

The wastewater system on HAFB includes two pumping stations, the lower station collects approximately 75 percent of the daily flow on base, and the upper station collects the remaining daily flow. HAFB discharges wastewater to the MWRA sewerage system. MIT LL has a Sewer Use Discharge Permit issued

jointly by the MWRA and the town of Lexington, since MIT LL discharges wastewater to the MWRA sewerage system via the town of Lexington sewerage system. The permit includes self-monitoring, discharge limitations, mandated sampling locations, analysis, reporting/notification, and other requirements (Permit # 17100088, issued on 17 May 2022).

3.8.1.3 Storm Drainage

The majority of surface runoff from HAFB enters a subsurface system of eight, 5-foot diameter culverts and ultimately discharges into the Shawsheen River, located along the northeastern boundary of the base. Surface runoff from the eastern portion of the base drains eastward into Kiln Brook, eventually discharging into the Shawsheen River, which flows northeasterly to converge with the Merrimack River in North Andover/south Lawrence. The southern portion of HAFB drains beneath the fenced boundary of the base, under Airport Road, through the Battle Road Unit of Minute Man National Historical Park, and under Route 2A (North Great Road) before ultimately discharging into one of the reservoirs that serves as water supply for the city of Cambridge. HAFB employs three detention basins and one holding tank on the base for the settling and storage of stormwater runoff (HAFB, 2017).

Stormwater infrastructure runs underneath a majority of Parcel 1's northern sector as well as portions of its central and southern sectors. Parcel 2 has no storm drains running underneath but does have a select few catch basins throughout its perimeter. Parcel 3 has a storm drain running along its eastern border, as well as having several manholes and catch basin/curb inlets. Storm drains run underneath most of Parcel 4 and portions of Parcel 5.

3.8.1.4 Electricity

The existing electrical system is owned and operated by HAFB. HAFB obtains its power from Eversource's Station 320. Electrical service is provided at 14.4 kilovolts (kV) through three sets of cables to the base substation. Nearly all transmission lines within HAFB are underground. The annual capacity is approximately 151 million kilowatt hours (kWh), roughly three times the recent (FY15) annual demand (HAFB, 2017). HAFB's electrical demand is well below the capacity of the transmission lines on base (HAFB, 2017). HAFB has implemented a base-wide Energy Management Control System (EMCS), which includes monitoring and control of energy use.

MIT LL receives electrical power directly from Eversource via a substation separate from HAFB. MIT LL has one large emergency generator capable of producing 2,000 kW, two medium-sized generators (rated at 800 kW and 500 kW), along with 31 medium-sized generators (each engine smaller than 450 kW) adding an additional nearly 3,000 kW of capacity. Currently, stationary equipment comprises 24 diesel and one gas generators. MIT LL has certified compliance with Environmental Results Program Certification requirements, pursuant to 310 CMR 7.26(42), *Emergency Engines and Emergency Turbines*, for two portable diesel generators. These generators were installed for temporary use, but will exceed 12 months service in the same location and would then be considered stationary sources of air pollutants, bringing the total number of stationary diesel generators to 26. One older model was certified as a Tier 3 engine and one as a Tier 4 engine under the Environmental Results Program. Also, in November 2019, MIT LL obtained a new Air Quality Plan Approval for the Generator Cluster 1 project. When complete, this project would add three new 1,000 kW Tier 4 Final diesel generators, while removing 17 of the existing generators. The Generator Cluster 1 project is on hold pending the Master Lease. There also will be two new Tier 2

generators for CSL-MIF that will be certified in compliance with the 310 CMR 7.26(29), *Compliance Certification Requirement*, as well as the potential for additional generators associated with the EPF.

3.8.1.5 Telecommunications

In addition to standard dial-up telephone service, HAFB and MIT LL have a fiber optic backbone that services much of the developed portions of HAFB and the MIT LL campus. Existing telephone and fiber optic lines are located in the vicinity of Parcels 1, 2, and 3. Similarly, existing telephone and fiber optic lines also are located in the vicinity of Parcels 4 and 5.

3.8.1.6 Natural Gas

The natural gas infrastructure is under a mixed ownership. Part of the system is owned and operated by National Grid; the other part is owned by HAFB. In 2019, the base completed a project to tie into the Kinder Morgan transmission pipeline that runs through the base (HAFB, 2017; HAFB, 2019c; HAFB, 2020). This new tie-in has improved overall capacity, as the lines were sized to accommodate 25 percent more flow than the expected peak demand. Interruptible natural gas is provided to the HAFB CHP for steam and chilled water production. Firm-supply natural gas is distributed to base housing for domestic hot water heaters, gas ranges, and dryers. For FY22, the total natural gas usage at HAFB was approximately 773,000 dekatherms and, for FY23, the total estimated usage was approximately 679,000 dekatherms.

Natural gas lines run underneath a small portion of Parcel 1's northern sector including adjacent to buildings B, C, E, F, FA, and J, and A-Café. Natural Gas lines run near Parcels 2 and 3 but never cross the parcel boundaries. For Parcel 4, the nearest natural gas line is located approximately 40 feet from the northeast corner of the parcel, west of Eglin Street. A natural gas line runs along the southern perimeter of Parcel 5.

3.8.1.7 Heating and Cooling

Steam heat is provided by the HAFB CHP to approximately 70 percent of the base (excluding housing), including much of the MIT LL campus, through nearly 40,000 feet of steam lines, which are mostly underground (HAFB, 2017). HAFB has recently upgraded steam supply lines to MIT LL (HAFB, 2014a). In FY2015, MIT LL facilities used approximately 55 percent of all steam generated (150 million pounds per year).

Although the four boilers at the HAFB CHP have a combined rated capacity of 1.4 billion pounds of steam per year, the actual capacity is much lower. Currently, during winter months, there is insufficient natural gas to run the boilers and HAFB must run one of its boilers on #6 fuel oil. According to HAFB personnel, the steam system is nearing capacity, and because of this, new buildings are not tied into the steam system when brought online. The steam plant will benefit from the recently completed tie-in to the existing Kinder Morgan gas pipeline (HAFB, 2017). In addition, HAFB recently completed construction of a new CHP adjacent to the existing steam plant and this facility was brought on-line in September 2021.

The HAFB CHP also generates chilled water for the base. The existing chilled water system is underutilized and there exists the capacity to supply chilled water to new projects (HAFB, 2017). However, MIT LL has a separate CWP located on HAFB that services the MIT LL campus.

3.8.1.8 Fire Protection

The fire station is located northwest of the MIT LL campus. The HAFB Fire Department performs firefighting and/or rescue for all structures, both military and civilian. The Fire Department also performs hazardous material response and stabilization, and confined space rescue. In addition to providing emergency response for all HAFB facilities and MIT LL, the Fire Department also provides mutual aid for surrounding communities (including Bedford, Lincoln, Lexington, and Concord), which likewise provide mutual aid support to the HAFB Fire Department. The Massport fire station on Hanscom Field performs firefighting and/or rescue for all aircraft.

3.8.2 Anticipated Environmental Impacts

3.8.2.1 No Action

The No Action alternative would result in the continued occupancy of aging, over-crowded facilities on the MIT LL facility complex. As there would be no new construction, there would be no change or additional demand on existing infrastructure within MIT LL or HAFB. The No Action alternative would not result in any short- or long-term, direct, indirect, or cumulative impacts to utilities or stormwater runoff on HAFB or the MIT LL facility complex. Implementation of this alternative would have no significant impacts to infrastructure.

3.8.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No short- or long-term, direct, indirect, or cumulative impacts to infrastructure would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts to infrastructure.

3.9 TRANSPORTATION

3.9.1 Affected Environment

Vehicular traffic enters HAFB and/or MIT LL via one of the following control points:

- Gate 1 (Sartain Gate; formally Vandenberg Gate)
- Gate 2
- Gate 3 (Wood Street)
- Gate 3A (Schilling Gate)
- Gate 4 (Ruiz Gate; formally the Hartwell Gate/Barksdale Gate)

Both Gate 3 and Gate 3A, which is closed with no timeline as to when it will be reopened, are located within proposed Master Lease Parcel 1.

The road network on HAFB (and MIT LL) consists of major/minor arterials, collectors, and local streets. The major arterials include:

- Barksdale Street from the Sartain Gate to Eglin Street
- Eglin Street from Barksdale Street to Vandenberg Drive
- Vandenberg Drive from the Sartain Gate to Marrett Street
- Marrett Street from Vandenberg Drive to Barksdale Street

3.9.1.1 Traffic

Traffic congestion in the vicinity of the base primarily occurs during the peak morning and late afternoon/early evening, as workers arrive and depart via the local and regional highway system. HAFB commuters primarily use Route 2A and Route 4/225 to access Hanscom Drive and Hartwell Avenue to enter the base; both of these state routes interchange with the Route 128/I-95 beltway that rings the Boston area and connects to other radial expressways. These routes are also used by commuters from the area towns, as well as others accessing the many industrial/office parks and commercial businesses in the area.

Based on traffic counts undertaken during a Wednesday in July 2009, approximately 60 percent of the morning traffic entering the base or MIT LL uses the two eastern gates (Ruiz and Wood Street). Despite having lower traffic counts, Sartain Gate experiences traffic queuing, because visitors and trucks must stop at the gate or the adjacent visitor center for pass clearances (HAFB, 2010b). The July 2009 counts were conducted during the morning and evening peak periods, between the hours of 6:00 AM and 9:30 AM, and between 3:00 PM and 6:00 PM, respectively.

A more recent traffic study was conducted at six locations on base and six locations off base, with traffic counts in September 2020, but not including the gates (HAFB, 2021, Appendix C, Transportation Report). Whereas the July 2009 counts were conducted during the morning and evening peak periods, the September 2020 counts were conducted overnight, between the hours of 10:00 PM and 5:00 AM, to capture the off-peak hours of Gate 1. Additionally, to account for the sharp decline of motor vehicle traffic during the COVID-19 pandemic, the traffic volumes based on the September 2020 counts were upwardly adjusted by 28.5 percent to approximate 'normal' existing conditions. For these reasons, as well as because the July 2009 and September 2020 traffic counts evaluated different intersections on HAFB, the findings of the two traffic studies cannot be compared to determine whether on-base traffic levels had changed over the intervening years.

However, MIT LL personnel counts in the last year, based on badge swipes, indicate that about 2,600 personnel a day are on campus. This value represents an approximately 25 percent decrease in personnel, and a contemporaneous reduction in traffic, compared with the 2019, pre-COVID average count of about 3,500 personnel. Because the MIT LL Flexible Work Procedure, in effect since June 2022, allows hybrid, virtual, and remote work options dependent on employee job category and work function, and organization scope of work and mission needs, current personnel numbers are expected to remain stable at about 2,600.

MIT LL is accessible to Boston via the Massachusetts Bay Transportation Authority (MBTA) public subway/bus system. The MBTA 62/76 bus goes directly to MIT LL and is a popular transit route. MIT offers discounted passes to employees. This bus has bicycle racks and can accommodate commuters choosing mixed transit and cycling transportation options to and from work. Additionally, the MIT LL Travel Office operates a shuttle service between the MIT campus in Cambridge and the MIT LL campus. The shuttle makes approximately six round trips per workday, with departures staggered every two hours

between 7:00am and 5:15pm. Usage of these shuttles buses helps to offset car trips between those areas and offers additional low-carbon commuting options for employees.

Many MIT LL employees bike to/from work. The Minuteman Bikeway, connecting to the MBTA Alewife Station in Cambridge, provides an easy way for bicyclists, as well as pedestrians, to travel to subway and bus lines, serving to reduce automobile traffic in the area. The Minuteman Bikeway, which spans approximately 10 miles, is collectively managed and maintained by the four communities it passes through (Bedford, Lexington, Arlington, and Cambridge) and passes close to HAFB where it crosses Hartwell Avenue. MIT LL has been participating in the MassCommute Bicycle Challenge since 2008 and has garnered first or second place participation for companies in its class (organizations of 3,000 to 4,999 employees) each year. In 2019, MIT LL employees won first place among participating businesses by biking 7,881 miles during Bay State Bike Week, held 11 to 19 May, reflecting a strong bike culture within the MIT community (MassCommute Bicycle Challenge, 2019). MIT LL also won first place among businesses in 2018. MIT LL has also received awards for outstanding participation and corporate bicycle services, reflecting its ongoing commitment to promoting bicycling as a commuting option and fitness activity (MIT LL, 2011a). MIT LL has historically been designated as a "gold-level" Bicycle Friendly Business by the League of American Bicyclists for its support of employees biking to work and is pursuing platinum level designation in Fall 2023 (MIT LL, 2023c). Covered bicycle parking is provided on the main level of the Parking Garage, as well as three other covered areas around the facility.

Between the Minuteman Bikeway and HAFB, Hartwell Avenue includes bicycle lane access, for which MIT LL contributed funding to support a traffic study for in 2008. There are also sharrows (i.e., a shared-use marking - a white bicycle painted directly on asphalt) on Wood Street, which was advocated for by MIT LL commuters.

3.9.1.2 Parking

There is a lack of well-marked, easily accessible parking areas in some areas on HAFB. Although most buildings have a parking lot nearby, parking spaces are not always located in areas coinciding with the highest number of employees. A comprehensive parking study was conducted within MIT LL and adjoining portions of HAFB in October and November 2012 (MIT LL, 2013). Seven distinct areas were surveyed, with a total official capacity of 4,097 spaces (MIT LL, 2013). A maximum of 3,290 vehicles were observed during any single two-hour observation period, for an effective parking utilization rate of approximately 80 percent of official capacity (which occurred between 11 AM and 1 PM). However, five of the seven areas (Parking Garage, South Lab, C/J-FA-Brown, CWP-ML-L, and Katahdin Hill) were observed to be near, at, or over capacity during midday periods, and over 200 vehicles were observed in non-designated or "self-created" spaces (MIT LL, 2013). These latter vehicles often compromised vehicle and pedestrian safety, as well as emergency access, by parking in fire lanes, islands, and circulation aisles. Meanwhile, parking lots to the west of Bestic Drive operated at less than 75 percent capacity; and the Lower AFRL parking lot reflected utilization less than 20 percent (MIT LL, 2013). Subsequent to the 2012 parking study, approved remote, virtual, and hybrid work has mitigated many of the parking issues.

Walking distance observations conducted as part of the parking study validated that workers are willing to walk approximately 6 minutes from their parked vehicles to their offices (MIT LL, 2013). Based on this walking distance and as the MIT LL population has fluctuated within a range of between 3,500 and 4,500

employees over the past several years, sufficient parking capacity exists within proximity to the overall study area to accommodate employee parking.

3.9.2 Anticipated Environmental Impacts

3.9.2.1 No Action

As the No Action alternative would leave the status quo situation as is with no change and, for the most part, operations would remain in the current buildings and facilities would not be improved beyond remedying deferred maintenance, the alternative would not alter traffic or parking conditions on or around HAFB or MIT LL. Congested traffic conditions in the vicinity of the base and localized parking shortages within the MIT LL facility complex and portions of HAFB would be anticipated to continue. The No Action alternative would not result in any change in short- or long-term, direct, indirect, or cumulative impacts to traffic or parking on or in the vicinity of HAFB or the MIT LL facility complex. Implementation of this alternative would have no significant impacts to transportation.

3.9.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. The Proposed Action would not alter traffic or parking conditions on or around HAFB or MIT LL. Congested traffic conditions in the vicinity of the base and localized parking shortages within the MIT LL facility complex and portions of HAFB would be anticipated to continue. No change in short- or long-term, direct, indirect, or cumulative impacts to traffic or parking on or in the vicinity of HAFB or the MIT LL facility complex would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts to transportation.

3.10 SOLID WASTES AND HAZARDOUS MATERIALS AND WASTES

3.10.1 Affected Environment

HAFB currently has an Integrated Solid Waste Management Program that includes a Waste Management Plan, a Qualified Recycling Plan, an Environmental Management System, a Hazardous Materials Operation Plan, and a Hazardous Waste Management Plan (HAFB, 2019a). This section describes the use/location of hazardous materials, solid waste management practices, the environmental remediation program, and the storage of fuels on HAFB and/or MIT LL.

3.10.1.1Hazardous Materials and Wastes

Hazardous waste generated on HAFB primarily comes from the operation and maintenance activities of the 66th Air Base Group (ABG). Hazardous wastes, including adhesives, sealants, greases, waste paint and thinners, solvents, and corrosive cleaning compounds, are accumulated at satellite accumulation points (SAPs) and transferred to the 90-day accumulation site, with final disposal off base. HAFB has both a Hazardous Waste Management Plan and a Hazardous Materials Operation Plan, targeted at reducing the purchases of industrial toxic substances, eliminating the purchase of ozone depleting chemicals, and reducing the amount of hazardous waste for disposal.

MIT LL Facilities Services Department Hazardous Materials Group coordinates disposal of all MIT LL facility hazardous wastes. The HAFB Hazardous Waste program does not oversee the MIT LL Hazardous Waste program. The MIT LL 244 Wood Street, Lexington facility is registered with MassDEP and USEPA as a Large Quantity Generator of RCRA-regulated hazardous waste with EPA ID # MAD001424985.

Due to the age of facilities at HAFB and MIT LL, asbestos-containing materials (ACMs) are commonly encountered and estimated to be present in 80 percent of the buildings.

At MIT LL, the receipt, storage, issuance, procurement, use, and disposal of hazardous materials are in accordance with all applicable laws and regulations. A list of hazardous chemicals for each work area is compiled and updated annually. When new hazardous chemicals are received, they are added to the list, and chemicals no longer in use for that work area are deleted. The list includes the names of the chemical as given on the label and Safety Data Sheets (SDS; formerly Material Safety Data Sheets), the manufacturer, the use/storage location, Chemical Abstracts Service Registry Number if assigned, and the planned maximum quantity to be kept in inventory (MIT LL, 2011b). The database is maintained by the MIT LL Environmental Health and Safety (EHS) Office and updated annually.

Annually, Superfund Amendments and Reauthorization Act (SARA) Title III Hazardous Chemical Inventory reporting is conducted for regulated SARA chemicals to meet the requirements of the Emergency Planning and Community Right-to-Know Act of 1986. Inventory location and quantity information is updated for the chemicals on this list and submitted to the local fire departments and local/regional emergency planning committees and state emergency response commission. This inventory is coordinated with the EHS and SARA representatives for each lab area by the MIT LL EHS Office. These inventory activities help with emergency pre-planning activities and also assist in identifying possible substitution candidates for less hazardous or non-hazardous chemicals (MIT LL, 2011b).

Purchase requisitions for hazardous chemicals, biological materials, and toxic gases are routed through the MIT LL EHS Office for review and approval. Only after the EHS Office approves the purchase requisition can the Purchasing group place an order with a vendor/supplier.

There are two receiving areas for hazardous materials deliveries. Several trained, qualified, chemical materials technicians receive hazardous materials deliveries from suppliers and coordinate/handle the deliveries to user-laboratories within MIT LL. Delivery procedures and transport containers/carts used to deliver these materials to user-labs are material-dependent (e.g., Solkatronic vessels would be used for transport of highly toxic gas cylinders, secondary-containment carts would be used for transport of hazardous liquids, etc.).

Gas cylinders, including highly toxic gas cylinders, are tracked throughout the Laboratory via the HazTrack gas cylinder tracking system. Highly toxic gas storage and use areas are monitored by gas detection systems that are interlocked to gas delivery systems, connected to the building/facility emergency evacuation (fire alarm) alarm system, and supervised by the 24/7 Security Department Alarm Control Center. Most laboratory flammable gas use/delivery systems are similarly monitored.

3.10.1.2Solid Waste

HAFB is required by 310 CMR 19.000 to recycle certain items, including paper, cardboard, glass, plastic, aluminum, and metal. The base operates a solid waste transfer facility that consolidates recyclables. HAFB follows Air Force projected solid waste diversion goals of 50 percent for non-construction and demolition (C&D) debris and 60 percent for C&D debris (HAFB, 2019b). HAFB maintains a composting facility and program to reduce the cost of waste disposal and maintain an environmentally sustainable source of grounds maintenance materials. Civil Engineering Grounds Maintenance crews routinely clear compostable yard waste (i.e., leaves, fallen branches/felled trees, weeds, and other organic materials) from the grounds of the installation. Food waste is generated at sources including the commissary, HAFB restaurants, and the Sodexo Kitchen at MIT LL A-Cafeteria, and is hauled by an HAFB contractor to a composting operation at a farm in central Massachusetts.

The MIT LL Facility Services Department oversees the MIT LL waste management program, with the exception of trash hauled from South Lab and the compostable food waste from the A-Cafeteria kitchen, which are overseen by the HAFB solid waste management program. Review of recent haul reports indicates approximately 35 to 45 tons of solid waste (without recyclables) are removed monthly from MIT LL. Recyclables removed from MIT LL during calendar year 2018 included (HAFB, 2019b):

- Mixed paper (83 tons)
- Cardboard (85 tons)
- Plastic, glass, and cans (primarily food and beverage containers) (10.2 tons)
- Scrap metal (not including high value metals) (approximately 9.0 tons)
- Wooden pallets (9 tons)
- Sand and compostable materials (approximately 9 loads at 30 cubic yards per load)
- Food waste for composting (22.1 tons)

3.10.1.3Environmental Restoration Program

HAFB has historically used, generated, and disposed of numerous hazardous substances, including fuel, aromatic solvents, polychlorinated biphenyls (PCBs), and chlorinated solvents. In 1984, environmental studies identified 13 sites, related to past practices at HAFB, warranting further investigation and potential cleanup through the Installation Restoration Program (IRP), now known as the Environmental Restoration Program (ERP). Subsequent discoveries increased the number of sites to 22. Each site was evaluated using the DAF Hazard Assessment Rating Methodology (HARM), which evaluates potential receptors, waste characteristics, and migration pathways in order to determine the relative potential of uncontrolled hazardous waste disposal facilities to cause health or environmental damage. HARM scores ranged from 86 (high hazard potential) to 6 (small hazard potential). Of the 22 identified potentially contaminated sites, 14 sites require no further action and are considered closed and the remaining 8 sites are still active and are either regulated by the USEPA under CERCLA or by the Commonwealth of Massachusetts (HAFB, 2017); four of the active sites are on HAFB (as shown in Figure 3-6), whereas the other four active sites are located on Hanscom Field and thus on Massport property.

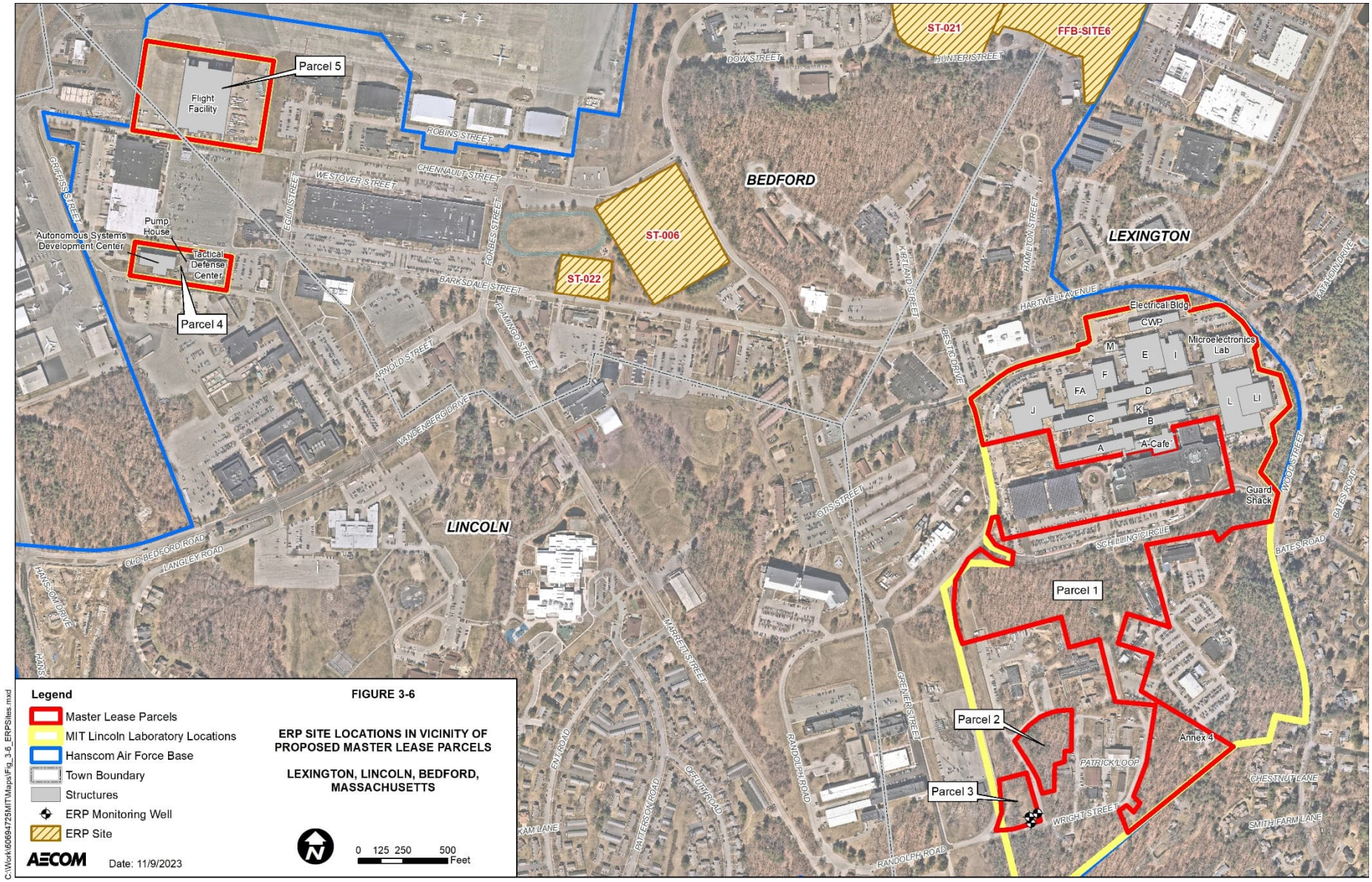

FIGURE 3-6

ERP SITE LOCATIONS IN VICINITY OF PROPOSED MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

No active ERP sites are located within the MIT LL Master Lease parcels. However, ERP Site 10 was a mercury spill at a building directly between Parcel 1 and the northwestern corner of Parcel 2. Response actions have been completed, and the ERP site has since been closed out (HAFB, 2017). A former underground storage tank (UST) release site at Parcel 3 was closed out with a no further action determination in 1998, but monitoring wells were left in place. Over a year ago, one of the three wells was found, but the other 2 were either destroyed when a nearby building was demolished or were buried under surface soil covering. The wells are slated for decommissioning as they no longer are needed. No active ERP sites are located near Parcel 4 or Parcel 5.

3.10.1.4Stored Fuels

Gasoline, diesel fuel, waste oil, kerosene, propane, #6 fuel oil, and #2 fuel oil are stored in permitted USTs and aboveground storage tanks (ASTs) on HAFB (HAFB, 2003). The only bulk ASTs on base are used to store #6 fuel at the CHP, located just west of the MIT LL campus (HAFB, 2003). The primary fuel stored on MIT LL is #2 fuel oil used to supply the campus' emergency and non-emergency generators.

The 2018 *Hanscom Air Force Base Spill Prevention and Response Plan* (HAFB, 2018) combines a spill prevention control and countermeasure plan to prevent discharges of oil and prevent oil from reaching navigable waters and adjoining shorelines, and a hazardous waste contingency plan that details how HAFB response personnel are to respond to and recover from a spill or release of a regulated hazardous material or hazardous waste.

3.10.2 Anticipated Environmental Impacts

3.10.2.1No Action

The No Action alternative would result in the continued occupancy of the facilities on the MIT LL facility complex; however, there would be no new construction. Ongoing operations at MIT LL would continue to generate solid wastes and require the storage of fuels; the existing laboratories would continue to use hazardous materials and generate small quantities of hazardous wastes. As noted in Section 3.11.4, the *Hanscom Air Force Base Spill Prevention and Response Plan* (HAFB, 2018) details how HAFB response personnel are to respond to and recover from a spill or release of a regulated hazardous material or hazardous waste. Current operations do not have and the No Action alternative would not be expected to have any impacts on remediation of prior contamination at HAFB, and remediation would continue as part of the base's ERP.

The No Action alternative would not result in any change in short- or long-term, direct, indirect, or cumulative solid/hazardous waste or ERP impacts. Implementation of this alternative would have no significant impacts to solid wastes and hazardous materials and wastes.

3.10.2.2Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No change in short- or long-term, direct, indirect, or cumulative impacts would occur as a result of the Master Lease and building

conveyance. Implementation of this alternative would have no significant impacts to solid wastes and hazardous materials and wastes.

3.11 SAFETY AND OCCUPATIONAL HEALTH

3.11.1 Affected Environment

The MIT LL EHS Office is responsible for oversight of EHS issues and works with the MIT LL technical and administrative staff community to provide technical advice and assistance in maintaining compliance and implementing best practices. The EHS Office provides critical support in a wide range of areas from environmental sustainability and occupational safety to chemical, radiation, and biological controls. To help facilitate this process, MIT LL has implemented the MIT EHS Management System to reinforce the commitment to protecting the health and safety of its employees, visitors, and subcontractors, as well as to protecting the environment. The EHS Management System is a structured, organizational approach to environment, health and safety management, designed to drive continual EHS performance improvement. The EHS Management System establishes a set of management tools, principles, processes, and procedures that enable MIT LL to reduce its EHS impact while simultaneously supporting the laboratory's research and development program goals.

The EHS Policy states, in part, MIT LL is committed to excellence in environmental, health, and safety stewardship locally and globally. Further, the policy states MIT LL's commitment to:

- Minimize adverse environmental, health, and safety impacts of its facilities, activities and operations to protect human health and the environment.
- Achieve and maintain compliance with federal, state, and local environmental, health, and safety regulations and good practices.
- Achieve a high standard of accountability for environmental, health, and safety stewardship.
- Provide educational opportunities to reinforce the values exemplified in this policy.
- Measure and continuously improve environmental, health, and safety performance.

A primary tenet of MIT LL policy is to ensure the activities conducted, and products and services provided and used, are safe for MIT LL employees, other users, and the general public. This policy also limits the risk of damage to systems or their support equipment and requires a programmed mix of proven policies, practices, and techniques applicable to unique operations.

The MIT LL EHS Office provides environmental and safety support services to the MIT LL community in an array of related areas. Functioning under the Laboratory Safety & Mission Assurance Office (which reports to the MIT Lincoln Laboratory Director's Office), the EHS Office works in collaboration with the MIT campus EHS Office to meet MIT LL's occupational safety and health program needs and requirements, including compliance with federal (OSHA), state, local, and DAF regulations. Program areas of focus include general industrial safety (electrical safety, mechanical safety, fire safety, life safety, working at heights, etc.) chemical safety/industrial hygiene, ionizing and non-ionizing radiation safety, biosafety, emergency preparedness, and workplace ergonomics.

All new MIT LL employees and resident subcontractors must attend an initial Safety Orientation class. All individuals who engage in or oversee activities (work with potentially hazardous materials, equipment, or processes) that are regulated because of potential risks to EHS must receive training appropriate to the regulated activity. MIT LL policy requires that operational instruction of personnel include safety instruction. Instruction on the potential hazards inherent in any operation must be made part of the operations instruction program. Responsibility for ensuring personnel training resides with Group Supervisors. All MIT LL personnel performing critical tasks or controlling critical processes or potentially hazardous operations during manufacturing test, checkout, servicing, and flight training operations are trained and certified as applicable.

MIT LL provides information and training to employees on the hazards associated in their workplace and notifies employees when new hazards are introduced into their work area. Training includes methods and observations that may be used to detect the presence or release of a hazardous material in the work area (i.e., visual appearance, monitoring, and odor). Employees are informed of the location of chemical hazards in their work area, the physical and health hazards of the materials, routes of exposure and exposure limits, and the location and availability of the written hazard communication program, including the required lists of hazardous materials and SDSs. Employees are made aware of the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and/or the OSHA Laboratory Standard (29 CFR 1910.1450) as required. Employees are given an explanation to the approach for identifying hazardous materials (when shippers or other containers are subdivided, etc.), a general review of the information contained on an SDS and how to interpret the information, a general overview of how to read labels and review an SDS to obtain the appropriate hazard information. MIT LL personnel are trained in the methods for safe handling and use of hazardous materials.

Safety is an integral part of every group, division, and department within the MIT LL organization. Routine group meetings, combined with written safety notices and information from the MIT LL EHS Office, constitute the primary communication path to and from all personnel. MIT LL personnel are responsible for complying with the EHS requirements, as well as federal, state, local and DAF regulations, and are required to perform assigned tasks in a manner that ensures safety for themselves and their fellow workers. In addition, equipment and hardware systems are outfitted with interlocks, machine guards and other protective safety devices.

Spaces with toxic gases or high hazard chemicals are controlled-access spaces. Access control may utilize ID-badge proximity readers, electronic keypad, cipher-lock, or key-lock to control access. Spaces with acutely toxic gases and other highly hazardous materials are locked at all times. Other chemical areas may be unlocked whenever the area is occupied.

3.11.2 Anticipated Environmental Impacts

3.11.2.1No Action

The No Action alternative would not result in any substantial new construction, although ongoing and deferred maintenance activities would occur. Operation of the existing laboratories would continue, including activities that occur in over-crowded conditions that are not ideal for health and safety. Ongoing research and development would continue to be conducted in accordance with MIT LL EHS Policy;

however, potential further degradation of the buildings may occur, which could have a long-term impact on occupational health and safety.

The No Action alternative would not result in any change in short- or long-term, direct, indirect, or cumulative impacts to safety and occupational health on HAFB or the MIT LL facility complex. Implementation of this alternative would have no significant impacts to safety and occupational health.

3.11.2.2Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No change in short- or long-term, direct, indirect, or cumulative impacts on occupational health and safety would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts on safety and occupational health.

3.12 AESTHETICS

3.12.1 Affected Environment

Features such as runways, aircraft hangars, lights, antennae, and towers in the vicinity of Hanscom Field impart a functional aesthetic quality on the base; these aesthetic qualities are considered to be an integral part of the HAFB landscape. These basic features and airfield-related activities give the impression of an organized and functional military installation. HAFB has policies, including the Architectural Compatibility Plan, regarding the aesthetic appearance and architectural compatibility of the grounds and buildings (HAFB, 2017).

Existing vegetation and topography screen the view between the proposed Master Lease parcels and nearby off-base locations, including residential areas and the Minute Man National Historical Park.

3.12.2 Anticipated Environmental Impacts

3.12.2.1No Action

The No Action alternative would result in the continued occupancy of the aging facilities on the MIT LL facility complex. While some ongoing (and deferred) maintenance would occur, there generally would be little or no change to the exterior features of the existing buildings on HAFB. As the No Action alternative would leave the status quo situation as is with no change and, for the most part, operations would remain in the current buildings and facilities would not be improved beyond remedying deferred maintenance, no short- or long-term, direct, indirect, or cumulative impacts to the viewshed or aesthetic character of MIT LL or HAFB would be expected. Implementation of this alternative would have no significant impacts to aesthetics.

3.12.2.2Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and

improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. No short- or long-term, direct, indirect, or cumulative impacts to aesthetics would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts to aesthetics.

3.13 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.13.1 Affected Environment

The workforce at HAFB includes active duty military, military reservists, DoD civilians, non-DoD civilians, and contractors. The MIT LL population has fluctuated within a range of between 3,500 and 4,500 employees over the past several years. Table 3-3 presents the 2011 and 2021 total populations for the towns of Bedford, Lexington, and Lincoln, in which the proposed Master Lease parcels are located, and Middlesex County. Between 2011 and 2021, the populations of all three towns increased at a higher rate than did the population of the county.

Table 3-3. Total Population, 2011 and 2021

	2011 Population	2021 Population	Change
Town of Bedford	13,192	14,287	8.3
Town of Lexington	31,129	34,235	10.0
Town of Lincoln	6,480	6,941	7.1
Middlesex County	1,518,171	1,614,742	6.4

Source: United States Census Bureau, 2023, Table B01001 Sex by Age

The proposed Master Lease parcels are located within HAFB. The nearest census tract with a minority population percentage greater than 50 percent or meaningfully greater[3] than the minority population percentage for Middlesex County (33.7 percent) is tract 3583 in Lexington, which is located approximately 1.2 miles southeast of the closest of the five Master Lease parcels (United States Census Bureau, 2023, Table B03002 Hispanic or Latino Origin by Race). The nearest tract with a higher percentage of low-income residents than the low-income population recorded for the county (7.7 percent) is census tract 3681.01 in Waltham, which is located approximately 2.2 miles south-southeast of the closest Master Lease parcel (United States Census Bureau, 2023, Table B17020 Poverty Status in the Past 12 Months by Age).

3.13.2 Anticipated Environmental Impacts

3.13.2.1No Action

The No Action alternative would result in the continued occupancy of aging, over-crowded facilities on the MIT LL facility complex. The alternative would leave the status quo situation as is with no change and, for the most part, operations would remain in the current buildings and facilities would not be improved beyond remedying deferred maintenance. The No Action alternative would not result in any short- or long-term,

[3] While not defined by the CEQ, the term "meaningfully greater" has been interpreted to mean a reasonable, subjective threshold—e.g., 10 or 20 percent greater than the geographic region of comparison (Federal Interagency Working Group on Environmental Justice & NEPA Committee, 2016). The geographical unit for comparison in this analysis is Middlesex County.

direct, indirect, or cumulative impacts to socioeconomic conditions, adverse impacts to minority or low-income populations, or disproportionate environmental health or safety risks to children at HAFB or the MIT LL facility complex, nor the surrounding communities. Implementation of this alternative would have no significant impacts to socioeconomics, environmental justice, or protection of children.

3.13.2.2 Master Lease with Facilities Conveyance

The Proposed Action is a real estate transaction that would involve establishing and implementing a Master Lease between the DAF and MIT, as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. MIT LL operations under the Proposed Action are expected to be the same as under current operations and under the No Action alternative. As there would be no new construction, there would be no short-term change or additional demand for workers and construction materials, no increase in revenue generated in the surrounding area. Independent of other activities at HAFB, the Master Lease and building conveyance is not expected to result in the creation of any new jobs, and would have no impact on the population or housing of MIT LL, HAFB, or the surrounding communities.

No short- or long-term, direct, indirect, or cumulative impacts to socioeconomic conditions would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts to socioeconomics.

Implementation of this alternative would have no adverse impacts to minority populations or low income populations. Access to the Master Lease parcels would be restricted to credentialed professionals; no disproportionate environmental health or safety risks to children would occur. Therefore, the Proposed Action is consistent with the objectives of the following:

- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*

No short- or long-term, direct, indirect, or cumulative impacts to environmental justice or protection of children would occur as a result of the Master Lease and building conveyance. Implementation of this alternative would have no significant impacts to environmental justice or protection of children.

4.0 LIST OF PREPARERS

This document was prepared to fulfill the requirements of the NEPA for the Proposed Action at HAFB in Massachusetts. Other entities that provided information on an as-needed basis included MIT LL and HAFB personnel. The following persons authored and provided direct oversight for the preparation of this EA:

4.1 MANAGEMENT

Shreve-Gibb, Betsy. M.R.P. Urban and Regional Planner. AECOM. As Project Director responsible for NEPA compliance, with extensive experience preparing environmental assessments and permits, provided oversight for preparation of all sections of the EA.

4.2 QA/QC

Doyle-Breen, Jennifer. M.S. Biology. AECOM. As a technical manager responsible for environmental permitting, ecological research, and NEPA compliance, provided technical and regulatory guidance to the project team and reviewed all sections of the EA.

4.3 TASK LEADER

Petras, James. B.S. Biology. AECOM. As a Project Manager with expertise in preparing environmental assessments and impact reports for federal, municipal, and commercial entities, led the multi-disciplinary team preparing the EA.

4.4 CONTRIBUTING AUTHORS

Frankenthaler, Victor. M.S. Geography. B.S. Environmental Planning. As a senior environmental planner with expertise in natural and ecological resource evaluations, environmental restoration and impact mitigation programs, and environmental and social impact assessments, authored substantial portions of the EA.

Rickwood, Jonathan. M.Sc. Environmental Science and Policy. As a technical specialist in establishing baseline conditions, conducting impact assessments, and completing environmental permitting, authored substantial portions of the EA.

Uppalapati, Phani. M.S. Chemical Engineering. As air quality engineer with experience in environmental permitting and ambient air monitoring, provided regulatory guidance to the EA team.

Yang, Fang. M.Sc. Atmospheric Science. As a scientist with many years in air quality and noise studies using regulatory mathematic modeling methods and wind tunnel fluid modeling techniques, provided refinement of the Air Quality baseline and impact sections of the EA.

Meuse, James. M.S. Environmental Engineering. As a specialist in geographic information systems, mapping, and database management, prepared maps and graphics to support the EA.

5.0 LIST OF PERSONS CONSULTED AND/OR PROVIDED COPIES

5.1 MIT LL AND HAFB

The following MIT (including MIT LL) and HAFB personnel were consulted during the preparation of this Environmental Assessment:

MIT (including MIT LL)

- Mike Menadue, MIT LL, Manager, Capital Projects Office
- David Pronchick, MIT LL, Special Assistant for Operations
- Kriss Pettersen, MIT LL, Senior Program Manager, Capital Projects Office
- Brian Primeau, MIT LL, Head, Environment, Health, & Safety
- Joan Boegel, MIT LL, Environmental Engineer, EHS Office
- Susan Newsham, MIT LL, Contracts Services Department
- Kristin Garvin, MIT Office of General Counsel
- David Suski, MIT Office of General Counsel
- Kutak Rock, legal counsel to MIT

HAFB

- David Wong, 66 ABG/CEN, Civil Engineering, Chief of Engineering
- Renata Welch, 66 ABG/CEIE, HAFB Civil Engineering, Environmental Element Flight Chief
- Taylor O'Brien, HAFB, 66 ABG/CEIE, NEPA Program Manager & Toxics Program Manager
- Scott Sheehan, HAFB, 66 ABG/CEIE, Natural/Cultural Resources Specialist
- Michael Watkin, 66 ABG/CENPL, Base Community Planner / MILCON Programmer
- Michael Lynch, HAFB, 66 ABG/CE, Capital Asset Manager
- Patterson White, 66 ABG/CENME, HAFB Civil Engineering – Geobase Manager
- James Maravelias, 66 ABG/CEIE, HAFB NEPA Manager

5.2 PUBLIC REVIEW

The public has been offered a 30-day period to comment on this EA. A public notice was published in the *Lexington Minuteman* and the *Concord Journal* on 23 November 2023. Copies of the Draft EA and Draft FONSI were available for review and can be downloaded at the following internet link: https://www.hanscom.af.mil/About-Us/Fact-Sheets/Display/Article/379486/civil-engineering/

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Attachment A – Agency Consultation

Minute Man National Historical Park
State Historic Preservation Office, Massachusetts Historic Commission
Tribal Historic Preservation Office, Narragansett Indian Tribe
Tribal Historic Preservation Office, Mashpee Wampanoag Tribe
Tribal Historic Preservation Office, Wampanoag Tribe of Gay Head – Aquinnah

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66TH AIR BASE GROUP
HANSCOM AIR FORCE BASE MASSACHUSETTS

August 15, 2023

Mr. Scott E. Sheehan
66 ABG/CEIE
120 Grenier Street
Hanscom AFB MA 01731-1910

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director, Massachusetts Historical Commission
220 Morrissey Boulevard
Boston MA 02125

SUBJECT: Proposed Master Lease and Building Conveyance for the MIT Lincoln Laboratory Campus at Hanscom Air Force Base, Lexington, Bedford, and Lincoln, Massachusetts

Dear Ms. Simon:

The Department of the Air Force (DAF) is proposing an undertaking at Hanscom Air Force Base (HAFB) in Lexington, Bedford, and Lincoln, MA that has the potential to affect historic properties. A location map is provided in Attachment 1.

The proposed undertaking would establish and implement a lease agreement (Master Lease) between DAF and the Massachusetts Institute of Technology (MIT) and a separate conveyance of facility ownership from DAF to MIT. MIT Lincoln Laboratory (MIT LL), which is a part of MIT, is a federally funded research and development center (FFRDC) operated and managed by MIT for the United States Department of Defense (DoD). MIT LL's use of the existing Government-owned facilities is governed by the Hanscom AFB Base Support Agreement (BSA) incorporated into MIT's FFRDC Prime Contract with the Air Force Life Cycle Management Center (AFLCMC). The proposed Master Lease and building conveyance would remove the land and facilities currently in use by MIT LL from the BSA and create an alternative contractual relationship between MIT LL and the DAF, in which the DAF would convey ownership of the facilities to MIT and execute a Master Lease for the underling property which would include provisions for MIT's operations. The transfer of ownership would allow MIT LL to perform work on the land and facilities in furtherance of the purposes of the FFRDC Prime Contract while not restricted by Air Force Instructions.

The proposed lease area is a total of about 66.58 acres of land divided into 5 parcels, the physical boundaries of which are shown in Attachment 2. The Master Lease area includes 22 existing buildings with a total of 1,183,260 gross square feet, as detailed in Attachment 3, that would be conveyed to MIT. The Master Lease area does not include the Compound

Semiconductor Laboratory – Microelectronics Integration Facility (CSL-MIF) and Engineering and Prototyping Facility (EPF) project sites which are currently in construction, nor the area already leased to MIT by the DAF pursuant to the separate South Lab Land Lease, encompassing the parking garage and the entire South Lab complex. In the future, the Master Lease area and building conveyance would be adjusted to add these areas when construction is completed, and add the area and buildings encompassed by the South Lab Land Lease when that lease period ends.

Under the proposed Master Lease, MIT LL would be permitted to undertake all uses required or necessary to perform and support the research and development activities of MIT's FFRDC Prime Contract. Such uses include, but are not limited to, general office use, research and development, biotechnical research, light and heavy laboratories, parking, support facilities, and related activities to carry out the operation, maintenance, renovation, improvements, demolition, and modernization to the existing buildings and facilities, and the construction of new buildings, infrastructure, and improvements.

The DAF is also preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the undertaking, with an expected completion date of March 2024.

In 1998, Parson Engineering Science, Inc. conducted a Phase I archaeological survey of 34 previously identified areas that were considered to have moderate to high potential for archaeological resources on Hanscom AFB. No cultural materials were discovered in these areas. The MA State Historic Preservation Officer, i,e., the Massachusetts Historical Commission (MHC), in its June 22, 1998 letter regarding this survey report, wrote "The report indicated that no significant historical or archaeological resources were encountered in the archaeological survey of the 34 areas previously determined to have moderate to high potential to contain archaeological resources." MHC concurred with this finding, stating "no further archaeological research is warranted for these surveyed areas" (MHC 1998).

All buildings subject to transfer were surveyed and evaluated for National Register of Historic Places (NRHP) eligibility in June 2003. Buildings 1715 and 1324 (formerly 1302F) were determined to be eligible for the National Register of Historic Places. This evaluation, "*Architectural Building and Inventory Survey, Hanscom Air Force Base, Vols I and II, Bedford, Concord, Lexington, Lincoln and Various Off Site Locations, Massachusetts,*" prepared for the DAF by Public Archaeological Laboratory, Inc. (PAL), on file in your office, determined that these two facilities, and no others subject to this undertaking, are eligible for listing in the NRHP. A portion of the proposed leased land, currently open space, does lie within the boundaries of the Air Force Cambridge Research Laboratory Historic District. The existing programmatic agreement between the DAF and the SHPO that guides undertakings in the district and consultation procedures will remain in effect for this area.

In order to provide for the preservation of historic properties after transfer, the legal documents of this transaction, including the title and lease of property, will include language that ensures future actions undertaken by MIT will be reviewed by the DAF for impacts to historic properties, including the requirement, where applicable, to resolve adverse effects. The lease

language is currently under development and negotiation, but will ensure that MIT LL and the DAF will continue to comply with Section 106 requirements in consultation the SHPO, as well as the three Federally-recognized Tribes affiliated with HAFB. These provisions shall survive any subsequent title transfer in perpetuity. The exact language and specific real property instruments is subject to guidance from our real property senior attorneys, however, the intent to ensure MIT commits to allowing the DAF to comply with current Federal agency obligations with respect preservation of historic properties will be ensured.

In accordance with Section 106 of the NHPA (54 United States Code 306018) and its implementing regulations at 36 CFR Part 800, the DAF has determined that for undertaking limited to the execution of the lease and conveyance of property, there will be ***No Adverse Effect*** to historic properties insofar as the lease and title transfer includes appropriate preservation language as previously discussed. We seek your concurrence with our finding or your comments within 30 days from receipt of this letter. Please feel free to contact me via e-mail at scott.sheehan.l@us.af.mil or at (781) 367-7168 with any questions or if you need additional information. Thank you for your consideration and I look forward to hearing from you.

Sincerely

Scott E Sheehan

SCOTT E. SHEEHAN, GS-12, DAF
Hanscom AFB Cultural Resources Manager

3 Attachments:
1. Location Map
2. Boundaries of Proposed Lease Area
3. Table Summarizing the Buildings to be Transferred

cc:
Superintendent, Minute Man National Historic Park
Chair, Lexington Historical Commission
Chair, Bedford Historical Commission
Chair, Lincoln Historical Commission

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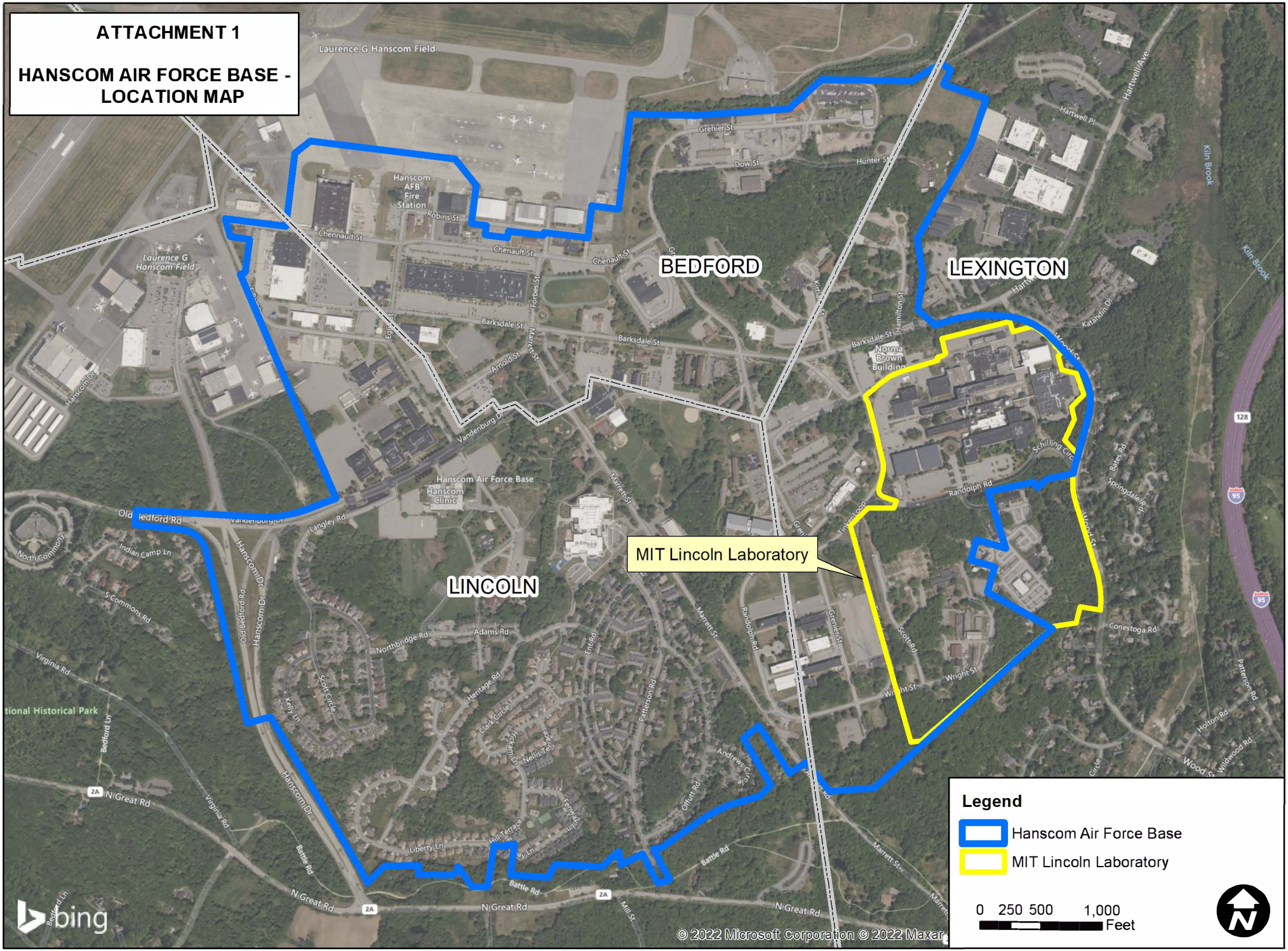

Parcel 5

Parcel 4

BEDFORD

LEXINGTON

LINCOLN

Parcel 1

Parcel 2

Parcel 3

Legend

- Hanscom Air Force Base
- MIT Lincoln Laboratory
- Proposed Land Leases
- Town Boundary
- Structures

ATTACHMENT 2

MIT LINCOLN LABORATORY MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

AECOM

Date: 7/18/2023

0 125 250 500 Feet

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66TH AIR BASE GROUP
HANSCOM AIR FORCE BASE MASSACHUSETTS

August 16, 2023

Mr. Randy K. Robertson
Installation Tribal Liaison Officer
20 Schilling Circle, Bldg 1305
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Ms. Bettina Washington
Tribal Historic Preservation Officer
Wampanoag Tribe of Gay Head (Aquinnah)
20 Black Brook Road
Aquinnah MA 02535-9701

SUBJECT: Proposed Master Lease and Building Conveyance for the MIT Lincoln Laboratory Campus at Hanscom Air Force Base, Lexington, Bedford, and Lincoln, Massachusetts

Dear Ms. Washington

The Department of the Air Force (DAF) is preparing an environmental impact analysis under the National Environmental Policy Act to evaluate potential environmental impacts associated with the proposed master lease and building conveyance for the Massachusetts Institute of Technology (MIT) Lincoln Laboratory Campus at Hanscom Airforce Base (AFB). Per Section 306108 of the National Historic Preservation Act (NHPA) of 1966, as amended, and 36 CFR Part 800, *Protection of Historic Properties*, the USAF is engaging early with tribal governments as it formulates the undertaking.

The proposed undertaking would establish and implement a lease agreement (Master Lease) between DAF and the Massachusetts Institute of Technology (MIT) and a separate conveyance of facility ownership from DAF to MIT. MIT Lincoln Laboratory (MIT LL), which is a part of MIT, is a federally funded research and development center (FFRDC) operated and managed by MIT for the United States Department of Defense (DoD). MIT LL's use of the existing Government-owned facilities is governed by the Hanscom AFB Base Support Agreement (BSA) incorporated into MIT's FFRDC Prime Contract with the Air Force Life Cycle Management Center (AFLCMC). The proposed Master Lease and building conveyance would remove the land and facilities currently in use by MIT LL from the BSA and create an alternative contractual relationship between MIT LL and the DAF, in which the DAF would convey ownership of the facilities to MIT and execute a Master Lease for the underling property which would include provisions for MIT's operations. The transfer of ownership would allow MIT LL to perform work on the land and facilities in furtherance of the purposes of the FFRDC Prime Contract while not restricted by Air Force Instructions. A location map is provided in Attachment 1.

The proposed lease area is a total of about 66.58 acres of land divided into 5 parcels, the physical boundaries of which are shown in Attachment 2. The Master Lease area includes 22 existing buildings with a total of 1,183,260 gross square feet, as detailed in Attachment 3, that would be conveyed to MIT. The Master Lease area does not include the Compound Semiconductor Laboratory – Microelectronics Integration Facility (CSL-MIF) and Engineering and Prototyping Facility (EPF) project sites which are currently in construction, nor the area already leased to MIT by the DAF pursuant to the separate South Lab Land Lease, encompassing the parking garage and the entire South Lab complex. In the future, Mast Lease area and building conveyance would be adjusted to add these areas when construction is completed, and add the area and buildings encompassed by the South Lab Land Lease when that lease period ends.

Under the proposed Master Lease, MIT LL would be permitted to undertake all uses required or necessary to perform and support the research and development activities of MIT's FFRDC Prime Contract. Such uses include, but are not limited to, general office use, research and development, biotechnical research, light and heavy laboratories, parking, support facilities, and related activities to carry out the operation, maintenance, renovation, improvements, demolition, and modernization to the existing buildings and facilities, and the construction of new buildings, infrastructure, and improvements.

In 1998, Parson Engineering Science, Inc. conducted a Phase I archaeological survey of 34 previously identified areas that were considered to have moderate to high potential for archaeological resources on Hanscom AFB, inclusive of the APE. No cultural materials were discovered in these areas. The MA State Historic Preservation Officer, i.e., the Massachusetts Historical Commission (MHC), in its June 22, 1998 letter regarding this survey report, wrote "The report indicated that no significant historical or archaeological resources were encountered in the archaeological survey of the 34 areas previously determined to have moderate to high potential to contain archaeological resources." MHC concurred with this finding, stating "no further archaeological research is warranted for these surveyed areas" (MHC 1998).

In order to provide for the continued preservation Tribal interests after transfer, the legal documents of this transaction will include language that ensures future actions undertaken by MIT will be reviewed by the DAF for impacts to Tribal interests, including appropriate consultation, and include the requirement that MIT allow continued access to the property upon request. The exact language and specific real property instruments including such language is subject to change based on guidance from our real property senior attorneys, however, the intent to ensure MIT commits to allowing the DAF to comply with current Federal agency obligations with respect to preserving Tribal interests will be ensured.

NHPA requires that Federal agencies consult with tribes when an agency action might affect historic properties of religious and cultural significance to the tribes. Hanscom AFB is unaware of any such properties on the installation. Nevertheless, in order to help us fulfill that obligation, we ask for your assistance in identifying any such properties on Hanscom AFB and, particularly, within the proposed lease area that may be of significance to the Tribe. This would include, but not be limited to, archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural properties and landscapes, plant and animal communities, and buildings and structures with significant tribal association. Your input will not affect the

handling or disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony under the Native American Graves Protection and Repatriation Act. In the event such items are discovered, we will contact you regarding their handling and disposition.

We respectfully request your review and comment within 30 days from receipt of this letter. Please fill out the attached determination form and return to the Hanscom AFB Cultural Resources Manager, Mr. Scott Sheehan at scott.sheehan.1@us.af.mil. If you have any questions, please feel free to contact Mr. Sheehan at (781) 367-7168.

Sincerely,

RANDY K. ROBERTSON, NH-04
Installation Tribal Liaison Officer

4 Attachments:
1. Location Map
2. Boundaries of Proposed Lease Area
3. Table Summarizing the Buildings to be Transferred
4. Determination – to be completed by The Wampanoag Tribe of Gay Head (Aquinnah)

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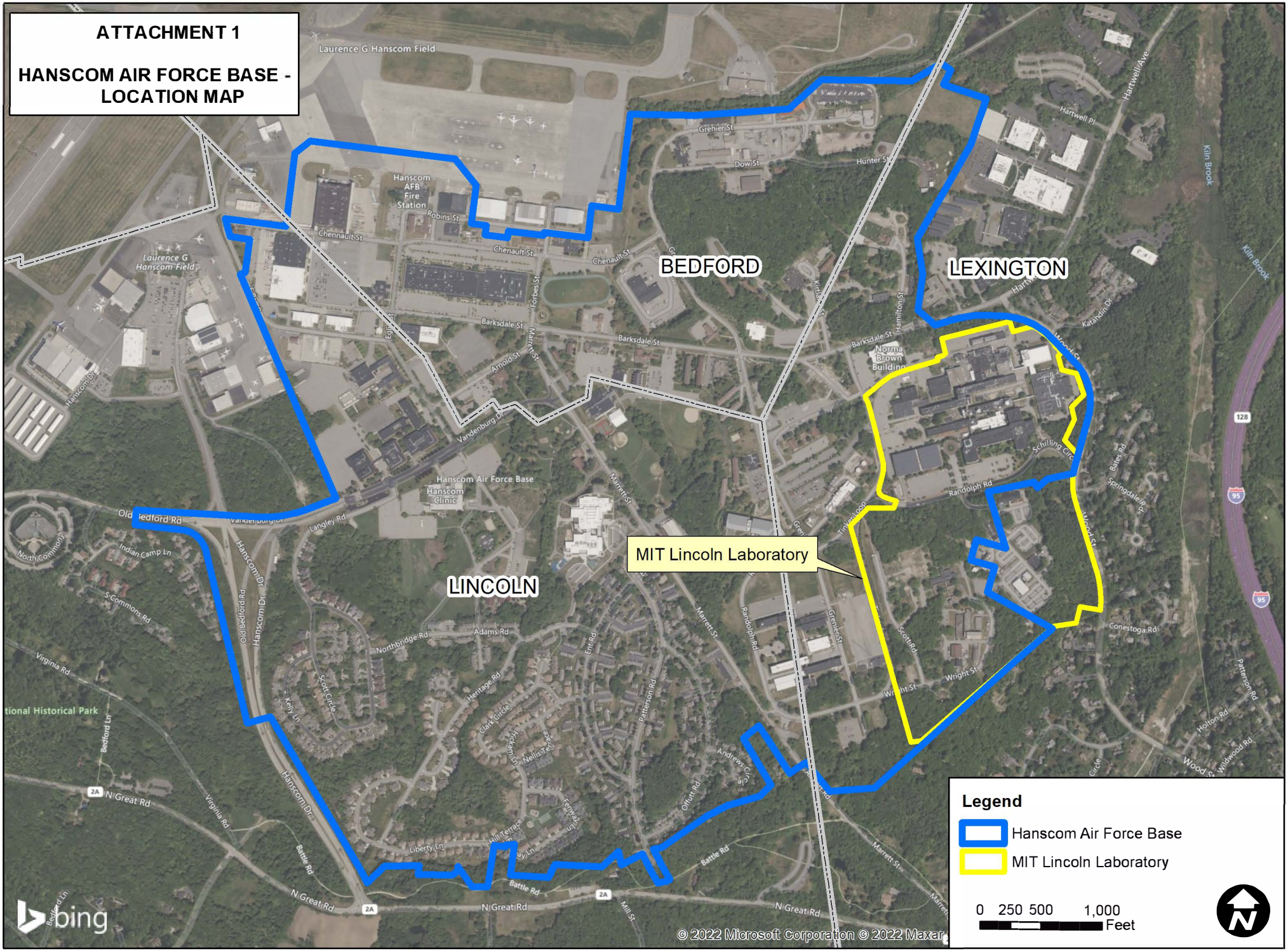

Parcel 5

Parcel 4

BEDFORD

LEXINGTON

LINCOLN

Parcel 1

Parcel 2

Parcel 3

Legend

- Hanscom Air Force Base
- MIT Lincoln Laboratory
- Proposed Land Leases
- Town Boundary
- Structures

ATTACHMENT 2

MIT LINCOLN LABORATORY MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

AECOM

Date: 7/18/2023

0 125 250 500 Feet

C:\Work\60694725\MIT\Maps\Attachment2_MasterLeaseParcels.mxd

Attachment 4

The Wampanoag Tribe of Gay Head (Aquinnah) has determined that:

- ☐ Historic properties of religious and cultural significance to the Wampanoag Tribe of Gay Head (Aquinnah) are not present on Hanscom AFB nor within the footprint of the proposed Master Lease between DAF and MIT, and therefore consultation is not required at this time.

- ☐ Historic properties of religious and cultural significance to the Wampanoag Tribe of Gay Head (Aquinnah) are present on Hanscom AFB, but consultation is not required at this time because the properties will not be affected by the proposed Master Lease between DAF and MIT.

- ☐ Historic properties of religious and cultural significance to the Wampanoag Tribe of Gay Head (Aquinnah) are present on Hanscom AFB or within the footprint of the proposed Master Lease between DAF and MIT, and the tribe desires to consult on this undertaking.

- ☐ Other: _____
  _____
  _____

_____
Signature

_____
Position

Send to:
66 ABG/CEIE
Attn: Mr. Scott Sheehan
120 Grenier Street
Hanscom AFB, MA 01731-1910

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66TH AIR BASE GROUP
HANSCOM AIR FORCE BASE MASSACHUSETTS

August 16, 2023

Mr. Randy K. Robertson
Installation Tribal Liaison Officer
20 Schilling Circle, Bldg 1305
Hanscom AFB MA 01731-2800

Mr. David Weeden
Tribal Historic Preservation Officer
Mashpee Wampanoag Tribe
483 Great Neck Road South
Mashpee, MA 02649-3707

SUBJECT: Proposed Master Lease and Building Conveyance for the MIT Lincoln Laboratory Campus at Hanscom Air Force Base, Lexington, Bedford, and Lincoln, Massachusetts

Dear Mr. Weeden

The Department of the Air Force (DAF) is preparing an environmental impact analysis under the National Environmental Policy Act to evaluate potential environmental impacts associated with the proposed master lease and building conveyance for the Massachusetts Institute of Technology (MIT) Lincoln Laboratory Campus at Hanscom Airforce Base (AFB). Per Section 306108 of the National Historic Preservation Act (NHPA) of 1966, as amended, and 36 CFR Part 800, *Protection of Historic Properties*, the USAF is engaging early with tribal governments as it formulates the undertaking.

The proposed undertaking would establish and implement a lease agreement (Master Lease) between DAF and the Massachusetts Institute of Technology (MIT) and a separate conveyance of facility ownership from DAF to MIT. MIT Lincoln Laboratory (MIT LL), which is a part of MIT, is a federally funded research and development center (FFRDC) operated and managed by MIT for the United States Department of Defense (DoD). MIT LL's use of the existing Government-owned facilities is governed by the Hanscom AFB Base Support Agreement (BSA) incorporated into MIT's FFRDC Prime Contract with the Air Force Life Cycle Management Center (AFLCMC). The proposed Master Lease and building conveyance would remove the land and facilities currently in use by MIT LL from the BSA and create an alternative contractual relationship between MIT LL and the DAF, in which the DAF would convey ownership of the facilities to MIT and execute a Master Lease for the underling property which would include provisions for MIT's operations. The transfer of ownership would allow MIT LL to perform work on the land and facilities in furtherance of the purposes of the FFRDC Prime Contract while not restricted by Air Force Instructions. A location map is provided in Attachment 1.

The proposed lease area is a total of about 66.58 acres of land divided into 5 parcels, the physical boundaries of which are shown in Attachment 2. The Master Lease area includes 22 existing buildings with a total of 1,183,260 gross square feet, as detailed in Attachment 3, that would be conveyed to MIT. The Master Lease area does not include the Compound Semiconductor Laboratory – Microelectronics Integration Facility (CSL-MIF) and Engineering and Prototyping Facility (EPF) project sites which are currently in construction, nor the area already leased to MIT by the DAF pursuant to the separate South Lab Land Lease, encompassing the parking garage and the entire South Lab complex. In the future, Mast Lease area and building conveyance would be adjusted to add these areas when construction is completed, and add the area and buildings encompassed by the South Lab Land Lease when that lease period ends.

Under the proposed Master Lease, MIT LL would be permitted to undertake all uses required or necessary to perform and support the research and development activities of MIT's FFRDC Prime Contract. Such uses include, but are not limited to, general office use, research and development, biotechnical research, light and heavy laboratories, parking, support facilities, and related activities to carry out the operation, maintenance, renovation, improvements, demolition, and modernization to the existing buildings and facilities, and the construction of new buildings, infrastructure, and improvements.

In 1998, Parson Engineering Science, Inc. conducted a Phase I archaeological survey of 34 previously identified areas that were considered to have moderate to high potential for archaeological resources on Hanscom AFB, inclusive of the APE. No cultural materials were discovered in these areas. The MA State Historic Preservation Officer, i.e., the Massachusetts Historical Commission (MHC), in its June 22, 1998 letter regarding this survey report, wrote "The report indicated that no significant historical or archaeological resources were encountered in the archaeological survey of the 34 areas previously determined to have moderate to high potential to contain archaeological resources." MHC concurred with this finding, stating "no further archaeological research is warranted for these surveyed areas" (MHC 1998).

In order to provide for the continued preservation Tribal interests after transfer, the legal documents of this transaction will include language that ensures future actions undertaken by MIT will be reviewed by the DAF for impacts to Tribal interests, including appropriate consultation, and include the requirement that MIT allow continued access to the property upon request. The exact language and specific real property instruments including such language is subject to change based on guidance from our real property senior attorneys, however, the intent to ensure MIT commits to allowing the DAF to comply with current Federal agency obligations with respect to preserving Tribal interests will be ensured.

NHPA requires that Federal agencies consult with tribes when an agency action might affect historic properties of religious and cultural significance to the tribes. Hanscom AFB is unaware of any such properties on the installation. Nevertheless, in order to help us fulfill that obligation, we ask for your assistance in identifying any such properties on Hanscom AFB and, particularly, within the proposed lease area that may be of significance to the Tribe. This would include, but not be limited to, archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural properties and landscapes, plant and animal communities, and buildings and structures with significant tribal association. Your input will not affect the

handling or disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony under the Native American Graves Protection and Repatriation Act. In the event such items are discovered, we will contact you regarding their handling and disposition.

We respectfully request your review and comment within 30 days from receipt of this letter. Please fill out the attached determination form and return to the Hanscom AFB Cultural Resources Manager, Mr. Scott Sheehan at scott.sheehan.1@us.af.mil. If you have any questions, please feel free to contact Mr. Sheehan at (781) 367-7168.

Sincerely,

RANDY K. ROBERTSON, NH-04
Installation Tribal Liaison Officer

4 Attachments:
1. Location Map
2. Boundaries of Proposed Lease Area
3. Table Summarizing the Buildings to be Transferred
4. Determination – to be completed by the Mashpee Wampanoag Tribe

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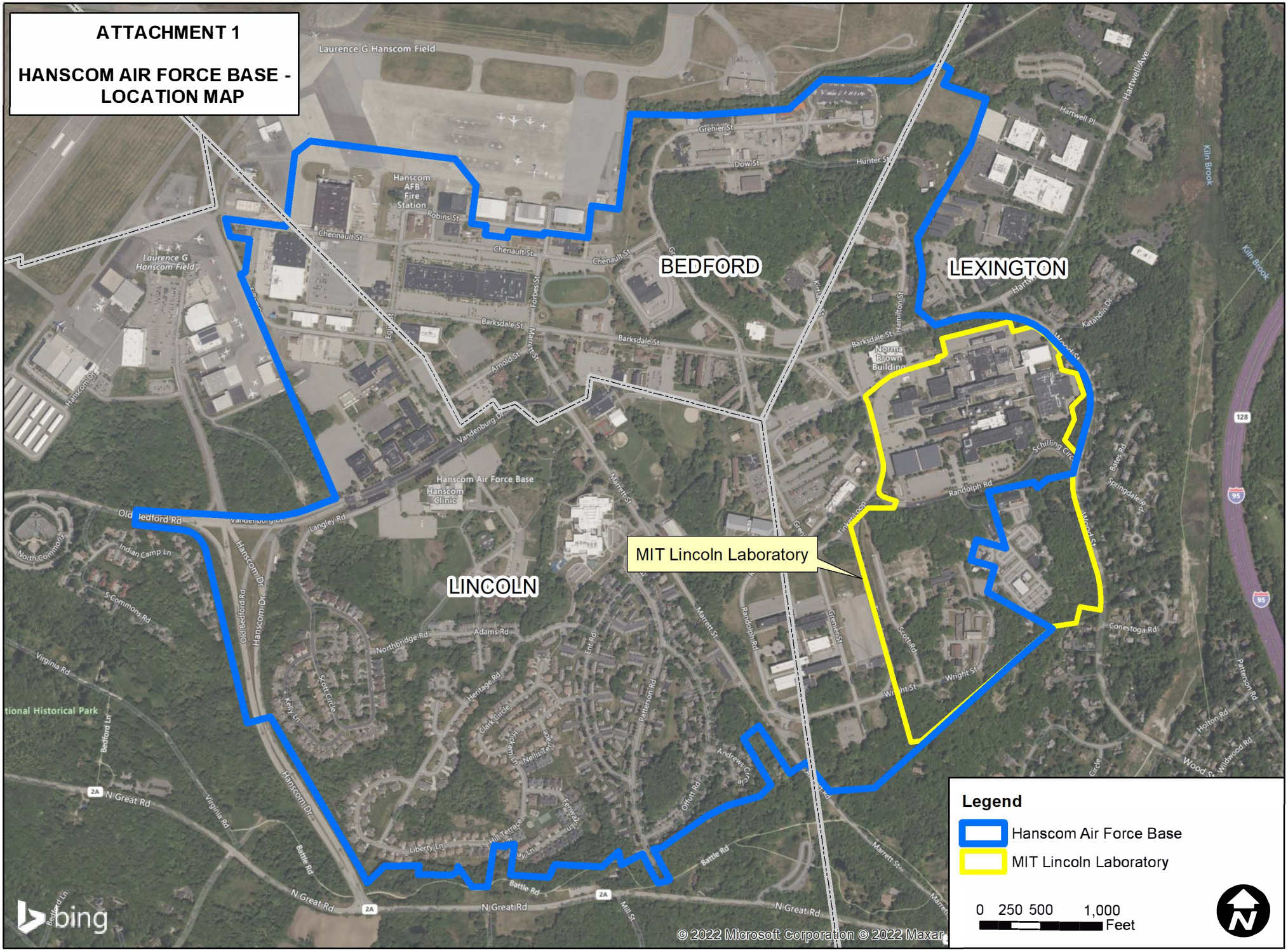

Parcel 5

Parcel 4

BEDFORD

LEXINGTON

LINCOLN

Parcel 1

Parcel 2

Parcel 3

Legend

- Hanscom Air Force Base
- MIT Lincoln Laboratory
- Proposed Land Leases
- Town Boundary
- Structures

ATTACHMENT 2

MIT LINCOLN LABORATORY MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

AECOM

Date: 7/18/2023

0 125 250 500 Feet

C:\Work\60694725\MIT\Maps\Attachment2_MasterLeaseParcels.mxd

Attachment 4

The Mashpee Wampanoag Tribe has determined that:

- ☐ Historic properties of religious and cultural significance to the Mashpee Wampanoag Tribe are not present on Hanscom AFB nor within the footprint of the proposed Master Lease between DAF and MIT, and therefore consultation is not required at this time.

- ☐ Historic properties of religious and cultural significance to the Mashpee Wampanoag Tribe are present on Hanscom AFB, but consultation is not required at this time because the properties will not be affected by the proposed Master Lease between DAF and MIT.

- ☐ Historic properties of religious and cultural significance to the Mashpee Wampanoag Tribe are present on Hanscom AFB or within the footprint of the proposed Master Lease between DAF and MIT, and the tribe desires to consult on this undertaking.

- ☐ Other: _____
  _____
  _____

_____
Signature

_____
Position

Send to:
66 ABG/CEIE
Attn: Mr. Scott Sheehan
120 Grenier Street
Hanscom AFB, MA 01731-1910

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66TH AIR BASE GROUP
HANSCOM AIR FORCE BASE MASSACHUSETTS

August 16, 2023

Mr. Randy K. Robertson
Installation Tribal Liaison Officer
20 Schilling Circle, Bldg 1305
Hanscom AFB MA 01731-2800

Mr. John Brown
Tribal Historic Preservation Officer
Narragansett Indian Tribe
P.O. Box 268
Charlseton, RI 02831-3428

SUBJECT: Proposed Master Lease and Building Conveyance for the MIT Lincoln Laboratory Campus at Hanscom Air Force Base, Lexington, Bedford, and Lincoln, Massachusetts

Dear Mr. Brown

The Department of the Air Force (DAF) is preparing an environmental impact analysis under the National Environmental Policy Act to evaluate potential environmental impacts associated with the proposed master lease and building conveyance for the Massachusetts Institute of Technology (MIT) Lincoln Laboratory Campus at Hanscom Airforce Base (AFB). Per Section 306108 of the National Historic Preservation Act (NHPA) of 1966, as amended, and 36 CFR Part 800, *Protection of Historic Properties*, the USAF is engaging early with tribal governments as it formulates the undertaking.

The proposed undertaking would establish and implement a lease agreement (Master Lease) between DAF and the Massachusetts Institute of Technology (MIT) and a separate conveyance of facility ownership from DAF to MIT. MIT Lincoln Laboratory (MIT LL), which is a part of MIT, is a federally funded research and development center (FFRDC) operated and managed by MIT for the United States Department of Defense (DoD). MIT LL's use of the existing Government-owned facilities is governed by the Hanscom AFB Base Support Agreement (BSA) incorporated into MIT's FFRDC Prime Contract with the Air Force Life Cycle Management Center (AFLCMC). The proposed Master Lease and building conveyance would remove the land and facilities currently in use by MIT LL from the BSA and create an alternative contractual relationship between MIT LL and the DAF, in which the DAF would convey ownership of the facilities to MIT and execute a Master Lease for the underling property which would include provisions for MIT's operations. The transfer of ownership would allow MIT LL to perform work on the land and facilities in furtherance of the purposes of the FFRDC Prime Contract while not restricted by Air Force Instructions. A location map is provided in Attachment 1.

The proposed lease area is a total of about 66.58 acres of land divided into 5 parcels, the physical boundaries of which are shown in Attachment 2. The Master Lease area includes 22 existing buildings with a total of 1,183,260 gross square feet, as detailed in Attachment 3, that would be conveyed to MIT. The Master Lease area does not include the Compound Semiconductor Laboratory – Microelectronics Integration Facility (CSL-MIF) and Engineering and Prototyping Facility (EPF) project sites which are currently in construction, nor the area already leased to MIT by the DAF pursuant to the separate South Lab Land Lease, encompassing the parking garage and the entire South Lab complex. In the future, Mast Lease area and building conveyance would be adjusted to add these areas when construction is completed, and add the area and buildings encompassed by the South Lab Land Lease when that lease period ends.

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In 1998, Parson Engineering Science, Inc. conducted a Phase I archaeological survey of 34 previously identified areas that were considered to have moderate to high potential for archaeological resources on Hanscom AFB, inclusive of the APE. No cultural materials were discovered in these areas. The MA State Historic Preservation Officer, i.e., the Massachusetts Historical Commission (MHC), in its June 22, 1998 letter regarding this survey report, wrote "The report indicated that no significant historical or archaeological resources were encountered in the archaeological survey of the 34 areas previously determined to have moderate to high potential to contain archaeological resources." MHC concurred with this finding, stating "no further archaeological research is warranted for these surveyed areas" (MHC 1998).

In order to provide for the continued preservation Tribal interests after transfer, the legal documents of this transaction will include language that ensures future actions undertaken by MIT will be reviewed by the DAF for impacts to Tribal interests, including appropriate consultation, and include the requirement that MIT allow continued access to the property upon request. The exact language and specific real property instruments including such language is subject to change based on guidance from our real property senior attorneys, however, the intent to ensure MIT commits to allowing the DAF to comply with current Federal agency obligations with respect to preserving Tribal interests will be ensured.

NHPA requires that Federal agencies consult with tribes when an agency action might affect historic properties of religious and cultural significance to the tribes. Hanscom AFB is unaware of any such properties on the installation. Nevertheless, in order to help us fulfill that obligation, we ask for your assistance in identifying any such properties on Hanscom AFB and, particularly, within the proposed lease area that may be of significance to the Tribe. This would include, but not be limited to, archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural properties and landscapes, plant and animal communities, and buildings and structures with significant tribal association. Your input will not affect the

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We respectfully request your review and comment within 30 days from receipt of this letter. Please fill out the attached determination form and return to the Hanscom AFB Cultural Resources Manager, Mr. Scott Sheehan at scott.sheehan.1@us.af.mil. If you have any questions, please feel free to contact Mr. Sheehan at (781) 367-7168.

Sincerely,

RANDY K. ROBERTSON, NH-04
Installation Tribal Liaison Officer

4 Attachments:
1. Location Map
2. Boundaries of Proposed Lease Area
3. Table Summarizing the Buildings to be Transferred
4. Determination – to be completed by the Narragansett Indian Tribe

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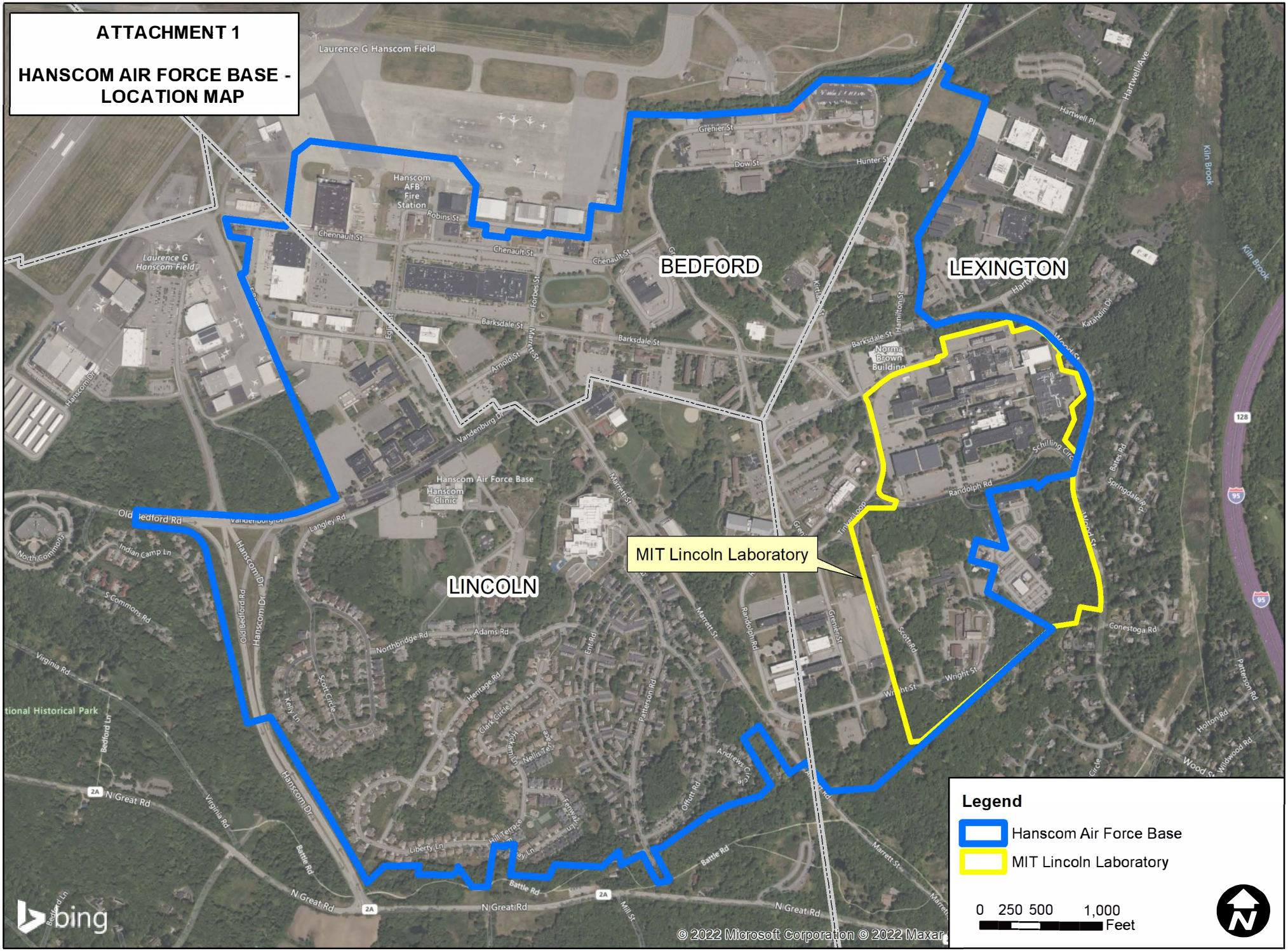

Parcel 5

Parcel 4

BEDFORD

LEXINGTON

LINCOLN

Parcel 1

Parcel 2

Parcel 3

Legend

- Hanscom Air Force Base
- MIT Lincoln Laboratory
- Proposed Land Leases
- Town Boundary
- Structures

ATTACHMENT 2

MIT LINCOLN LABORATORY MASTER LEASE PARCELS

LEXINGTON, LINCOLN, BEDFORD, MASSACHUSETTS

AECOM

Date: 7/18/2023

0 125 250 500 Feet

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Attachment 4

The Narragansett Indian Tribe has determined that:

- ☐ Historic properties of religious and cultural significance to the Narragansett Indian Tribe are not present on Hanscom AFB nor within the footprint of the proposed Master Lease between DAF and MIT, and therefore consultation is not required at this time.

- ☐ Historic properties of religious and cultural significance to the Narragansett Indian Tribe are present on Hanscom AFB, but consultation is not required at this time because the properties will not be affected by the proposed Master Lease between DAF and MIT.

- ☐ Historic properties of religious and cultural significance to the Narragansett Indian Tribe are present on Hanscom AFB or within the footprint of the proposed Master Lease between DAF and MIT, and the tribe desires to consult on this undertaking.

- ☐ Other: _____
  _____
  _____

_____
Signature

_____
Position

Send to:
66 ABG/CEIE
Attn: Mr. Scott Sheehan
120 Grenier Street
Hanscom AFB, MA 01731-1910

United States Department of the Interior
NATIONAL PARK SERVICE
Minute Man National Historical Park
174 Liberty Street
Concord, Massachusetts 01742

September 12, 2023

Mr. Scott Sheehan
Cultural Resources Manager
66/ABG/CEIE
120 Hanscom AFB, MA 01731-1910

Dear Mr. Sheehan,

The National Park Service (NPS) appreciates your August 15, 2023 letter regarding the proposal by the Hanscom Air Force Base (Hanscom AFB) to transfer lands within the base to the Massachusetts Institute of Technology (MIT).

Of particular interest and potential concern to the NPS is how this land transaction defines MIT Lincoln Laboratory's (MIT LL) future use of the area. It is noted that MIT LL could execute activities that include "demolition, and…the construction of new buildings, infrastructure, and improvements." Although this area of the base is not directly adjacent to the Minute Man National Historical Park, it is close to Gate 2 and Marrett Road (Old Airport Road). It is unclear if this land transaction includes any restrictions or if potential improvements in the future could result in new buildings or infrastructure constructed at a height that is considerably taller than the current buildings and/or removal of forested area at the fence line. These potential future projects could affect the park's Historic District. As Hanscom AFB looks to include language in the legal documentation of this transfer that will ensure "MIT LL and the DAF will continue to comply with the Section 106 requirements…", NPS requests that Minute Man National Historical Park be included as a consulting party for future undertakings that would fall under this provision.

Please include the NPS on the distribution list for the Environmental Assessment that is scheduled to be released in 2024.

If you have any questions, please do not hesitate to reach out to me by email at simone_monteleone@nps.gov or by phone at 978-318-7811.

Sincerely,

Simone Monteleone
Superintendent

CC: Brona Simon, SHPO

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66TH AIR BASE GROUP
HANSCOM AIR FORCE BASE MASSACHUSETTS

August 15, 2023

Mr. Scott E. Sheehan
66 ABG/CEIE
120 Grenier Street
Hanscom AFB MA 01731-1910

CONCURRENCE. Brona Simon
9/22/23
BRONA SIMON
STATE HISTORIC
PRESERVATION OFFICER
MASSACHUSETTS
HISTORICAL COMMISSION

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director, Massachusetts Historical Commission
220 Morrissey Boulevard
Boston MA 02125

SUBJECT: Proposed Master Lease and Building Conveyance for the MIT Lincoln Laboratory Campus at Hanscom Air Force Base, Lexington, Bedford, and Lincoln, Massachusetts

Dear Ms. Simon:

The Department of the Air Force (DAF) is proposing an undertaking at Hanscom Air Force Base (HAFB) in Lexington, Bedford, and Lincoln, MA that has the potential to affect historic properties. A location map is provided in Attachment 1.

The proposed undertaking would establish and implement a lease agreement (Master Lease) between DAF and the Massachusetts Institute of Technology (MIT) and a separate conveyance of facility ownership from DAF to MIT. MIT Lincoln Laboratory (MIT LL), which is a part of MIT, is a federally funded research and development center (FFRDC) operated and managed by MIT for the United States Department of Defense (DoD). MIT LL's use of the existing Government-owned facilities is governed by the Hanscom AFB Base Support Agreement (BSA) incorporated into MIT's FFRDC Prime Contract with the Air Force Life Cycle Management Center (AFLCMC). The proposed Master Lease and building conveyance would remove the land and facilities currently in use by MIT LL from the BSA and create an alternative contractual relationship between MIT LL and the DAF, in which the DAF would convey ownership of the facilities to MIT and execute a Master Lease for the underling property which would include provisions for MIT's operations. The transfer of ownership would allow MIT LL to perform work on the land and facilities in furtherance of the purposes of the FFRDC Prime Contract while not restricted by Air Force Instructions.

The proposed lease area is a total of about 66.58 acres of land divided into 5 parcels, the physical boundaries of which are shown in Attachment 2. The Master Lease area includes 22 existing buildings with a total of 1,183,260 gross square feet, as detailed in Attachment 3, that would be conveyed to MIT. The Master Lease area does not include the Compound

Semiconductor Laboratory – Microelectronics Integration Facility (CSL-MIF) and Engineering and Prototyping Facility (EPF) project sites which are currently in construction, nor the area already leased to MIT by the DAF pursuant to the separate South Lab Land Lease, encompassing the parking garage and the entire South Lab complex. In the future, the Master Lease area and building conveyance would be adjusted to add these areas when construction is completed, and add the area and buildings encompassed by the South Lab Land Lease when that lease period ends.

Under the proposed Master Lease, MIT LL would be permitted to undertake all uses required or necessary to perform and support the research and development activities of MIT's FFRDC Prime Contract. Such uses include, but are not limited to, general office use, research and development, biotechnical research, light and heavy laboratories, parking, support facilities, and related activities to carry out the operation, maintenance, renovation, improvements, demolition, and modernization to the existing buildings and facilities, and the construction of new buildings, infrastructure, and improvements.

The DAF is also preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the undertaking, with an expected completion date of March 2024.

In 1998, Parson Engineering Science, Inc. conducted a Phase I archaeological survey of 34 previously identified areas that were considered to have moderate to high potential for archaeological resources on Hanscom AFB. No cultural materials were discovered in these areas. The MA State Historic Preservation Officer, i,e., the Massachusetts Historical Commission (MHC), in its June 22, 1998 letter regarding this survey report, wrote "The report indicated that no significant historical or archaeological resources were encountered in the archaeological survey of the 34 areas previously determined to have moderate to high potential to contain archaeological resources." MHC concurred with this finding, stating "no further archaeological research is warranted for these surveyed areas" (MHC 1998).

All buildings subject to transfer were surveyed and evaluated for National Register of Historic Places (NRHP) eligibility in June 2003. Buildings 1715 and 1324 (formerly 1302F) were determined to be eligible for the National Register of Historic Places. This evaluation, "*Architectural Building and Inventory Survey, Hanscom Air Force Base, Vols I and II, Bedford, Concord, Lexington, Lincoln and Various Off Site Locations, Massachusetts,*" prepared for the DAF by Public Archaeological Laboratory, Inc. (PAL), on file in your office, determined that these two facilities, and no others subject to this undertaking, are eligible for listing in the NRHP. A portion of the proposed leased land, currently open space, does lie within the boundaries of the Air Force Cambridge Research Laboratory Historic District. The existing programmatic agreement between the DAF and the SHPO that guides undertakings in the district and consultation procedures will remain in effect for this area.

In order to provide for the preservation of historic properties after transfer, the legal documents of this transaction, including the title and lease of property, will include language that ensures future actions undertaken by MIT will be reviewed by the DAF for impacts to historic properties, including the requirement, where applicable, to resolve adverse effects. The lease

language is currently under development and negotiation, but will ensure that MIT LL and the DAF will continue to comply with Section 106 requirements in consultation the SHPO, as well as the three Federally-recognized Tribes affiliated with HAFB. These provisions shall survive any subsequent title transfer in perpetuity. The exact language and specific real property instruments is subject to guidance from our real property senior attorneys, however, the intent to ensure MIT commits to allowing the DAF to comply with current Federal agency obligations with respect preservation of historic properties will be ensured.

In accordance with Section 106 of the NHPA (54 United States Code 306018) and its implementing regulations at 36 CFR Part 800, the DAF has determined that for undertaking limited to the execution of the lease and conveyance of property, there will be ***No Adverse Effect*** to historic properties insofar as the lease and title transfer includes appropriate preservation language as previously discussed. We seek your concurrence with our finding or your comments within 30 days from receipt of this letter. Please feel free to contact me via e-mail at scott.sheehan.l@us.af.mil or at (781) 367-7168 with any questions or if you need additional information. Thank you for your consideration and I look forward to hearing from you.

Sincerely

Scott E Sheehan

SCOTT E. SHEEHAN, GS-12, DAF
Hanscom AFB Cultural Resources Manager

3 Attachments:
1. Location Map
2. Boundaries of Proposed Lease Area
3. Table Summarizing the Buildings to be Transferred

cc:
Superintendent, Minute Man National Historic Park
Chair, Lexington Historical Commission
Chair, Bedford Historical Commission
Chair, Lincoln Historical Commission

Attachment B – Wildlife / Threatened and Endangered Species

Northern Long-Eared Bat

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66TH AIR BASE GROUP
HANSCOM AIR FORCE BASE MASSACHUSETTS

29 Sep 2023

MEMORANDUM FOR RECORD

SUBJECT: Extension of ESA "No Effect" Determination for the NLEB at Hanscom AFB

1. On 2 Oct 2018, Hanscom AFB (HAFB) had determined that proposed undertakings within the boundaries of Hanscom AFB main base and within the boundaries of Fourth Cliff in Scituate, Massachusetts will have "no effect" on the federally listed Northern Long-eared Bat (*Myotis septentrionalis*) (NLEB). This determination was effective for a period of 5 years and valid for undertakings which commenced on or after 2 Oct 2018 and were completed on or prior to 1 Oct 2023.

2. HAFB conducted updated bat surveys during the active season in calendar year 2023. As of the date of this memo, results of those surveys have not yet been compiled. It is expected that results will be available in early 2024.

3. The active bat season at HAFB occurs between April and October. Seeing as the season is quickly coming to an end, HAFB is extending the original determination of No Effect through March 2024, at which time data from recent surveys should be available for analysis. A "No Effect" determination remains appropriate through March 2024.

4. This determination is not applicable to geographically separated areas of Hanscom AFB that include FAMCAMP (which has not been surveyed) or Sagamore Hill (which has documented the presence of the NLEB).

5. If further information is needed, please contact me at (781) 225-6144, scott.sheehan.1@us.af.mil

SCOTT E. SHEEHAN, GS-12, DAF
Hanscom AFB Natural Resources Manager

Attachment:
2 Oct 2018 No Effect Determination

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66TH AIR BASE GROUP
HANSCOM AIR FORCE BASE MASSACHUSETTS

2 Oct 2018

MEMORANDUM FOR RECORD

SUBJECT: ESA "No Effect" Determination for the NLEB at Hanscom AFB

1. Upon review of the best available science, Hanscom AFB has determined that proposed undertakings within the boundaries of Hanscom AFB main base and within the boundaries of Fourth Cliff in Scituate, Massachusetts will have "no effect" on the federally listed Northern Long-eared Bat (*Myotis septentrionalis*) (NLEB). This determination is effective for a period of 5 years and is valid for undertakings which commence on or after 2 Oct 2018 and are completed on or prior to 1 Oct 2023 unless subsequently rescinded based on newly acquired science or information. A "No Effect" determination is appropriate because:

a. Recent acoustical surveys conducted in 2018 have failed to indicate presence of the NLEB within the areas of Hanscom AFB main base and Fourth Cliff. Results of this study, "*Natural Resource Program, Multiple Installations, U.S. Air Force Bat Acoustic Survey Project AFCE50979317*" are on file at Hanscom AFB, 66 ABG/CEIE Administrative Record File number 14-1-2018-0901-01.

b. Undertakings in these areas do not have the potential to remove any trees within an area known to provide habitat for the NLEB nor within the vicinity of any known maternity roost trees or hibernaculum for the species (reference: https://www.mass.gov/service-details/the-northern-long-eared-bat).

2. This determination is not applicable to geographically separated areas of Hanscom AFB that include FAMCAMP (which has not been surveyed) or Sagamore Hill (which has documented the presence of the NLEB).

3. If further information is needed, please contact me at (781) 225-6144, scott.sheehan.1@us.af.mil.

SCOTT E. SHEEHAN, GS-12, DAF
Hanscom AFB Natural Resources Manager

Attachment C – Public Comment Notification

NOTICE OF AVAILABILITY

DRAFT ENVIRONMENTAL ASSESSMENT

Massachusetts Institute of Technology Lincoln Laboratory
Master Lease and Building Conveyance at Hanscom Air Force Base

A draft Environmental Assessment and Finding of No Significant Impact (EA/FONSI) dated November 2023 have been prepared in accordance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality and Department of the Air Force (DAF) regulations implementing NEPA. The EA evaluates potential environmental impacts associated with establishing and implementing a Master Lease between the DAF and the Massachusetts Institute of Technology (MIT), as well as a separate conveyance via quitclaim deed of facility and improvement ownership from the DAF to MIT. The purpose is to establish the conditions MIT needs to meet Department of Defense project and schedule requirements.

The draft EA and FONSI are available for review online at the following website:

https://www.hanscom.af.mil/About-Us/Fact-Sheets/Display/Article/379486/civil-engineering/

For further information, contact the Environmental Office at Hanscom AFB at 781-225-6209.

Written comments will be received through 23 December 2023 and may be either emailed to Jim Maravelias at james.maravelias.1@us.af.mil or mailed to: 66 ABG/CEIE; 120 Grenier Street; Hanscom AFB, MA 01731-1910.