DRAFT ENVIRONMENTAL ASSESSMENT (EA)

FOR

LEAD SERVICE LINE REPLACEMENT
HANSCOM AIR FORCE BASE, MASSACHUSETTS

U.S. AIR FORCE

PREPARED BY:

Department of the Air Force

Hanscom Air Force Base, Massachusetts, 01731

Date February 27, 2024

Letters or other written comments provided may be published in the Final EA. As required by law, substantive comments will be addressed in the Final EA and made available to the public. Any personal information provided will be kept confidential. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AAFES	Army & Air Force Exchange Service
ABG	Air Base Group
ACAM	Air Conformity Applicability Model
ACQR	Air Quality Control Region
AF	Air Force
AT/FP	Anti-Terrorism/Force Protection
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFCRL	Air Force Cambridge Research Laboratories
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFMC	Air Force Materiel Command
AFPD	Air Force Policy Directive
AICUZ	Air Installations Compatibility Use Zone
AL	Action Limit
AST	Aboveground Storage Tanks
BACT	Bacteriological
BMP	Best Management Practices
CAA	Clean Air Act
CEG	Contractor Environmental Guide
CEI	66th Civil Engineering Division Installation Management
CEIE	Civil Engineering and infrastructure Engineering
CEO	66th Civil Engineering Division Installation Operation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CMR	Code of Massachusetts Regulations
CO	Carbon Monoxide
COGEN	Co-generation
CWA	Clean Water Act
DAF	Department of the Air Force
DCMA	Defense Contract Management Agency
DEP	Massachusetts Department of Environmental Protection
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act

GLOSSARY OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FY	Financial Year
GCR	General Conformity Rule
GPR	Ground Penetrating Radar
HMMP	Hazardous Materials Management Plan
HWMP	Hazardous Waste Management Plan
ICRMP	Integrated Cultural Resources Management
IDP	Installation Development Plan
IICEP	Interagency/Intergovernmental Coordination for Environmental Planning
ISWMP	Integrated Solid Waste Management Plan
LCCA	Lead Contamination Control Act
LCR	Lead Copper Rule
LCRR	Lead Copper Rule Revisions
MA	Massachusetts
MCIA	Massachusetts Commission on Indian Affairs
MCLG	Maximum Contaminant Level Goal
MHC	Massachusetts Historical Commission
MILCON	Military Construction
MMNHP	Minute Man National Historical Park
MS4	Municipal separate storm sewer system
MW	Megawatt
MWRA	Massachusetts Water Resources Authority
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHESP	Natural Heritage and Endangered Species Program
NHPA	National Historic Preservation Act
NLEB	Northern Long Eared Bat
NO2	Nitrogen Dioxide
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O3	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PH	Priority habitat
PM	Particulate matter

GLOSSARY OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO2	Sulfur Dioxide
SOP	Standard Operating Procedures
TDM	traffic demand management
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Loads
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tanks

EXECUTIVE SUMMARY

Proposed Action

Hanscom Airforce Base (AFB) proposes to inspect water service lines, create an inventory of existing service lines, identify service lines that may potentially contain lead, and remove those that are found to contain lead. The recently completed Lead Service Line Investigation and Report MXRD22EA02 (May 2023), identifies 24 potentially suspect lead-containing water service lines at Hanscom AFB.

Physical inspections of the 24 pipe segments identified as potentially containing lead will be conducted to determine if they do. An expected area of disturbance of approximately four feet to each side of the service line will result from removal of topsoil, sidewalk, or other surfaces. Disturbance resulting from physical inspections and removal actions for each pipe segment totals approximately 130 square feet (sf). A total area of disturbance of up to approximately 2,197 sf is anticipated from physical inspections of all 24 segments.

Pipes identified as lead-containing are proposed to be removed. The disturbance associated with removal actions, which may be up to four feet on each side of the service lines, and results in approximately 7,945 sf of disturbance for all 24 segments.

Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to protect human health by reducing lead exposure in water systems at Hanscom AFB. The need for the Proposed Action is to comply with U.S. Environmental Protection Agency (EPA)'s Lead and Copper Rule Revisions (LCRR) regulations to prepare and maintain an inventory of service line materials and identify and replace potential lead service lines at Hanscom AFB. Lead services lines pose risks to human health and the environment.

Alternatives Considered

Three alternatives were selected for analysis based upon the following screening criteria: meet EPA and state requirements; protect human health and the environment; support continual mission growth; and have an efficient approach.

The Department of the Air Force (DAF) narrowed the alternatives to two action alternatives that meet the purpose and need for the Proposed Action: Preferred Alternative and No Action Alternative.

Alternative 1 (Preferred Alternative) – Investigate & Remove All Identified Lead Service Lines

Alternative 1 would complete inspections of unknown lines and components and remove all identified lead service lines and components at Hanscom AFB.

Alternative 2 – Remove All Unknown Lines and Components

Alternative 2 would remove all unknown lines and components identified as potentially suspect lead-containing service lines and components at Hanscom AFB.

Alternative 3 – Complete physical inspections of unknown lines and components and monitor lead levels. Identified lead service lines and components at Hanscom AFB would not be removed unless action levels are reached under the LCRR.

The No Action Alternative – Under the No Action Alternative, Hanscom AFB would not conduct physical inspections or remove lead water service lines. There would be no ground disturbance or temporary disruption to Hanscom AFB infrastructure. Existing service lines would continue to supply water within the base to office buildings, work areas, and other public water dispensing locations. The No Action Alternative is considered the baseline from which all other environmental analyses are compared.

Summary of Environmental Resources Evaluated in the EA

In compliance with NEPA, CEQ regulations, and the DAF EIAP, the affected environment focuses on only those resources with the potential to be impacted by implementation of the Proposed Action at the Preferred Alternative sites. The discussion of the affected environment and associated environmental impacts analysis focuses on the following resource areas: air quality, land use, water resources, soils and geologic resources, cultural resources, noise, biological/natural resources, infrastructure, occupational health and safety, solid wastes and hazardous materials, and socioeconomic and environmental justice. An analysis of the air installation compatible use zone was determined to be unnecessary.

Summary of Potential Environmental Consequences of the Action

Air Quality: Alternative 1 would involve excavation and re-paving activities within Hanscom AFB. EPA has listed Hanscom AFB as nonattainment of the 1997 ozone NAAQS, although Middlesex county is in attainment with all the most recent and stringent NAAQS. As part of the Hanscom IDP EA, a comprehensive ACAM evaluation was conducted. The results show that for all planned construction activities between the years 2020 and 2028, emissions of all NAAQS would be well below the threshold, at *de minimis* levels, indicating that the General Conformity Rule does not apply. Therefore, although some increase in air pollutant emissions is expected during construction activities, they would not be significant and would be temporary. Best management practices would be applied during construction activities, to the maximum extent possible. As a result, no adverse impacts on the air quality are expected from the Preferred Alternative.

Land Use: Alternative 1 is compatible with current land use plans. Practicable best management measures would be adopted to minimize impacts on land use, including restoring disturbed areas to existing conditions. No adverse land use impact is anticipated from the construction and operation of the Proposed Action.

Water Resources: Alternative 1 is not anticipated to have adverse short- or long-term impacts on water resources. During excavation and re-paving, appropriate measures, such as placement of silt fence and/or hay bales around catch basins, would be implemented to reduce potential for sediment/eroded materials to impact wetland/streams on the site.

Soils and Geologic Resources: No grading and topography changes are expected from the replacement of the water service lines. The Preferred Alternative's impact on surface topography and geology would be minimal given the site has been previously disturbed and is mostly flat. Temporary impacts to soil are anticipated from excavation and re-paving activities associated with the Proposed Action. Sediment control measures such as placement of silt fence and/or hay bales around catch basins would be adjusted to meet field conditions during all phases of construction. These measures would be constructed prior to and immediately after grading or disturbance of surface material on the Preferred Alternative. No short or long-term adverse impacts on the geology of the area are anticipated with the replacement of the water service lines.

Cultural Resources: None of the undertakings pursued under this EA would be located within an archaeologically sensitive area; however, lead service line removal is also proposed within a section of the Air Force Cambridge Research Laboratory (AFCRL) Historic District and located near zones of archaeological potential. All undertakings authorized under this EA would avoid impacts to sensitive areas. In sites in the vicinity of sensitive cultural/historical areas, hand digging will be used for excavation of soil from the point of connection to the water main along the entire length of the service line to be removed/replaced. This method will be utilized for the work proposed within the historic district on the base.

Noise: Adverse long-term noise impacts are not anticipated as a result of the Proposed Action. However, minimal and temporary noise impacts are anticipated. The Proposed Action would require excavation of pits and the repaving of any sidewalks or roadways disturbed from the removal and replacement of service lines. After implementation of the Preferred Alternative, noise levels are expected to be consistent with current background levels at Hanscom AFB.

Biological/Natural resources: The Preferred Alternative sites are located in already disturbed areas of the base. Impacts from excavation activities are anticipated to occur primarily in landscaped areas and will be minor and temporary. All work areas will be fully restored to existing conditions upon completion of work, including the use of native plant and grass species.

Infrastructure: The Preferred Alternative is not anticipated to result in adverse short or long-term impacts to infrastructure. The Proposed Action would occur solely within the main base; therefore, any potential traffic impacts from service line replacement activities would only affect the base. Impacts are anticipated to be temporary and minor. Temporary partial road closures of sections of frequently travelled roadways, Barksdale Street and Hartwell Avenue, may be required to carry out excavations as some service lines run under road surfaces.

Adverse long-term impacts to the water system on the base are not expected. Eleven of the 24 segments of water lines with unknown status are currently in service, while the remaining segments are listed as

abandoned. None of the water mains service residential properties or major industrial properties on the base; therefore, their removal and replacement would not have significant impacts to water distribution or consumption.

Occupational Health and Safety: Occupational safety and health procedures would be implemented as part of the excavation and replacement activities to ensure the safety and health of individuals at the worksite. Implementation of the Preferred Alternative would not result in direct or indirect impact on the safety and health of DAF employees and others at the site. The Preferred Alternative would be completed in accordance with all applicable federal, state, local, and applicable DAF regulatory safety standards. Contractors would be trained to identify and avoid safety hazards, such as those common to working around/with heavy equipment and electrically powered hand tools.

Solid Wastes and Hazardous Materials: The Preferred Alternative is not anticipated to result in adverse impacts on solid waste and hazardous materials management. Materials excavated will be restored at their current location after excavation of lead service lines. Therefore, except for lead service lines identified, no solid waste is anticipated to be produced.

Socioeconomic and Environmental Justice: Under the Preferred Alternative no adverse impacts on socioeconomics and environmental justice would occur. The Preferred Alternative would result in the long-term benefit of improving the water system at Hanscom AFB, thus contributing to enhancement of public health.

Public Involvement

A Notice of Availability (NOA) announcing the availability of the draft EA and FONSI for review on **DATE** was published in the following newspapers:

- Lexington Minuteman
- Concord Journal

In addition, the DAF issued a press release on **DATE** announcing the availability of the draft EA and FONSI. The NOA and press release invited the public to review and comment on the draft EA. The public and agency review period ended on **DATE**.

Copies of the draft EA and FONSI were posted to the Hanscom AFB public website for download and review at the following location:

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

1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction and Background

Drinking water at Hanscom Air Force Base (AFB) is supplied from the Towns of Lexington and Bedford, which both receive water from the Massachusetts Water Resource Authority (MWRA), which sources its water from the Quabbin Reservoir. Hanscom AFB is a controlled access federal facility located approximately 15 miles northwest of downtown Boston in Middlesex County, Massachusetts. The facility operates as an administrative hub for various military groups with some laboratory, residential, and research and development space. The drinking water system at Hanscom includes water mains, service lines, connections, meters, and sampling ports. There are no water storage facilities, treatment plants, or pump stations.

To ensure the public health and safety of those working and living at the Hanscom AFB, the Department of Defense (DoD) has established a goal for each military installation to comply with EPA drinking water standards including the most recent revisions to the Lead and Copper Rule (LCR).

In 1991, the EPA established the LCR to protect public health and reduce exposure to lead and copper in drinking water primarily by reducing water corrosivity. 40 CFR Part 141 Subpart I established a Maximum Contaminant Level Goal (MCLG) of zero for lead. Under the LCR, EPA required water systems to test for lead at the tap in certain homes, including those with lead service lines. Sample results were then compared to EPA's action level of 0.015 mg/L (15 parts per billion [ppb]). If ten percent of the samples from these systems had water concentrations greater than the action level, then the system was required to perform actions such as public education and lead service line replacement.

Over the years, the LCR has undergone revisions to enhance monitoring, treatment, customer awareness, and lead service line replacement. The most recent proposed revisions, known as the Lead and Copper Rule Revisions (LCRR), propose the following improvements:

- Introduces a trigger level of 10 ppb, which requires a more comprehensive response at the action level.
- Maintain the current MCLG of zero and the Action Level of 15 ppb. Water systems above 15 parts per billion would be required to fully replace a minimum of three percent of the number of known or potential lead service lines annually.
- Prepare and maintain a public lead service line inventory by October 16, 2024.

As an initial step to aligning with the LCRR, a Hanscom AFB Lead Service Line Investigation Report was developed. Through interviews and reviews of records, the report identifies all known and unknown materials and therefore potential lead service lines and components of the drinking water system on Hanscom AFB main base and FamCamp, an RV and tent campground located 3

miles outside of Hanscom Air Force Base in Bedford, MA. The housing area at Hanscom AFB was excluded from study because it is privatized. No intrusive or physical excavation or test pitting was conducted. Lines and components that were unidentifiable through interviews and the review of records are assumed potentially suspect of lead-containing materials unless otherwise justified. To identify components of unknown materials and to finalize the inspection, additional physical inspections/visual inspections requiring excavation at service lines are required (the Proposed Action). Identified lead service lines will be replaced and an inventory of all service lines maintained.

1.2 Location

Hanscom AFB is located outside Route 128/I-95 highway in the towns of Bedford, Lexington, and Lincoln in Middlesex County, Massachusetts (see **Figure 1**). The base occupies approximately 846 acres. Adjacent to the base is the Hanscom Field, an airport owned and operated by the Massachusetts Port Authority (Massport), part of which is located in the Town of Bedford to the north. To the west and south of Hanscom AFB is the National Park Service (NPS) Minute Man National Historical Park (MMNHP). To the south and east of the base is primarily residential with some conservation land.

1.3 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to protect human health by reducing lead exposure in water systems at Hanscom AFB. The need for the Proposed Action is to comply with EPA's LCRR regulations to prepare and maintain an inventory of service line materials and identify and replace potential lead service lines at Hanscom AFB. Lead services lines pose risks to human health and the environment.

1.4 Scope of Environmental Analysis

Hanscom AFB seeks to improve its understanding of the potential environmental consequences associated with conducting physical inspections to identify lead service lines and potential impacts from replacing lead service lines. An environmental impact analysis must be performed for each federal action that has the potential to impact the environment. The DAF implements compliance with the National Environmental Policy Act (NEPA) through its Environmental Impact Analysis Process (EIAP). This Environmental Assessment (EA) has been prepared to determine potential environmental impacts from physically investigating and, if needed, replacing identified lead-containing water service lines at Hanscom AFB.

According to the regulations and guidelines for implementing NEPA, the EA is a written analysis which serves to (1) provide analysis sufficient to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI); and (2) aid federal agencies in complying with NEPA when no EIS is required. If this EA were to determine that the proposed action would adversely degrade the environment, threaten public health or safety, or generate significant public controversy, then an EIS would be completed.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Scale 1:126,720
1 inch = 2 miles

0 1 2 Miles

Basemap: World Street Map, Esri

Note:
Hanscom Air Force Base (HAFB) is located approximately 15 miles to the northwest of Boston Logan International Airport.

Figure 1
Hanscom Air Force Base (HAFB) Regional Location Map

An EIS involves a comprehensive assessment of project impacts and alternatives, as well as a high degree of public input. Alternatively, if this EA results in a FONSI, then the action would not be subject to the preparation of an EIS. The EA is not intended to be a scientific document. The level and extent of detail and analysis in the EA is commensurate with the importance of the environmental issues involved and the information needs of both the decision-makers and the public.

1.6 Relevant Laws and Regulations

Applicable Environmental Regulations and Requirements:

- National Environmental Policy Act (NEPA) (42 United States Code (USC) 4321-4347)
- Council on Environmental Quality (CEQ, 1978) Regulations for Implementing the Procedural Provisions 195 of NEPA (40 Code of Federal Regulations (CFR) §§ 1500-1508) (revised 2022)
- 32 CFR Part 989, *Environmental Impact Analysis Process*
- Air Force Instruction (AFI) 32-7001, *Environmental Management*
- Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*
- Air Force Manual 32-7003, *Environmental Conservation*
- Air Force Instruction 32-1015, *Integrated Installation Planning*
- Air Force Instruction 32-1001, *Civil Engineer Operations*
- Department of the Air Force Manual 32-1067, *Water and Fuel Systems*
- Department of the Air Force Instruction 32-7020, *Environmental Restoration Program*
- Department of the Air Force Instruction 90-2002, *Interactions with Federally Recognized Tribes*
- Department of the Air Force Instruction 91-203, *Air Force Occupational Safety, Fire and Health Standards*
- Department of the Air Force Instruction 32-7020, *Environmental Restoration Program*
- Archaeological Resources Protection Act
- Federal Clean Air Act (CAA) (42 U.S.C. § 7401 et seq.)
- Federal Clean Water Act (CWA), 33 U.S.C. §1251 et seq.

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601 et seq.
- Endangered Species Conservation Act (ESA), 16 USCS § 1531, et seq.
- Executive Order (EO) 11988, *Floodplain Management*
- EO 11990, *Protection of Wetlands*
- EO 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416
- 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*
- EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*
- Massachusetts Surface Water Quality Standards, 314 CMR 4
- Massachusetts Endangered Species Act (MESA), 321 CRM 10.00
- The Massachusetts Wetlands Protection Act, 310 CMR 10.00
- National Historic Preservation Act (jointly administered with the MHC)
- Occupational Safety and Health Administration (OSHA) regulations
- Pollution Prevention Act, 42 U.S.C. §13101 et seq.
- Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 et seq.
- Toxic Substances Control Act, 15 U.S.C. 2601–2692
- 2021 Installation Energy Assurance Campaign Plan, Doing the Right Things for the Right Reasons.

1.7 Intergovernmental Coordination, Public and Agency Participation

Federal, state, and local agencies with jurisdiction that could be affected by the alternative actions were notified and consulted during the development of this EA. Appendix A contains the list of agencies consulted during this analysis and copies of correspondence.

Federal

- Environmental Protection Agency (EPA) Region 1

- U.S. Fish and Wildlife Service (USFWS) - Section 7
- Minute Man National Historic Park

State

- Massachusetts Historical Commission (MHC), State Historic Preservation Office (SHPO)

Local

- Town of Bedford (Board of Health, Water & Sewer)
- Town of Lexington (Board of Health, Water & Sewer)
- Town of Lincoln (Board of Health, Water & Sewer)
- Hanscom Area Towns Committee (Bedford, Lincoln, and Lexington)

1.5 Documents Incorporated by Reference

In accordance with Council on Environmental Quality (CEQ) regulations for implementing NEPA and with the intent of reducing the size of this document, the following material is incorporated by reference. These documents are part of the administrative record and are available upon request from the 66th Air Base Group/ Civil Engineering and infrastructure Engineering (66 ABG/CEIE).

- ***Environmental Assessment (EA) for Installation Development at Hanscom AFB, 2020 (EA IDP).*** Addresses proposed actions necessary to implement installation development as envisioned in the Hanscom AFB IDP. The IDP provides a roadmap for future development to ensure that Hanscom AFB's facilities, infrastructure, and resources are well managed in support of Hanscom AFB's mission and people, while balancing multiple resource constraints. In addition to evaluating the scope of development as envisioned in the IDP, the EA serves as a baseline environmental analysis for future mission planning.

1.8 Government to Government Consultation

Executive Order (EO) 13175, *Consultation and Coordination with Indian Tribal Governments* (6 November 2000), directs Federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with the National Historic Preservation Act (NHPA), 54 U.S.C. Section 306108, and its implementing regulations at 36 C.F.R. Part 800, federally recognized tribes that are affiliated historically with the Hanscom AFB geographic region will be invited to consult on all proposed undertakings that have the potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the Interagency/Intergovernmental Coordination for Environmental Planning (IICEP) processes and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations.

- The Hanscom AFB point-of-contact for Native American tribes is the Installation Commander or the Hanscom AFB Installation Tribal Liaison Officer.

- The Hanscom AFB point-of-contact for consultation with the Tribal Historic Preservation Officer (THPO) and the Advisory Council on Historic Preservation is the Cultural Resources Manager.

The Native American tribal governments consulted on the Proposed Action include the Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe. Initial consultation letters were sent on December 11, 2023. Responses received prior to the close of the public comment period will be addressed and incorporated into the final EA.

1.9 Public and Agency Review of EA

A Notice of Availability (NOA) announcing the availability of the draft EA and FONSI for review on **ADD DATE** was published in the following newspapers:

- Lexington Minuteman
- Concord Journal

In addition, the DAF issued a press release on [**DATE]** announcing the availability (NOA) of the draft EA and FONSI. Copies of the press release and the NOA are provided in Appendix B. The NOA and press release invited the public to review and comment on the draft EA. The public and agency review period ended on [**DATE]**.

Copies of the draft EA and FONSI were posted to the Hanscom AFB public website for download and review at the following location: https://www.hanscom.af.mil/About-Us/Fact-Sheets/Display/Article/379486/civil-engineering/

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The Proposed Action proposes to inspect water service lines at Hanscom AFB, create an inventory of existing service lines, identify potential lead service lines, and remove lead service lines. **Figure 2** shows the location of potentially suspect lead service lines to be inspected and replaced. The EA will discuss the need for the proposed action, compare the proposed action to the No-Action Alternative, describe the affected environment and the environmental impacts of the proposed action, and present proposed management practices.

2.2 Selection Standards and Criteria

NEPA and CEQ regulations mandate the consideration of reasonable alternatives for the Proposed Action. "Reasonable alternatives" are those that could also effectively meet the purpose and need for the Proposed Action. Per the requirements of 32 CFR Part 989, the USAF's EIAP regulations, selection standards are used to identify alternatives for meeting the purpose and need for the USAF action.

Alternatives for the Proposed Action for this undertaking must meet the following selection standards to fulfill the purpose and need:

1. Meet EPA and state requirements;
2. Protect human health and the environment;
3. Support continual mission growth; and
4. Have an efficient approach.

All reasonable alternatives were considered during the development of this Project. Removal of lead service lines is the only viable option to meet this requirement. **Table 2-1** evaluates the different criteria against the alternatives considered. To be considered a reasonable alternative, the alternative must meet all four selection standard criteria.

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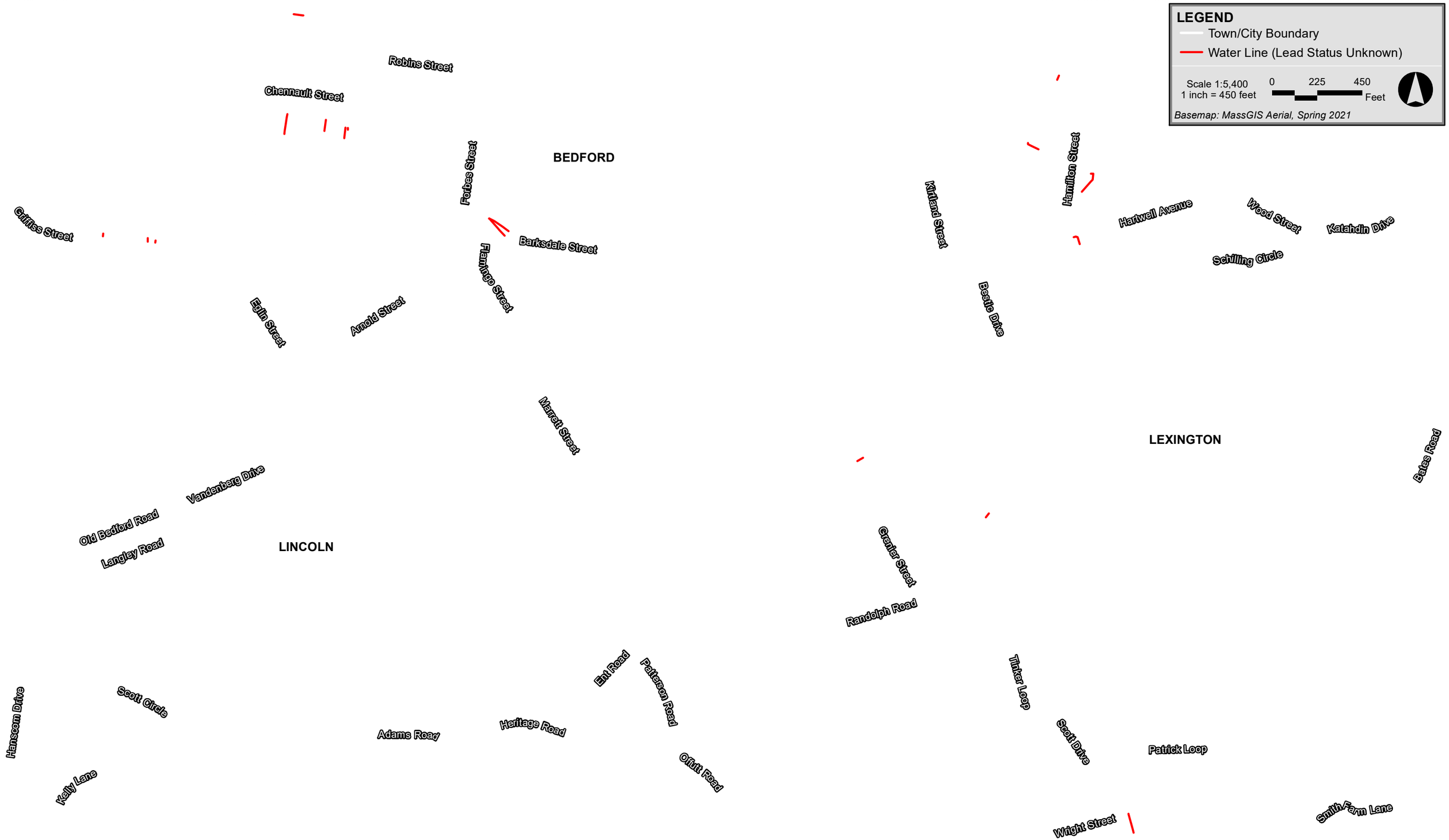
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Figure 2

Overview of Potentially Lead Containing Pipe Segments

Table 2-1 Evaluation of Reasonable Alternatives

ALTERNATIVES	Selection Standards			
	Meet EPA and state requirements	Protect human health and the environment	Support continual mission growth	Efficiency of approach
	(1)	(2)	(3)	(4)
Alternative 1 (Preferred Alternative) - Complete physical inspections of unknown lines and components and remove all identified lead service lines and components at Hanscom AFB.	**YES**	**YES**	**YES**	**YES**
Alternative 2 – Remove all unknown lines and components identified as potentially suspect lead-containing service lines and components at Hanscom AFB.	**YES**	**YES**	**YES**	**NO**
Alternative 3 - Complete physical inspections of unknown lines and components and monitor lead levels. Identified lead service lines and components at Hanscom AFB would not be removed unless action levels are reached under the LCRR.	**YES**	**NO**	**NO**	**YES**

2.3 Alternatives Carried Forward for Analysis

The evaluation of alternatives resulted in only two alternatives being carried forward for full analysis in the EA: the Alternative 1 and the "No-Action" alternative.

2.3.1 Alternative 1 (Preferred Alternative) – Inspect & Remove all Identified Lead Service Lines

Alternative 1 would complete inspections of unknown lines and components and remove all identified lead service lines and components at Hanscom AFB.

Undertaken by Base Civil Engineering Division, the Lead Service Line Investigation and Report MXRD22EA02 (May 2023), identifies 24 potentially suspect lead-containing water service line at Hanscom AFB. The study first eliminated all pipe segments that met the following criteria: 1) General material listed as plastic; 2) Pipe diameter listed as 3" or greater; and 3) Pipe installation date after 1990. Pipes meeting these criteria are unlikely to contain lead. The pipe diameter criterion is based on the assumption that lead was most commonly used for pipes 2" or smaller

(as stated in the EPA Lead Copper Rule (LCR) and Air Force Civil Engineer Center (AFCEC) documentation). The installation date criterion is based on the 1986 amendment to the Safe Drinking Water Act, which banned the use of lead pipes.

The second component of the inspection was to conduct in-person interviews with Hanscom AFB personnel who have had direct involvement in the construction, demolition, and maintenance of water lines at the base. This included personnel from 66th Civil Engineering Division Installation Management (CEI) and Operations (CEO). These interviews were used to determine if further information could be provided to rule out the likelihood of lead contamination in any of the pipe segments for which lead status was unknown. Interviews with base personnel identified the following properties, which were used to identify non-lead containing segments:

- Previously removed, or capped and abandoned (disconnected from the active water distribution network);
- Renovated/replaced after 1990, ruling out lead or galvanized pipe; and
- Pipe material or diameter known, ruling out lead or galvanized pipe.

Some pipe segments are adjacent to sections of the same line, while others consist of multiple service lines to a single building. In total, there are 12 buildings or locations with water lines that have an unknown lead status. The report did not find any pipes on the base that were conclusively lead or galvanized. The 24 pipe segments identified as potentially suspect lead-containing represent all segments where there was not enough evidence to rule out the possibility of lead or galvanized material. Suspect lead lines and components are identified in **Figure 1**.

Investigations and Removals

Physical inspections/test pits will be conducted by a mechanical excavator such as a backhoe to dig a test pit down to the service line to expose it. However, prior to the excavation of test pits, a Ground Penetrating Radar (GPR) survey will be performing to locate the pipe. An expected area of disturbance of approximately four feet to each side of the service line will result from removal of topsoil, sidewalk, or other surfaces. Physical excavation to the service line for inspection and testing has been shown to have a higher accuracy rate than other methods because a longer length of pipe segment is exposed for observation. For purposes of this EA, and to determine the maximum extent of disturbance from physical pipe segment inspections, test pits totaling upward of ten feet around the service line are assumed.

Figure 3 identifies an approximate area of disturbance resulting from physical inspections and removal actions for each pipe segment (approximately 130 sf). A total area of disturbance of up to approximately 2,197 sf is anticipated from physical inspections of all 24 segments. As demonstrated in **Figure 3**, most of the areas for inspection are within previously disturbed areas (pavement, roadways, sidewalks, landscaping).

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_Index.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Map Sheet

Scale 1:6,000
1 inch = 500 feet

0 250 500 Feet

Basemap: MassGIS Aerial, Spring 2021

CONCORD
BEDFORD
LINCOLN
LEXINGTON
Robins Street
Chennault Street
Griffiss Street
Forbes Street
Barksdale Street
Flamingo Street
Arnold Street
Eglin Street
Vandenberg Drive
Langley Road
Old Bedford Road
Hanscom Drive
Scott Circle
Kelly Lane
Adams Road
Heritage Road
Hickam Lane
Wells Terrace
Ent Road
Patterson Road
Orfuitt Road
Marrett Street
Dow Street
Hunter Street
Kirtland Street
Hamilton Street
Hartwell Avenue
Bestio Drive
Wood Street
Katahdin Drive
Schilling Circle
Bates Road
Springdale Road
Grenier Street
Randolph Road
Tinker Loop
Scott Drive
Patrick Loop
Conestoga Road
Wright Street

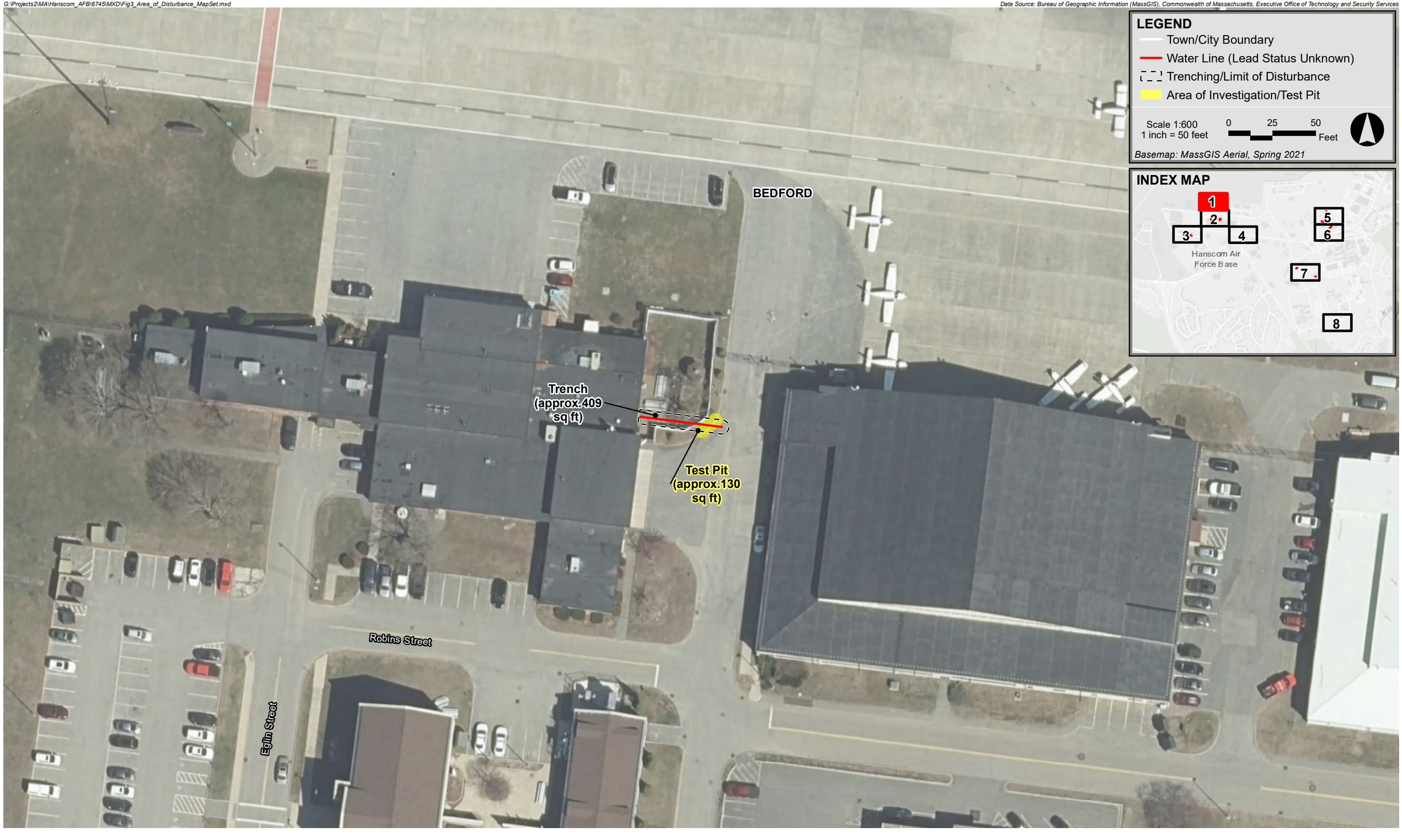
Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 3, Index
Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

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Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 3, Map Sheet 1 of 8
Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 3, Map Sheet 2 of 8

Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

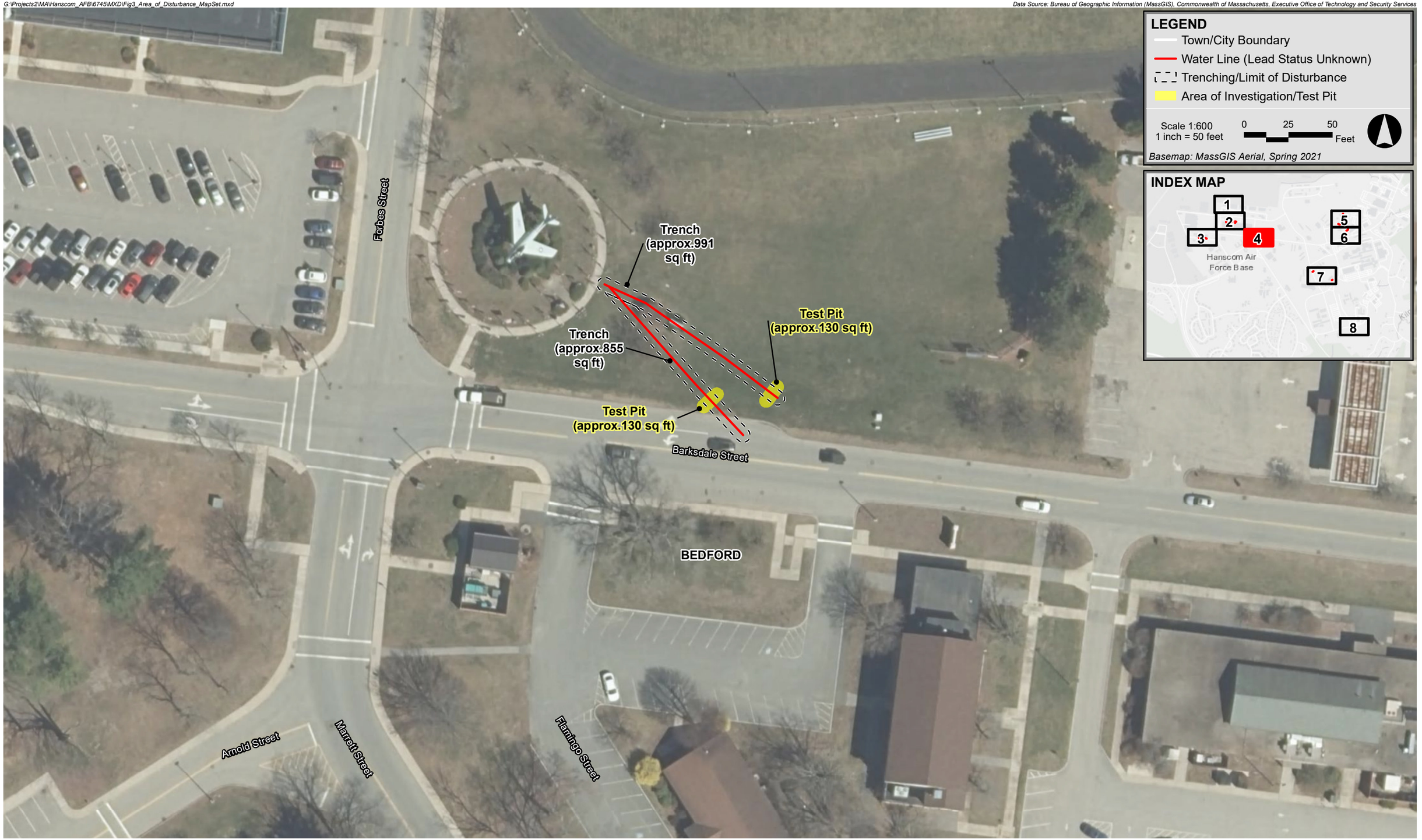
Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 3, Map Sheet 3 of 8
Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 3, Map Sheet 4 of 8
Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

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Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 3, Map Sheet 5 of 8
Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 3, Map Sheet 6 of 8
Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 3, Map Sheet 7 of 8
Approximate Area of Disturbance

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig3_Area_of_Disturbance_MapSet.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Town/City Boundary
- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 3, Map Sheet 8 of 8
Approximate Area of Disturbance

Testing for lead during physical inspections is anticipated to be conducted via a scratch and/ or magnet test. When lead service line pipes and components are scratched, the exposed outside pipe surface area will appear shiny silver and flake off. In a magnet test, if the pipe is lead, the magnet will not stick to the lead pipe. Lead test kits can also identify lead pipes by using surface swab kits approved for lead paint that change color after coming into contact with lead surfaces.

Pipes identified as lead containing during the inspection phase are proposed to be removed. **Figure 3** identifies the approximate limits of disturbance associated with removal actions, which may be up to four feet on each side of the service lines, and result in approximately 7,945 sf of disturbance for all 24 segments.

Removal methods for potential lead service lines may consist of the following:

- Open Trench – Open trench removal is an approach that requires excavation of soil from the point of connection to the water main along the entire length of the service line to be removed/replaced.

- Replacement/New Pipe Routes – This method installs a new pipe along a different route using a trenchless method such as guided boring. Access pits are excavated at the point of connection at the water main and at the pipe's curb stop. The discarded pipe is left in the ground.

- Hand Digging – In sensitive cultural/historical areas, hand digging will be employed for excavation of soil from the point of connection to the water main along the entire length of the service line to be removed/replaced.

- Replacement/Pipe Pulling – This is a typically used method that removes or displaces the existing pipe, and at the same time replaces it with a new pipe. In this technique, an access pit is dug and the lead service line disconnected from interior connections. A cable is then run through the existing lead pipe, and the cable is pulled from the access pit using a backhoe or winch, pulling with it the lead service line. A new replacement pipe would be pulled into the ground simultaneously.

2.3.2 No Action Alternative

Under the No Action Alternative, Hanscom AFB would not conduct physical inspections or remove lead water service lines. There would be no ground disturbance or temporary disruption to Hanscom AFB infrastructure. Existing service lines would continue to supply water within the base to office buildings, work areas, and other public water dispensing locations. The No Action Alternative is considered the baseline from which all other environmental analyses are compared.

2.4 Alternatives Considered But Not Carried Forward for Analysis

The following alternatives were excluded from full analysis because they did not meet one (or more) of the selection standards:

2.4.1 Alternative 2 - Remove all Unknown Lines and Components Identified as Potentially Suspect Lead-Containing Service Lines and Components at Hanscom AFB.

Alternative 2 is not further evaluated in this EA. This alternative would remove all unknown lines and components identified as potentially suspect lead-containing service lines and components at Hanscom AFB. Physical inspections of pipe materials to determine the presence of lead service line or components is not included in this alternative. This alternative does not meet the purpose and need because it may result in disturbance to water infrastructure that would not be required to be replaced to meet the requirements of the LCRR and does not achieve efficiency of mission goals for the base by potentially removing non-lead service line pipes.

2.4.2 Alternative 3 - Complete Physical Investigations of Unknown Water Service Lines & Monitor Water Quality Unless LCRR Action Levels are Reached.

Complete physical inspections of unknown lines and components and continue to monitor lead levels in water to determine if the LCRR action level of 10 ppb is triggered. Under this alternative, identified lead service lines and components at Hanscom AFB would be planned for mitigation and/or removal if lead levels exceed the action level of 10 ppb. This alternative does not meet the purpose and need because it does not meet the goals of protecting human health by reducing lead exposure in water systems at Hanscom AFB

2.5 Project Specific Regulations and Permit Requirements

- **The DAF Environmental Impact Analysis Process (EIAP).** The EIAP is codified in 32 CFR Part 989 and provides procedures for environmental impact analysis. An EA should be prepared to conduct detailed inspections, studies, surveys, research, and analyses relating to ecological systems and environmental quality.

- **National Historic Preservation Act of 1966 (NHPA)**. Several laws and regulations are pertinent to the treatment of cultural resources, including, but not limited to, the NHPA, as amended, the Archaeological Resources Protection Act of 1979, and AFMAN (Air Force Manual) 32-7003, *Environmental Conservation*. To comply with Section 106 of the NHPA, the DAF consults with the State Historic Preservation Officer (SHPO) if an undertaking is proposed that could affect historic properties.

- **The Endangered Species Act (ESA).** The ESA directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the Act. Section 7 of the Act, called "Interagency Cooperation" is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. To comply with Section 7 of the ESA, the DAF consults with the United States Fish and Wildlife Service (USFWS) if an undertaking is proposed that could affect listed species. Similarly, the USAF consults with the Massachusetts Division of Fisheries and Wildlife's Natural Heritage and

Endangered Species Program (NHESP) to consider the impacts that an undertaking may have on state-listed species.

In place of these consultations, a “No Effect" determination is in effect for undertakings carried out in Hanscom AFB between October 2, 2018 and October 1, 2023, and extended through March 2024, unless subsequently rescinded based on newly acquired science or information (See Appendix C). Acoustical surveys conducted in 2018 by the USAF failed to indicate the presence of the Northern Long Eared Bat (NLEB) within the areas of the main base. Based on the surveys’ findings and that no known maternity roost trees, trees that provide habitat, or hibernaculum for the species are located within the vicinity, the DAF determined that proposed undertakings within the boundaries of the main base would have "No Effect" on the NLEB.

- **United States Environmental Protection Agency (USEPA) – National Pollutant Discharge Elimination System (NPDES)**. General Permit for Stormwater Discharges from Construction Activities – This Construction General Permit (CGP) authorizes stormwater discharges from construction activities that result in a total land disturbance of one acre or more, where those discharges enter surface waters or a municipal separate storm sewer system (MS4) leading to surface water.

- **Clean Water Act Section 303(d)** – **Impaired Waters and Total Maximum Daily Loads (TMDLs).** The goal of the Clean Water Act (CWA) is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C §1251(a)). Under section 303(d) of the CWA, states, territories, and authorized tribes, collectively referred to in the act as "states," are required to develop lists of impaired waters. These are waters for which technology-based regulations and other required controls are not stringent enough to meet the water quality standards set by states. The law requires that states establish priority rankings for waters on the lists and develop Total Maximum Daily Loads (TMDLs) for these waters. A TMDL includes a calculation of the maximum amount of a pollutant that can be present in a waterbody and still meets water quality standards.

- **Massachusetts Department of Environmental Protection (MassDEP) – Air Plan Approvals.** Projects may need to obtain a MassDEP air quality plan approval before starting work on a project that adds a new emissions source, or changes or replaces an existing source, unless it qualifies for an exemption or an alternative compliance pathway.

- **Massachusetts Water Resources Authority (MWRA) Sewer Use Discharge Permit.** In accordance with Massachusetts Water Resources Authority (MWRA) Sewer Use Regulations, 360 C.M.R. §§ 10.007, 10.052, 10.072, and 10.092, users must complete and file a Sewer Use Discharge Permit Application. The Application must be filed with the MWRA and the Municipality in which the sewer user’s discharge is located**.**

- **USEPA Municipal Separate Storm Sewer Systems Permit.** Hanscom AFB was issued a NPDES General Permit for Stormwater Discharges from small Municipal Separate Storm

Sewer Systems (MS4 General Permit) in Massachusetts in 2016. The jointly issued EPA-MassDEP permit grants authorization by EPA and MassDEP to discharge stormwater from the base's MS4 in accordance with the applicable terms and conditions of the MS4 General Permit, including all relevant and applicable appendices.

- **Federal Aviation Administration (FAA) Navigable Airspace Notice of Proposed Construction** - **49 U.S.C. §44718 and 14 C.F.R. Part 77**. Due to its proximity to the airfield, Hanscom AFB may be required to file notice under 14 C.F.R §77.9 to the FAA, a completed FAA Form 7460–1, Notice of Proposed Construction or Alteration. FAA Form 7460–1 must be submitted at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest.

- **Hanscom Air Force Base Contractor Environmental Guide (CEG) 2018**. The Hanscom AFB CEG addresses environmental aspects and impacts that often influence Hanscom AFB. Contractors are required to familiarize themselves with Hanscom AFB's Environmental Management System and environmental regulatory requirements and to provide evidence of compliance prior to initiating construction.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The Region of Influence (ROI) for the Proposed Action is the main base, north of the on-base housing, unless otherwise specified below for a particular resource area. The main base consists of 846 acres within the towns of Bedford, Lexington, and Lincoln, MA, and can be characterized as developed with an airfield, laboratories, offices, and housing throughout the property (Hanscom AFB 2020). During the initial Hanscom AFB Lead Service Line Investigation, no pipes of concern were identified in Hanscom AFB FamCamp. Therefore, FamCamp is not included in the ROI.

3.1 Resources Not Carried Forward for Analysis

Air Installations Compatible Use Zone

The purpose of the Air Installations Compatibility Use Zone (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.

Hanscom AFB does not own or operate a military airfield, nor would the Proposed Action affect airfield usage or aircraft operations. No airspace would be reconfigured, new units created, or an increase in air operations and/or changes in mission flying activities as a result of the Proposed Action. Therefore, no potential impacts on the airspace are anticipated. The AICUZ program is not applicable and will not be analyzed in this EA.

3.2 Resources Carried Forward for Analysis

In compliance with NEPA, CEQ regulations, and the DAF EIAP, the affected environment focuses only on resources with the potential to be impacted by the implementation of the Proposed Action at the Preferred Alternative site. The discussion of the affected environment and associated environmental impacts analysis presented here focuses on the following resource areas: air quality, land use, water resources, soils and geologic resources, cultural resources, noise, biological/natural resources, infrastructure, occupational health and safety, solid wastes and hazardous materials, and socioeconomic and environmental justice.

3.2.1 Air Quality

Air quality is defined by ambient air concentrations of specific pollutants determined by the USEPA to be of concern related to the health and welfare of the general public and the environment and are widespread across the United States. An air quality assessment may be needed for any federal action to determine compliance with a number of federal regulations including NEPA, CAA, and other environment-related regulations and directives that are specific to airports and air bases. The general federal as well as specific DoD/ USAF regulations and orders are summarized below.

3.2.1.1 General Federal Requirements

National Environmental Policy Act (NEPA) – All decisions by the Federal Government are regulated under NEPA and its amendments, which was established to protect the human environment and for the establishment of a Council on Environmental Quality (CEQ). The act specifies polices and goals for and environmental assessment of any impact on the "natural world," including on air quality.

Council on Environmental Quality (CEQ) – Implementation of NEPA provisions is regulated by CEQ. Under CEQ regulations, potential environmental effects of Federal actions require notification and involvement of the public and therefore emphasize early integration of the NEPA process in the project planning, as well as consultation with the appropriate federal, state, and local agencies early in the process. These regulations also describe the appropriate environmental documentation for compliance with NEPA (e.g., Environmental Assessment, Finding of No Significant Impact, Environmental Impact Statement).

Executive Orders – The analysis of environmental impacts may also be affected by several Executive Orders related to NEPA including, for example, Executive Order 11514*, Protection and Enhancement of Environmental Quality* and Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and Executive Order 11593, *Protection and Enhancement of the Cultural Environment*.

Clean Air Act (CAA) - The CAA of 1970, with updates in 1990, is the primary federal statute governing air quality. Under authority of the CAA, the USEPA sets the maximum acceptable concentration levels for specific pollutants that may impact the health and welfare of the public. With USEPA oversight, states may set concentration levels for additional pollutants not regulated by the USEPA. Under the CAA, USEPA has established National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The CAA identifies two types of national ambient air quality standards. Primary standards provide public health protection, including the health of the "sensitive" population such as those who are asthmatic, children, and the elderly. Secondary standards provide public health protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The USEPA established NAAQS for six principal pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO2), ozone (O3), particle matter (PM) including particulate matter equal to or less than 2.5 microns in diameter (PM2.5), and particulate matter equal or less than 10 microns in diameter (PM10), and sulfur dioxide (SO2). The NAAQS are listed in **Table 3-1**. Massachusetts recently revised their codified standards to be identical to NAAQS.

US EPA reports air pollution concentrations with respect to how the health-based NAAQS are defined. These are called design values. For example, some standards are not to be exceeded such as the annual NO2 standard, and some standards are compared to the 98th percentile of 24-hr averages or a 1-hr daily maximum, averaged over 3 years, like the short-term PM2.5 and the NO2 standards, respectively.

Table 3-1 National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Period	NAAQS (µg/m³) *Primary*	*Secondary*
NO_2	Annual [1]	100	Same
	1-hour [2]	188	None
SO_2	3-hour [3]	None	1300
	1-hour [4]	196	None
$PM_{2.5}$	Annual [1]	12	15
	24-hour [5]	35	Same
PM_{10}	24-hour [3]	150	Same
CO	8-hour [3]	10,000	Same
	1-hour [3]	40,000	Same
Ozone	8-hour [6]	147	Same
Pb	3-month [1]	0.15	Same

Source: http://www.epa.gov/ttn/naaqs/criteria.html and 310 CMR 6.04 [EPA]

[1] Not to be exceeded.

[2] 98th percentile of one-hour daily maximum concentrations, averaged over three years.

[3] Not to be exceeded more than once per year.

[4] 99th percentile of one-hour daily maximum concentrations, averaged over three years.

[5] 98th percentile, averaged over three years.

[6] Annual fourth-highest daily maximum eight-hour concentration, averaged over three years.

NAAQS specify concentration levels for various averaging times and include both "primary" and "secondary" standards. Primary standards are intended to protect human health, whereas secondary standards are intended to protect public welfare from any known or anticipated adverse effects associated with the presence of air pollutants, such as damage to vegetation. The NAAQS also reflect various durations of exposure. The short-term periods are typically 24 hours or less. Long-term periods refer to limits that average over three months or longer.

The NAAQS are applicable to all the US and its territories. An area that is not in compliance with the NAAQS is deemed in nonattainment. If there is insufficient data to determine compliance, then an area is deemed unclassified and is treated as if in compliance. Attainment with the NAAQS is based on data that is collected from a network of air monitoring sites across the country. The primary responsibility to ensure compliance with the NAAQS is assigned in the CAA to the individual states and any nonattainment areas require states to establish a State Implementation Plan (SIP) to reach compliance. The general conformity rules only apply to areas that have been deemed to be in nonattainment or in maintenance (i.e., areas that were formally in nonattainment but have been in attainment for a period of 10 to 20 years).

General Conformity Rule. Established under CAA (section 174(c)(4)), the General Conformity Rule (40 CFR Part 93 Subpart B) helps states and tribes improve air quality in the areas that do not meet the NAAQS. The General Confirmatory Rule applies to federal actions that are taken in designated nonattainment or maintenance areas. The purpose of the General Conformity Rule is to ensure that federal actions do not cause or contribute to new violations of NAAQS, do not

worsen existing violations of the NAAQS, and do not delay attainment of the NAAQS. The USEPA classifies the air quality in an air quality control region (ACQR) or its subareas. The areas designated for each of the six pollutants under ACQR are either "attainment," "nonattainment," or "unclassified." Attainment means that the air quality within an area is better than NAAQS, nonattainment indicates that one or more of the six principal pollutants exceed NAAQS, and unclassified means that there is not enough information for the area to be classified.

DoD/DAF-Specific Regulations

U.S. Air Force Policy Directive (AFPD) 32-70, *Environmental Considerations in Air Force Programs and Activities* – Formerly *Environmental Quality*. This directive establishes a policy to address environmental considerations in all Air Force programs and activities using a management system framework.

U.S. Air Force Instruction (AFI) 32-1015, *Integrated Installation Planning*. Supersedes AFI 32-7061, *Environmental Impact Analysis Process (EIAP)* – provides specific procedures for implementing AFPD 32-70.

Environmental Impact Analysis Process*, Desk Reference* – This document is a guide for complying with the requirements of the NEPA developed for Air Force staff and includes reference materials to help ensure compliance with applicable environmental requirements.

3.2.1.2 Affected Environment

3.2.1.2.1 Attainment Status and Conformity

The EPA is required to publish a list of the geographic areas that are either not in compliance or in compliance with the NAAQS (Section 107 of the 1977 CAA Amendments). The attainment status for Middlesex County is shown in **Table 3-2**. As the table shows, all of Massachusetts is in attainment of all the NAAQS; therefore, the General Conformity regulations do not apply to Middlesex County.

Table 3-2 Attainment Status for Middlesex County

Pollutant	Attainment Status
NO_2 (1-hour and annual)	Unclassifiable/Attainment
SO_2 (1-hr)	Unclassifiable/Attainment
$PM_{2.5}$	Unclassifiable/Attainment (2012)
PM_{10} (24-hour)	Unclassifiable/Attainment
CO (1 and 8-hour)	Unclassifiable/Attainment
Ozone (8-hour)	Unclassifiable/Attainment (2015)/Nonattainment (1997)
Pb (rolling 3-month)	Unclassifiable/Attainment

Source: 40 CFR 81.322, EPA's Green Book, and Massachusetts 2022 Air Quality Report [Mass]

3.2.1.2.2 Background Air Quality

To estimate background pollutant levels representative of the area, the most recent US EPA design values[1] were obtained for 2020 to 2022 for the criteria pollutants. The closest and most representative monitoring station for which data are available for all air pollutants is generally selected. The monitoring station at Harrison Avenue in Boston was selected for the Proposed Action. This station is in an urban area near major roads so would generally be considered a conservatively high estimate of background air concentrations. The Harrison Avenue monitor is located roughly 14 miles southeast of Hanscom Air Force Base.

Table 3-3 presents the background air quality concentrations for all the criteria air pollutants.

Table 3-3 Observed Ambient Air Quality Design Concentrations at the Harrison Avenue monitor relative to the NAAQS.

Pollutant	Averaging Time	Design Concentration ($\mu g/m^3$)	NAAQS	Percent of NAAQS
NO_2 (1)	1-Hour	84.6	188	45%
	Annual	18.8	100	19%
SO_2(2)	1-Hour	5.2	196	3%
$PM_{2.5}$	24-Hour (3)	15	35	43%
	Annual (3)	6.2	12	52%
PM_{10}	Max 24-hr	28	150	19%
CO (4)	1-Hour	1833.6	40000	5%
	8-Hour	1260.6	10000	13%
Ozone(5)	8-Hour	119.7	147.0	81%
Pb	Max 24-hr	0.003	0.15	2%

Notes:
From Air Quality Design Values | US EPA. or EPA's AirData Website [EPA]
(1) NO_2 concentrations are reported in ppb. Converted to $\mu g/m^3$ using factor of 1 ppb = 1.88 $\mu g/m^3$.
(2) SO_2 reported ppb. Converted to $\mu g/m^3$ using factor of 1 ppb = 2.62 $\mu g/m^3$.
(3) Background level is the average concentration of the three years.
(4) CO is reported in ppm. 1 ppm = 1150 $\mu g/m^3$.
(5) O_3 reported in ppm. Converted to $\mu g/m^3$ using factor of 1 ppm = 1963 $\mu g/m^3$.

As shown in **Table 3-3** background ambient air concentrations are well below their respective NAAQS standards. These background concentrations are considered conservative background concentrations as they are representative of an urban area with higher traffic volumes and generally higher density of other emission sources.

The excavation and replacement of lead pipes is anticipated to only result in temporary impacts. Temporary localized air emissions are expected to have minimal impact to ambient

[1] Air Quality Design Values | US EPA. A design value is reported by US EPA in the correct format for comparison with the NAAQS.

concentrations and would be minimized using construction equipment meeting EPA standards for engines and through construction best management practices.

3.2.1.2.3 Air Conformity Applicability Model

The description of the Air Conformity Model (ACAM) states the following:

The Air Force's ACAM is an air emissions estimating model that performs an analysis to assess the potential air quality impacts associated with an Air Force action (e.g., MILCON) in accordance with the Air Force Manual 32-7002, Clean Air Act (CAA Section 176(c)), Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). The ACAM model estimates air emissions for activities associated with the proposed action and performs an analysis against regulatory thresholds; standardizing/simplifying methodologies across the AF and greatly reducing cost.[2]

The ACAM provides estimates of pollutant emissions from new construction at or associated with facility projects.[2] As noted above, the Proposed Action is in Middlesex county, Massachusetts, which is an area determined to be in compliance with all the recent NAAQSs, but in nonattainment of the older 1997 ozone NAAQS. Therefore, an ACAM analysis is warranted. As part of the proposed EA, an ACAM analysis was conducted for the Proposed Action at the base during the proposed six-month construction period in 2024. The results of the analysis show that emissions of all potential excavation and re-paving activities would have a *de minimis* impact on the air quality, with all NAAQS emissions well below threshold limits. Overall, the analysis showed that the air conformity rules were not applicable. ACAM was run for only the Proposed Action and reports can be found in Appendix D. The Action includes trenching/excavation and paving.

3.2.1.3 Environmental Consequences

Preferred Alternative

The Preferred Alternative would involve excavation and re-paving activities within Hanscom AFB. As noted above, EPA has listed Hanscom AFB as nonattainment of the 1997 ozone NAAQS, although Middlesex county is in attainment with all the most recent and stringent NAAQS. As part of the Hanscom IDP EA, a comprehensive ACAM evaluation was conducted. The results show that for all planned construction activities between the years 2020 and 2028, emissions of all NAAQS would be well below the threshold, at *de minimis* levels, indicating that the General Conformity Rule does not apply. These results are consistent with the ACAM analysis (see Appendix D) that was done for the Preferred Alternative. Therefore, although some increase in air pollutant emissions is expected during excavation and re-paving activities, they would not be significant and would be temporary. Best management practices (BMP) would be applied during excavation and re-paving activities, to the maximum extent possible. As a result, no adverse impacts on the air quality are expected from the Preferred Alternative.

[2] Air Conformity Applicability Model (ACAM). https://aqhelp.com/acam.html

No Action Alternative

Under the No Action Alternative, no excavation and paving activities would take place; therefore, there would be no increase in emissions. As a result, no adverse impacts would occur with the implementation of the No Action Alternative.

3.2.2 Land Use

Land use is defined as the classification of the way land is utilized to represent the economic and cultural activities (i.e., agricultural, residential, industrial, mining, and recreational uses) that are practiced at a given place. There are currently twelve land use categories associated with the installation at Hanscom AFB: airfield, aircraft operation and maintenance, industrial, administrative, community (commercial), community (service), medical, housing (accompanied), housing (unaccompanied), outdoor recreation, open space, and water. Changes to land use are constantly occurring at many levels. The changes can have specific and cumulative effects on air and water quality, watershed function, generation of waste, extent and quality of wildlife habitat, climate, and human health. Land use is often codified by local zoning laws and regulations.

3.2.2.1 Affected Environment

Land use at the Preferred Alternative sites area primarily within areas of the base previously developed, including buildings, paved areas for roadways and parking, landscape areas including grasses and plantings.

3.2.2.2 Environmental Consequences

Preferred Alternative

The Preferred Alternative does not propose any changes in land. The Proposed Action is compatible with current land use plans. Practicable BMPs would be adopted to minimize impacts on land use, including restoring disturbed areas to existing conditions. No adverse land use impact is anticipated from the implementation of the Proposed Action.

No Action Alternative

No excavation and paving activities are proposed under the No Action Alternative; therefore, no land use impacts would result.

3.2.3 Water Resources

Water resources are surface waters and groundwater that are important in providing drinking water and in supporting recreation, transportation, commerce, industry, agriculture, and aquatic ecosystems. Water resources include groundwater, surface water, stormwater/rainfall, wetlands, and floodplains (see **Figure 4**).

3.2.3.1 Affected Environment

3.2.3.1.1 Groundwater

Groundwater exists in the saturated zone beneath the earth's surface and includes underground streams and aquifers. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes.

Groundwater at Hanscom AFB averages between 10 to 20 feet below ground surface (bgs); and is commonly encountered from three to seven feet bgs near wetlands, in the lower elevations of the base. Groundwater flow is mostly controlled by surface drainage features and storm drainage systems. Groundwater flow in the lower and bedrock aquifers typically follow the topography of the area.

3.2.3.1.2 Surface Waters

Surface water is defined as any water on the earth's surface such as lakes, ponds, rivers, and streams. Surface water sustains ecological systems and provides habitats for many plant and animal species.

The headwaters of the Shawsheen River, a tributary to the Merrimack River, are located on Hanscom AFB. Runoff flows north through a culvert near the intersection of Marrett Street and Vandenberg Drive and flows along the eastern edge of Massport's airfield. The river is typically confined by steep slopes, ranging from seven to fifteen feet high. The Shawsheen River has been designated by MassDEP as a Class B water body (suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses) and as such, is protected as habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation.

Most of the surface runoff from Hanscom AFB enters a subterranean system of culverts and drains into the Shawsheen River. Surface runoff from the eastern portion of the base drains eastward into Kiln Brook, which also flows into the Shawsheen River.

The Shawsheen River has a total drainage area of approximately 78 square miles, and encompasses approximately 12 Massachusetts municipalities, including Bedford where its headwaters originate. Representing one of the smaller watersheds in the state, the main stem of the Shawsheen River flows 25 miles from the east side of Hanscom Field, losing 70 feet in elevation as it travels to its confluence with the Merrimack River in Lawrence.

The watershed supports a population of approximately 250,000 people. The Shawsheen River has a Draft Total Maximum Daily Load for Stormwater Pollutants (Shawsheen Headwaters 2003) published by MassDEP, inclusive of Hanscom Airfield and Hanscom AFB. There is also a Final TMDL for bacterial pathogens for the Shawsheen River for bacterial pollutants (Shawsheen River Basin 2002) [Hanscom AFB].

3.2.3.1.3 Floodplains

Floodplains are lowland areas adjacent to surface water bodies that are periodically covered by water during flooding events. Flood hazard areas identified on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1 % chance of being equaled or exceeded in any given year (or 100-year flood). Moderate flood hazard areas are also shown on the FIRM and are the areas between the limits of the base flood and the 0.2 % annual chance of being equaled or exceeded in any given year (or 500-year flood).

According to FEMA flood map panels 25017C0383F, effective on 07-JUL-2014, and 25017C0384F, effective on 07-JUN-2016, the Preferred Alternative is not located within a 100-year floodplain.

3.2.3.1.4 Wetlands

The U.S. Army Corps of Engineers (USACE) and the USEPA define wetlands as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (USACE, 1987).

Hanscom AFB contains a diverse network of interconnected wetland systems. A Base Comprehensive Ecological Analysis report completed by LEC Environmental Consultants, Inc. in August 1997 and updated in September 2007, documents and evaluates vegetational communities, wildlife habitat and utilization, and endangered species at Hanscom AFB. According to the report, wetlands encompass approximately 43 acres, or five percent, of the main base. In the vicinity of the Preferred Alternative, there are no wetlands.

3.2.3.1.5 Stormwater

Stormwater runoff, which originates from rain and/or snowmelt events, can collect pollutants by flowing over land or impervious surfaces, such as paved roadways. Stormwater is typically captured and evaporated, infiltrated into the ground water, or flows into nearby surface waters. Stormwater at Hanscom AFB drains into the stormwater inlets present on the base. There are also retention basins for stormwater runoff prior to it entering the storm drainage system.

Stormwater management features such as catch basins are generally located in the vicinity of the Preferred Alternative, along roadways and parking lots.

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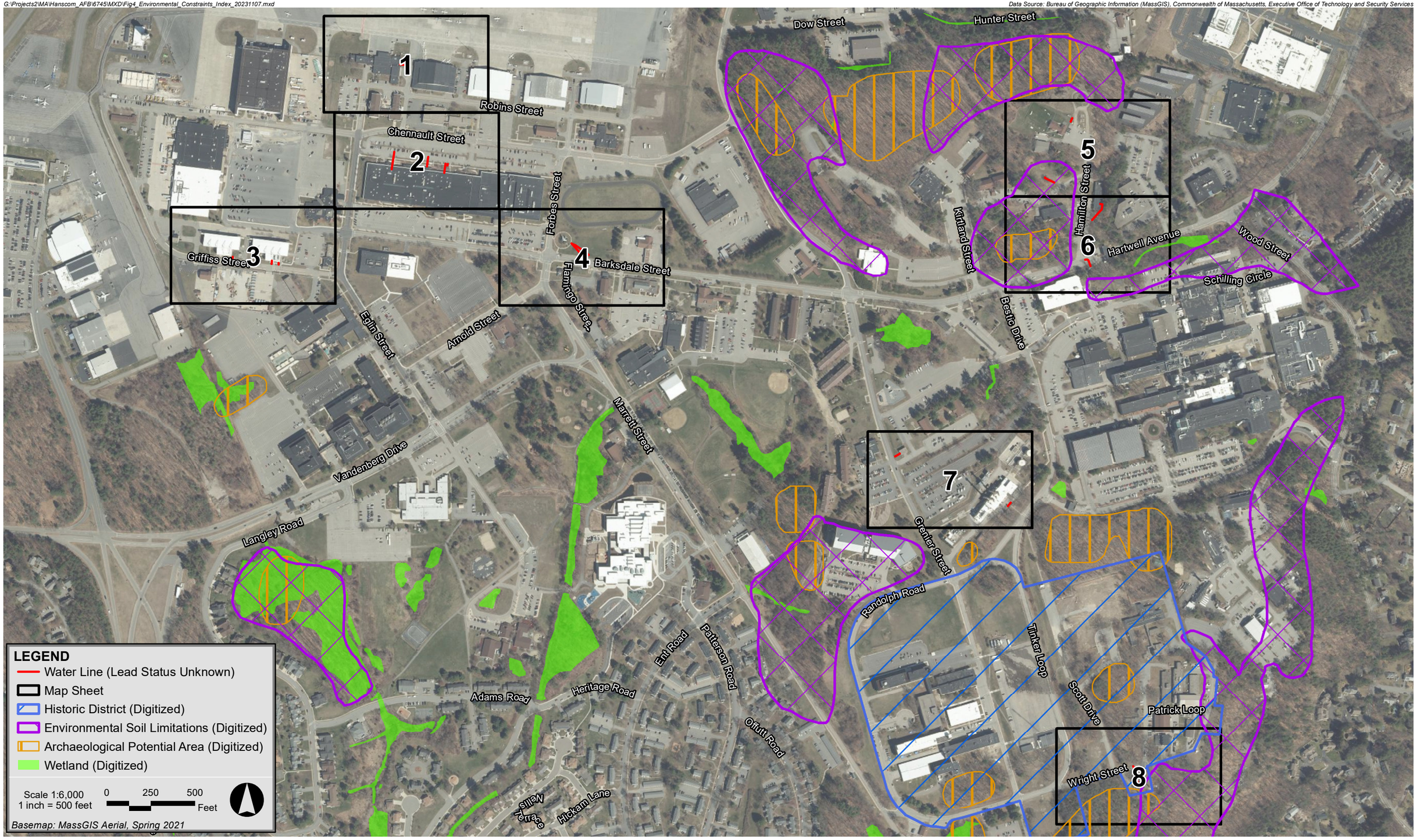
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 4, Index
Environmental Constraints Map

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit
- Historic District (Digitized)
- Environmental Soil Limitations (Digitized)
- Archaeological Potential Area (Digitized)
- Wetland (Digitized)

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 4, Map Sheet 1 of 8
Environmental Constraints Map

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

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Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 4, Map Sheet 2 of 8
Environmental Constraints Map

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig4_Environmental_Constraints_MapSet_20231107.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Water Line (Lead Status Unknown)
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Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 4, Map Sheet 3 of 8
Environmental Constraints Map

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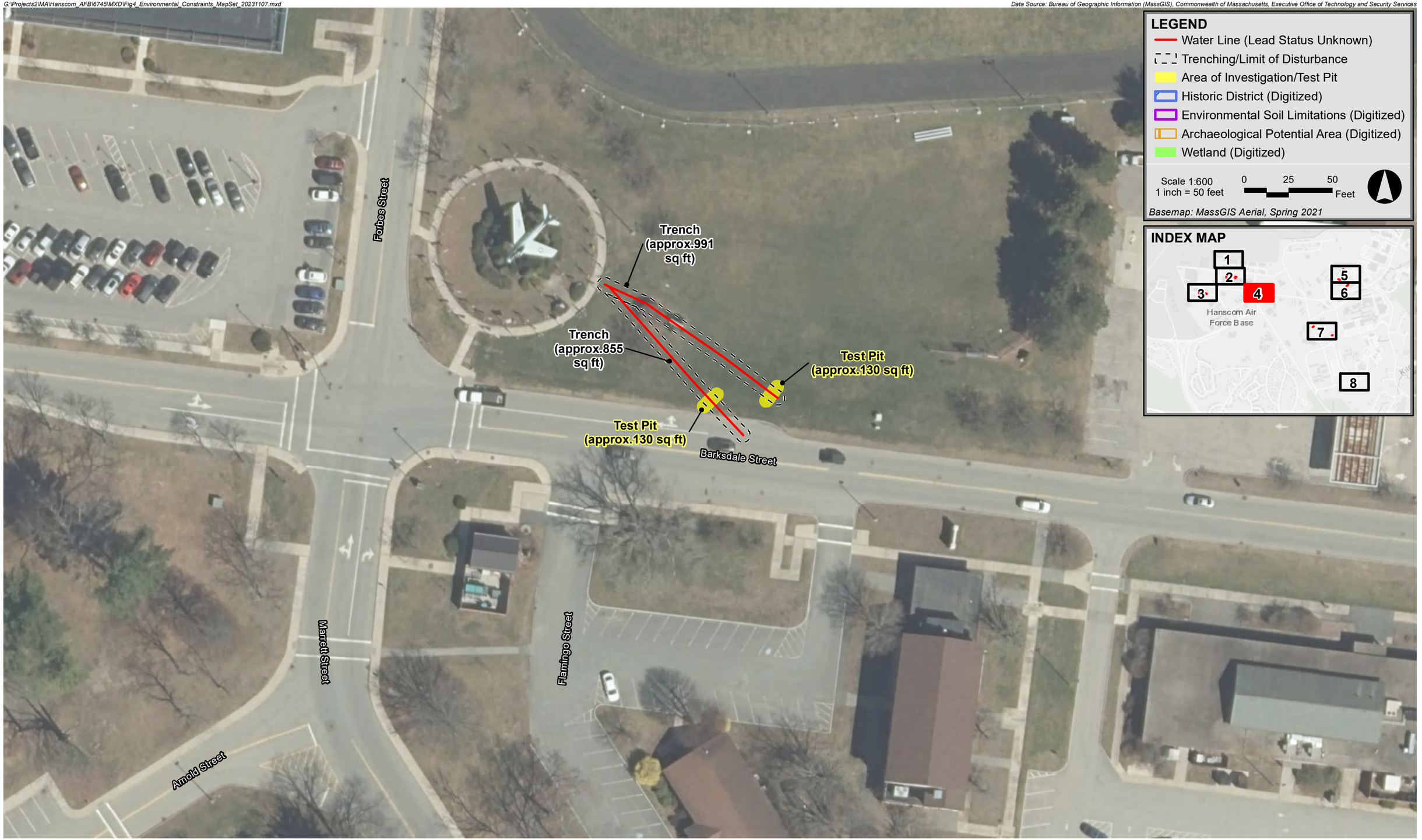

LEGEND

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Scale 1:600
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Basemap: MassGIS Aerial, Spring 2021

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Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon Associates Inc.

Figure 4, Map Sheet 4 of 8
Environmental Constraints Map

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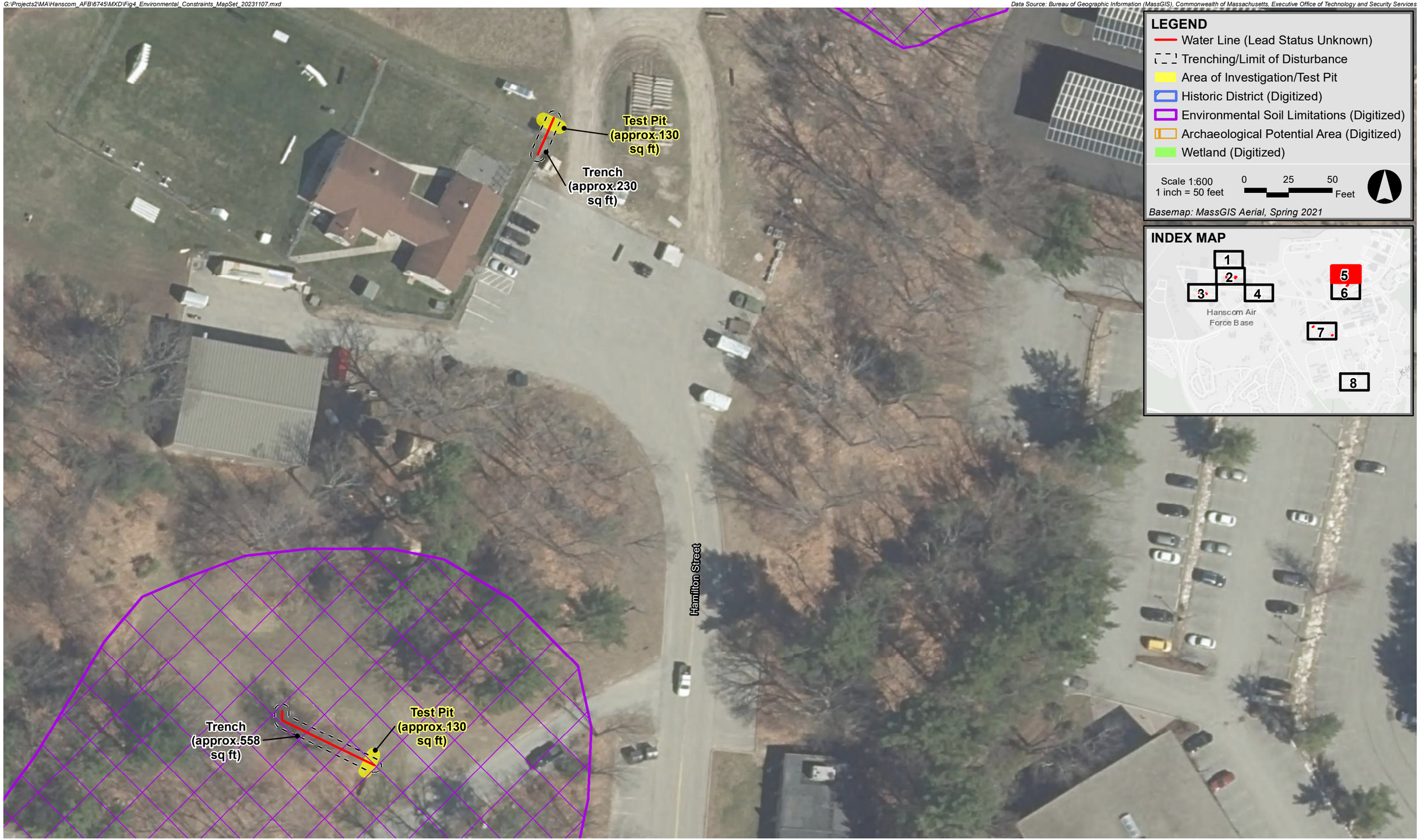

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- Archaeological Potential Area (Digitized)
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Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

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Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 4, Map Sheet 5 of 8
Environmental Constraints Map

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Water Line (Lead Status Unknown)
- Trenching/Limit of Disturbance
- Area of Investigation/Test Pit
- Historic District (Digitized)
- Environmental Soil Limitations (Digitized)
- Archaeological Potential Area (Digitized)
- Wetland (Digitized)

Scale 1:600
1 inch = 50 feet

0 25 50 Feet

Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 4, Map Sheet 6 of 8
Environmental Constraints Map

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- Water Line (Lead Status Unknown)
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- Historic District (Digitized)
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Scale 1:600
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Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 4, Map Sheet 7 of 8
Environmental Constraints Map

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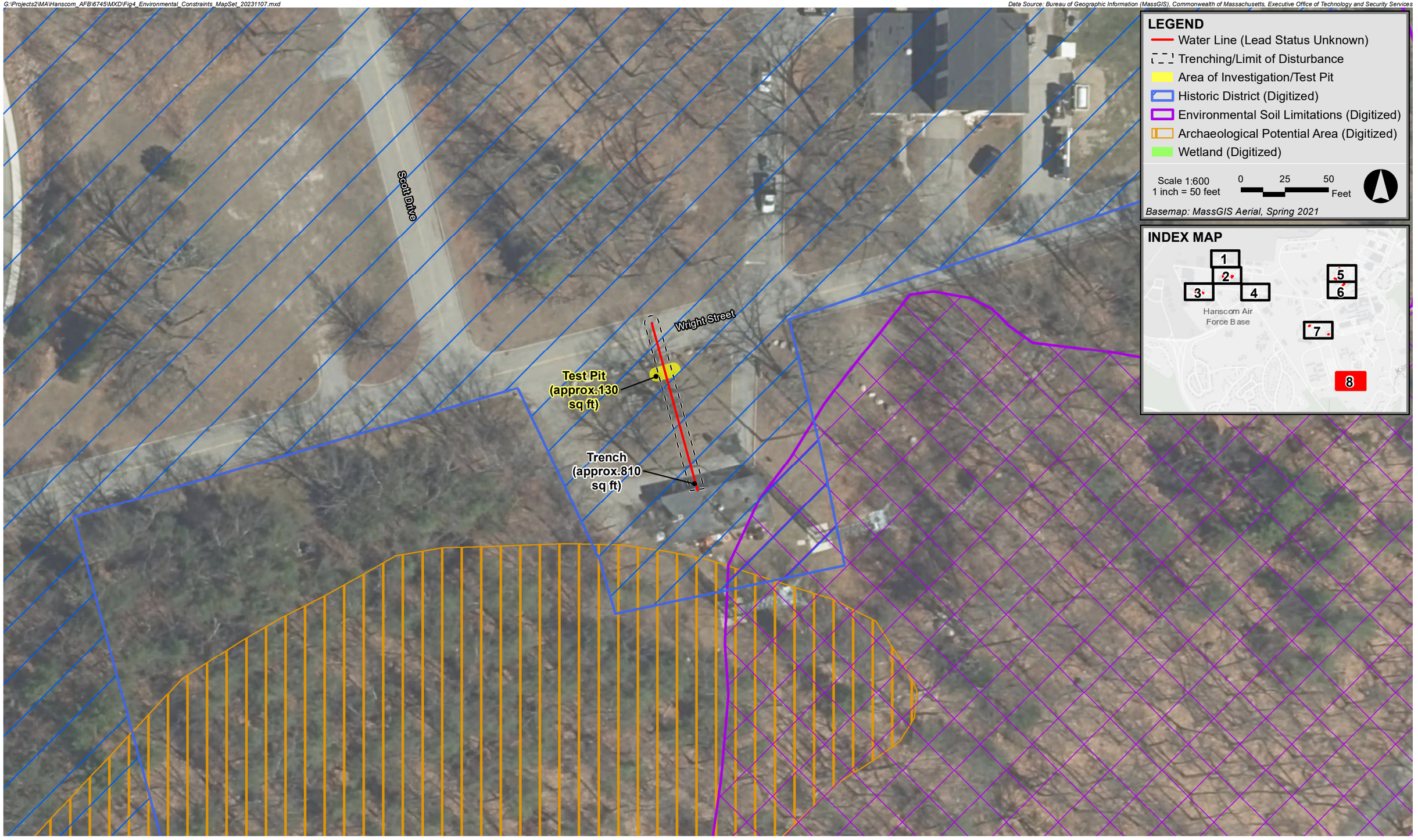

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Basemap: MassGIS Aerial, Spring 2021

INDEX MAP

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 4, Map Sheet 8 of 8
Environmental Constraints Map

3.2.3.2 Environmental Consequences

Preferred Alternative

Groundwater: Under the Preferred Alternative, Hanscom AFB does not anticipate any impacts on groundwater. Ground disturbances due to trenching and excavation are not expected to impact the groundwater. Any construction activities in the vicinity of monitoring wells associated with the Environmental Restoration Program (ERP) sites would be coordinated with the Hanscom AFB environmental office to ensure no adverse impacts on or from these sites would occur.

Surface Water: Regarding surface water, no direct adverse impacts are expected. A TMDL was established in 2002 for fecal coliform bacteria for the Shawsheen River in the vicinity of the Project (TMDL Report MA83-01-2002-24). As noted above, stormwater at Hanscom AFB drains into the stormwater inlets present on the base. There are also retention basins for stormwater runoff prior to it entering the storm drainage system.

During excavation and re-paving, appropriate measures, such as placement of silt fence and/or hay bales around catch basins, would be implemented to reduce potential for sediment materials to impact streams on the sites.

Wetlands: The Proposed Action is also not anticipated to impact wetland resource areas.

Stormwater: In accordance with Hanscom environmental policies, Measures to prevent stormwater would ensure that there would be no changes to water quality and quantity that infiltrate the aquifer.

The Preferred Alternative is not anticipated to have adverse short or long-term impacts on water resources.

No Action Alternative

Under the No Action Alternative, no excavation or paving activities would be conducted at Hanscom AFB. Therefore, no water resources would be impacted.

3.2.4 Soil and Geological Resources

Geological resources consist of surface and subsurface soils, bedrock, etc. These resources can be further categorized in terms of topography and physiography, geology, and soils.

3.2.4.1 Affected Environment

Hanscom AFB is located on the portion of the United States Geological Survey 7.5 Minute Series Maynard, Massachusetts, Topographic Quadrangle, dated 1987. According to the topographic map the elevation of Hanscom AFB is approximately 220 feet above mean sea level. The topography of the surrounding area appears to be undulating and generally sloping to the northeast (GZA 2013). Topography in the Preferred Alternative is generally flat.

A review of the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey shows that the soils underlying the Preferred Alternative primarily consist of Urban land, Udorthents-Urban land complex, 3 to 8 % slopes, and Udorthents sandy. Urban land constitutes excavated and filled land. Udorthents-Urban land complex is made up of Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till. Udorthents sandy consists of Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till.

All projects are reviewed to see if there is potential to impact or be impacted by active environmental restoration sites, former restoration sites, or potential Perfluoroalkyl and Polyfluoroalkyl substances (PFAS) sites.

The service lines near the corner of Forbes Street and Barksdale Street are west of the former gasoline service station site, which is Installation Restoration Program (IRP) Site # ST022. There is a line to the west of Hamilton Street that is near or on a former petroleum-impacted site that has been closed, Site ST014.

The Proposed Action has been and will be coordinated with ongoing Air Force investigations of PFAS associated with the Hanscom Field/Hanscom Air Force Base Superfund site. There are no current PFAS release sites near the proposed replacement line locations. The DAF is completing a Draft Due Diligence for Supplemental PFAS Sources Report, which will evaluate potential PFAS source areas unrelated to aqueous film-forming foam (AFFF).

3.2.4.2 Environmental Consequences

Preferred Alternative

No grading and topography changes are expected from the replacement of the water service lines. The Preferred Alternative's impact on surface topography and geology would be minimal given the sites have been previously disturbed and are mostly flat.

Minimal and temporary impacts to soil are anticipated by excavation activities associated with the Proposed Action. Sediment control measures would be adjusted to meet field conditions during excavation and re-paving. These measures would be implemented prior to and immediately after disturbance of surface material.

The service lines near the corner of Forbes Street and Barksdale Street are west of the former gasoline service station site, IRP Site # ST022. No impacts are anticipated from a site that is as far west as those lines are to Site #ST022. If the project does excavate materials further east of where the line is displayed on Figures 2 and 3 (Sheet 4), there is the possibility to encounter petroleum-impacted soils.

There is a line to west of Hamilton Street that is near or on a former petroleum-impacted site that has been closed, Site # ST014. The levels of contamination there when it was last sampled were

below any risk-based levels, so there are no concerns. The remainder of these lines are not located near restoration sites. The Proposed Action or alternatives would not result in adverse impacts related to former or active restoration sites.

AFFF Site 4 is the only known PFAS site within the Hanscom AFB fence-line, included in a current PFAS Remedial Investigation (RI). With what is known about AFFF Site 4 (Motor Pool Release Site), the DAF does not believe that development at the proposed action or alternative sites may interfere with the ongoing Air Force PFAS RI. The Draft Final Quality Assurance Project Plan Addendum, currently in re-review with EPA and MassDEP, details sampling locations associated with AFFF Site 4. No initial sampling locations are near the proposed action. Moreover, based on the criteria for step-out locations, the investigation will not lead to any sample collection in the vicinity of the Proposed Action.

PFAS investigation activities at non-AFFF sites has not been initiated; Due Diligence reporting will be followed by a Site Inspection, as needed, to determine presence of PFAS concentrations above applicable screening levels. The IRP has an opportunity to review and provide input on all phases of construction activities at HAFB to ensure that impacts from PFAS and non-PFAS sites are mitigated. That same amount of coordination will continue as the project proceeds. Because the presence and location of non-AFFF PFAS is not yet known, predicting a timeframe and sample locations associated with a Site Inspection and Remedial Investigation is difficult at this time. As needed, through coordination with the IRP, PFAS Site Inspection and Remedial Investigation work will be incorporated into the design. The Proposed Action or alternatives would avoid adverse impacts related to PFAS contamination.

No short- or long-term adverse impacts on the geology of the area are anticipated with the replacement of the water service lines.

No Action Alternative

Under the No Action Alternative, no development activities would take place; therefore, no disturbance to soil and geological resources would occur.

3.2.5 Cultural Resources

Cultural resources are associated with many heritage-related resources, such as prehistoric and historic sites, buildings, structures, districts, artifacts, or any other physical evidence of human activity that is considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can provide insight into cultural practices of previous civilizations or can also retain cultural religious significance to modern groups.

There are historic and archaeological properties present on Hanscom AFB and in the vicinity of the base. Analysis in this EA focuses on areas of archaeological sensitivity, eligible historic

structures, and cultural districts that could be impacted due to site disturbance and/or direct modification as a result of the Proposed Action.

3.2.5.1 Affected Environment

A survey of all historic and archaeological properties within the main base of Hanscom AFB, including areas of archaeological sensitivity, has been documented in the Hanscom AFB Integrated Cultural Resources Management Plan (ICRMP), which was updated in September 2020. The ICRMP provides for effective management and protection of cultural resources. The plan summarizes the history and prehistory of the installation, and reviews past historical and archaeological survey efforts. It further outlines and assigns responsibilities for the management of cultural resources, discusses related concerns, and provides standard operating procedures (SOPs) that will help to preserve the cultural resources of the installation within the context of the mission.

The main base is adjacent to the Minute Man National Historic Park (MMNHP), which was established in 1959 to commemorate the events of April 19, 1775 and is listed on the National Register of Historic Places (NRHP). MMNHP borders Hanscom AFB on the southeast and southwest. Battle Road, which runs along the southern boundary of the main base in Lincoln and Lexington, was the route the British took in both their advance on and retreat from Concord during the Battle of April 19, 1775. The place where Paul Revere was captured, as well as many sites where heavy fighting took place, are found along this route. The area of Parker's Revenge/Ambush and Nelson's Boulders, which served as naturally fortified positions from which the militia fired on the British, are located on the main base (Hanscom AFB 2010b). A 2007 intensive archaeological survey of the Hanscom AFB's southern border adjacent to the MMNHP Nelson Road Area identified artifacts associated with Parker's Revenge/Ambush (Hanscom AFB 2017).

Numerous historic and archaeological properties are recorded in the site files of the Massachusetts Historical Commission (MHC) for the vicinity of Hanscom AFB. Although there are no recorded Native American archaeological sites within the main base, a total of 11 areas of moderate/high sensitivity for archaeological resources were identified (Hanscom AFB 2017). After additional archaeological inspections conducted in 2008, the MHC determined that none of these areas warranted further inspection. **Figure 3** shows the Environmental Constraints of the Proposed Action sites, including these archaeological potential areas.

According to the ICRMP and IDP, one large historic district is located in the southeast corner of Hanscom AFB, at the old Air Force Cambridge Research Laboratory (AFCRL), consisting of 23 contributing buildings. **Figure 3** shows the AFCRL Historic District.

3.2.5.2 Environmental Consequences

Preferred Alternative

None of the undertakings pursued under this EA would be located within an archaeologically sensitive area; however, one building with proposed lead service line removal is within the AFCRL Historic District and several of the development project areas are located near zones of archaeological potential.

In sensitive cultural/historical areas, hand digging will be employed for excavation of soil from the point of connection to the water main along the entire length of the service line to be removed/replaced. This method will be utilized in the historic district.

On December 11, 2023, in accordance with Section 106 of the NHPA (5 United States Code 306018) and its implementing regulation at 36 CFR Part 800, the DAF sent a consultation letter to the MA SHPO stating that it has determined that there is a historic property present within the Proposed Action sites; however, no adverse effects to historic properties are anticipated.

All undertakings authorized under this EA would avoid impacts to the sensitive areas identified in **Figure 3**. In the event that any of those consultations resulted in an identified impact to cultural resources, they would not be authorized by this EA and supplemental analysis under NEPA would be required. As a result, any undertaking authorized under this EA would have no significant impact on cultural resources.

No Action Alternative

The No Action Alternative would continue operations at Hanscom AFB with no changes. No excavation or paving activities would occur. Therefore, no cultural resources would be impacted.

3.2.6 Noise

Noise is defined as unwanted or disturbing sound. Sound becomes unwanted when it interferes with normal activities such as sleeping, conversation, or disrupts or diminishes one's quality of life.

3.2.6.1 Affected Environment

Currently, the ambient noise environment at most of the service line replacement sites is produced primarily by common machinery associated with lawnmowers, leaf blowers, and shop equipment, as well as vehicular noise on nearby roadways. Service line sites located close to Robbins, Chenault, Griffis, and Barksdale Streets are located in proximity of Massport's Hanscom Field Airport; therefore, also experience higher levels of noise from normal operation of flights.

3.2.6.2 Environmental Consequences

Preferred Alternative

Adverse long-term noise impacts are not anticipated as a result of the Proposed Action. However, minimal and temporary noise impacts are anticipated. The Proposed Action would require excavation of pits and the repaving of any sidewalks or roadways disturbed from the removal and replacement of service lines. After implementation of the Preferred Alternative, noise levels are expected to be consistent with current background levels at Hanscom AFB.

No Action Alternative

No excavation and paving activities are proposed under the No Action Alternative; therefore, no noise impacts would result.

3.2.7 Biological/Natural Resources

Biological resources include native or naturalized vegetation and wildlife and their habitats.

3.2.7.1 Affected Environment

Vegetation

Most of the land at Hanscom AFB is developed. Uplands are dominated by roadways, parking areas, structures, and recreational fields. Occupying less than five percent of the uplands are grasslands occurring in scattered patches and linear strips along developed areas. The vegetation within the developed areas of Hanscom AFB consists of grass, shrubs, and trees, species typical within the region. The vegetation present in the mowed and landscaped areas at the base include rye, fescue, and bluegrass. The vegetation is maintained according to Hanscom AFB's planting guidelines to ensure aesthetics is maintained and that the exposure of soils (and resulting erosion) is minimized.

Wildlife

Undeveloped land at Hanscom AFB provides undisturbed habitat for local wildlife including small mammals, amphibians, fish, birds, and macroinvertebrates. However, due to the large presence of developed areas within the base, wildlife population and diversity at Hanscom AFB are relatively low. As a result, the wildlife present on the base is generally adapted to humans and development. The fish and wildlife management program at Hanscom AFB provides wildlife population control and monitoring for the reduction/elimination of nuisance wildlife inhabitants.

Threatened and Endangered Species

Per the NHESP 15th Ed. Heritage Atlas (Effective August 1, 2021), there is one area of Priority Habitat of Rare Species (PH 1512) mapped northwest of the main base. PH 1512 is located within and around the Massport airfield, 0.9 miles north of the main installation, it does not encroach

onto Hanscom AFB property and is affiliated with listed grassland bird species. None of the 12 proposed service line replacement sites are located within the mapped priority habitat.

The Northern Long Eared Bat (*Myotis septentrionalis*) may be encountered within the Hanscom AFB boundary; however, there have been no documented sightings of the NLEB at Hanscom AFB. The closest known hibernaculum and/or maternity roost tree (trees that provide habitat or hibernaculum for the species) for the NLEB is 9.3 miles away, east of Reading, MA, near Bear Meadow Brook. In 2018, DAF conducted acoustical surveys that failed to indicate presence of the NLEB within the areas of Hanscom AFB main base. Based on these surveys' findings and that no known maternity roost trees are located within the vicinity, DAF determined that proposed undertakings within the boundaries of the Hanscom AFB main base would have "No Effect" on the NLEB. A "No Effect" determination valid for 5 years was put in effect for undertakings conducted in Hanscom AFB between October 2, 2018 and October 1, 2023, and extended through March 2024, unless subsequently rescinded based on newly acquired science or information. The "No Effect" determination is provided as Appendix C.

The Preferred Alternative sites are primarily occupied by paved and grassy landscaped areas.

3.2.7.2 Environmental Consequences

Preferred Alternative

The Preferred Alternative sites are located in already disturbed areas of the base. Impacts from excavation activities are anticipated to occur primarily on landscaped areas and will be minor, limited to a four-foot buffer along the length of the service line to be replaced. Measures such as restoration with native plant and grass species will be taken to restore work areas to existing conditions.

Typically, every undertaking is required to undergo a separate consultation with USFWS to ensure that any effects on protected species are considered. However, in place of these consultations, the "No Effect" determination in effect for undertakings conducted in Hanscom AFB between October 2, 2018 and October 1, 2023, and extended through March 2024, is followed, unless subsequently rescinded based on newly acquired science or information (See Appendix C).

No impacts to priority habitats or NLEB are anticipated from the implementation of the Preferred Alternative.

No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. No excavation pits would be dug; therefore, no direct or indirect impacts on natural and biological resources would occur.

3.2.8 Infrastructure

Infrastructure is defined as a compilation of systems and physical structures that enable a population to function in a specified area. Infrastructure encompasses the fundamental systems that provide water, sewer, electric, and heating/cooling capability, as well as roads, parking, paths, and land and is mostly manmade. The economic growth of specific areas is generally dependent on the availability of infrastructure and their capacity for expansion.

Hanscom AFB has partnered with local private utility systems for provision of services such as water and electricity; however, most infrastructure at Hanscom AFB is maintained by the base. The infrastructure components discussed in this section include transportation, utilities, and solid waste management.

3.2.8.1 Affected Environment

Infrastructure surrounding the 12 locations (24 segments) where physical inspections are proposed were analyzed and anticipated impacts are discussed below.

3.2.8.1.1 Transportation

Hanscom AFB is located within the greater Boston metropolitan area, just outside the Route 128/I-95 circumferential expressway. Hanscom AFB commuters primarily use Route 2A and Route 4 to access Hanscom Drive and Route 4/225 to access Hartwell Avenue to enter the base. Although Hanscom AFB is relatively compact, the most used source of transportation is vehicular. Most vehicular travel within the base occurs along Vandenberg Drive, Barksdale Street, Grenier Street, and Marrett Street. The installation's transportation network consists of approximately 18 miles of surfaced roadway. For daily employees, parking areas on the installation include several large lots, primarily along either side of Barksdale Street, Vandenberg Drive, and Hartwell Avenue. When employee parking lots next to the busier buildings exceed occupancy, additional parking options are available on base within a short walking distance.

The Preferred Alternative would potentially result in temporary impacts to parking adjacent to Chennault Street and the following roads: Griffiss Street in Lincoln, Barksdale Street in Bedford, and Hartwell Avenue, Grenier Street, and Wright Street in Lexington.

3.2.8.1.2 Water Distribution System

Hanscom AFB operates a consecutive community water system that serves approximately 11,300 persons at industrial, commercial, and residential tenant organizations, Massport (an off-base entity), and MIT/LL. Under contract, the Towns of Lexington and Bedford supply potable water produced by MWRA to the main base. The quantity of water that Hanscom AFB can draw from connections with Lexington to the main base is limited by contractual agreement to 2 million gallons per day (mgd). In 2018, Hanscom AFB purchased a total of 181.5 million gallons (mg), representing an average daily demand of 497,205 gallons per day (gpd) or 0.497 mgd. This average daily usage corresponds to 24.8 % of the maximum contract capacity. The maximum single day

volume pumped in 2018 was 932,000 gallons or 0.932 mg which occurred on November 12, 2018. This represents 46.6 % of the maximum contract capacity.

To ensure water distributed at the main base meets public health standards and regulations, personnel at the Bioenvironmental Engineering Office collect water samples throughout the base for bacteriological (BACT), lead, and copper analysis. Residual chlorine levels and pH of the base drinking water are also monitored. Samples are collected monthly at 11 locations for BACT. Analysis is conducted off-site by the MWRA laboratory. The laboratory is certified annually through the Mass DEP lab certification program. Monthly BACT reports are prepared and sent to MassDEP.

According to the Hanscom AFB 2022 Annual Drinking Water Quality Report (2023), MWRA water is lead-free when it leaves the treatment plant. At Hanscom AFB, lead and copper analyses are conducted triennially. In 2022, testing was conducted at 30 random locations throughout Hanscom AFB and the FamCamp, including schools and childcare centers. The 90th percentile results show that lead and copper were below the EPA established action levels (see **Table 3-4**) and therefore Hanscom AFB's water system is in compliance with EPA regulation requirements. The next lead and copper compliance sampling period is scheduled for September 2025. DoD requires all faucets at the Child Development Center and Youth Center to be tested initially to ensure that the facilities' water is lead free. Therefore, two water samples were also collected and tested at the School Age Program locations, Child Development Center and Youth Center. Both samples were non-detect for lead and below action limit (AL) of 1.3 mg/L for copper. As part of the Lead Contamination Control Act (LCCA), these tests were initially accomplished in 2016, 2018, and 2019.

All locations that exceeded the action level initially for either lead or copper have been remediated at this time.

Table 3-4 Hanscom AFB Average Lead and Copper Sampling Results Compound Units

Compound	Units	EPA 90% Compliance Value	EPA 90% Value Detected	Range of Detected Levels	(MCLG) Ideal Goal	Violation (Yes/No)
Lead	mg/L	0.015	0.0088	0.001 – 0.0671	0.0	No
Copper	mg/L	1.3	0.2160	0.0291 – 7.95	1.3	No

3.2.8.1.3 Wastewater Collection System

Sanitary wastewater at Hanscom AFB is pumped by two major lift stations and three smaller lift sumps. The primary lift station has a wet well storage capacity of approximately 260,000 gallons and can pump up to 1,500-gallons per minute (gpm). The sanitary waste is pumped under permit via a 10-inch force main, through the Town of Bedford and eventually into the MWRA wastewater

treatment plant at Deer Island. The permit limits the base to an outflow of 1,500 gpm and maximum daily volume of 1,270,000 gallons per day (gpd). The base currently discharges an average of approximately 650,000 gpd with a peak discharge of 970,000 gpd, this represents an average of 51.2 % and a peak of 76.4 % of total capacity.

3.2.8.1.4 Stormwater Discharge/Collection System

Most of the surface runoff from the base enters a subterranean system of eight, 5-foot culverts and ultimately discharges into the Shawsheen River. This system has been in place since 1955, with subsequent facility additions tying into the basic system during construction. Portions of the Shawsheen River are conveyed through underground pipes on the base.

There is a complex system of storm drains and catch basins at Hanscom AFB. The base employs four major detention basins, in addition to numerous smaller detention basins, for the settling and infiltration of stormwater runoff including:

- A 4,900-sf basin located in the southeast quadrant of the base,
- A 1,100-sf basin located in the southeast quadrant of the base, and
- A 6,700-sf basin located in the southwest quadrant of the base.

Hanscom AFB stormwater system is permitted by the EPA's Municipal Small Separate Sewer System General Permit. Hanscom AFB is subject to all conditions in the permit to prevent regulated contaminants from entering the storm drain system. Per the Hanscom AFB Real Property condition report, the stormwater disposal system is rated as 1, resulting in an adequate rating.

A base-wide stormwater standard requires that redevelopment projects reduce stormwater rate and volume by ten percent over the existing condition for the 2-, 10- and 100-year storm events.

3.2.8.1.5 Electric System

All buildings on Hanscom AFB are connected to a primary distribution system that is owned and maintained by the base. Local utility provider Eversource's distribution system has three feeds coming into a central substation located next to the central heating plant. The primary distribution system consists of multiple 14.4 kilovolt (kV) circuits distributed underground (USACE 2013). Hanscom AFB also recently completed the construction of a 4.6-megawatt cogeneration plant that uses a natural gas-fired turbine to produce electricity for the base (Hanscom AFB, 2021).

As analyzed in the IDP EA, the Hanscom AFB electrical system has a capacity of 17.2 megawatts (MW) or 151,000 megawatt-hours (MWh). Currently, 31.3 % of electrical capacity is in use, resulting in approximately 11.8 MW of available capacity.

3.2.8.1.6 Natural Gas Supply/Distribution System

Hanscom AFB's natural gas infrastructure is owned and operated by two entities, National Grid and Hanscom AFB. Each owner is responsible for separate portions of the system. To improve overall capacity, Hanscom AFB is also tied into the Kinder Morgan transmission pipeline that runs through the base. This 24-inch steel line enters the base fence-line north of Hartwell Avenue and runs northeast to southwest across the base towards the residential area and next to Heritage Road. Pipeline distribution capacity for the installation is based on demand. Natural gas from the line also runs the 4.6-megawatt (MW) cogeneration plant.

3.2.8.1.7 Heating and Cooling System

Heating and cooling systems at Hanscom AFB consist of a central steam plant and a central chilled water system. The steam plant provides steam heat to approximately 70 % of the base facilities (excluding housing) delivered through 39,000 feet of steam lines, most of which run underground. Hanscom AFB maintains above and below ground tanks for the storage of #6 fuel oil, #2 fuel oil, diesel fuel, gasoline, waste oil, kerosene, and propane. All tanks are currently in compliance with federal, state, and local regulations. On-base bulk aboveground storage tanks (ASTs) are located at the Heat Plant and store #6 fuel oil. The base has no underground petroleum or aviation fuel pipelines. All underground storage tanks (USTs) and ASTs are permitted with the local fire department dependent upon which area of the base the tank is located. ASTs are steel with secondary containment and the associated piping network meets or exceeds state and EPA requirements. The base has 20 Resource Conservation and Recovery Act (RCRA)-regulated tanks, which store diesel fuel or heating oil.

3.2.8.2 Environmental Consequences

Preferred Alternative

Transportation. Overall, no adverse traffic impacts on or off base are expected. The Preferred Alternative would not result in a change in the number of personnel working on the base or utilizing its facilities; therefore, no long-term increase in personnel at Hanscom AFB and additional trips on the base's roadway network are anticipated.

The Proposed Action would occur solely within the main base; therefore, any potential traffic impacts from service line replacement activities would only affect the base. Impacts are anticipated to be temporary and minor. Temporary partial road closures of sections of frequently travelled roadways, Barksdale Street and Hartwell Avenue, may be required to carry out excavations as some service lines run under them.

Although specific construction and staging details have not been finalized, Hanscom AFB and its construction management consultant will work to ensure that material staging areas will be located to minimize impacts to pedestrian and vehicular flow. Appropriate methodologies that ensure public safety and protect nearby tenants will be employed. Techniques such as barricades,

flaggers, and signage will be used as necessary to isolate excavation areas from pedestrian traffic adjacent to the work sites. Sidewalk areas and walkways near excavation activities will be well marked and lit to protect pedestrians and ensure their safety. Excavation and re-paving procedures will be designed to meet all OSHA safety standards for specific site construction activities.

Moreover, to avoid traffic disruptions, work required on roadways will be limited to off-peak hours.

Water. Adverse long-term impacts to the water system on the base are not expected. Eleven of the 24 segments of water lines with unknown status are currently in service, while the remaining segments are listed as abandoned (SMMA Investigation Report, 2023). None of the water mains service residential properties or major industrial properties on the base; therefore, their removal and replacement would not have significant impacts to water distribution or consumption. The Preferred Alternative is also not expected to increase water usage on the base.

To address potential construction related "adverse effects on water quality," the following specific mitigation measures will be implemented during pre-construction, construction, and post-construction phases to minimize the potential for lead exposure:

- Preparation Phase:
    - Distribution of information/materials, and advance notification to building occupants that includes protective measures (line flushing, filters, etc.);
- Replacement Phase:
    - Turn off water service at shutoff valve;
    - Remove potential lead debris by removing and cleaning faucet aerators, flushing service/structure, and replacing cleaned aerators.
- Post-replacement Phase:
    - Periodically remove lead debris by removing and cleaning faucet aerators, flushing service/structure, and replacing cleaned aerators; and
    - Regularly flush tap prior to use when water has been stagnant (LSLRC, 2023).

Flushing both the new water service line and the building's interior plumbing is one effective method to reduce the risk of lead exposure after replacing a water service line to expel residual "particles in the service line and near point-of-entry" (LSLRC, 2023).

Existing public and private infrastructure located within the public right-of-way will be protected during excavation and re-paving. The installation of proposed utilities within the public way will

be in accordance with the appropriate governing utility company requirements. All necessary permits will be obtained before the commencement of the specific utility installation.

Long-term benefits of the Preferred Alternative outweigh potential short-term impacts. The Proposed Action would align with the EPA's LCRR regulations; thus, improve water quality and promote public health of those served by the water system on the base.

Wastewater. The Proposed Action would not result in additional wastewater generation. No adverse short- or long-term impacts on the wastewater system are anticipated during and after the implementation of the Preferred Alternative. All appropriate steps would be taken to ensure that sewer lines are not impacted during the excavation of pits and the replacement of service lines.

Stormwater. No increase in stormwater runoff is estimated from the Proposed Action. The Preferred Alternative would maintain existing site drainage features to the maximum extent feasible after excavation and replacement of service lines. Therefore, no adverse short- or long-term impacts to stormwater are anticipated as a result of implementing the Preferred Alternative.

Natural Gas. The Preferred Alternative is not anticipated to impact gas systems, production, and consumption at Hanscom AFB. All the necessary steps will be taken to avoid, minimize, and prevent impacts to utilities during excavation and service line replacement.

Heating and Cooling. The Preferred Alternative is not anticipated to impact heating and cooling systems, production, and consumption at Hanscom AFB. All the necessary steps would be taken to avoid, minimize, and prevent any impact to utilities during the excavation and replacement of service lines.

No-Action Alternative

The No-Action Alternative would not result in excavation activities. Therefore, no impacts on infrastructure would occur. This alternative does not fulfil the purpose and need to protect public health and comply with EPA guidelines as it would maintain the potentially suspect lead containing service lines in place.

3.2.9 Occupational Health and Safety

Occupational Health and Safety is defined as any issue with the potential to increase health risks to military or DoD civilian personnel, developer personnel, or the public. These health risks may include the potential for death, serious bodily injury or illness, and property damage. Some potential safety concerns associated with Hanscom AFB include fire, security force response, and anti-terrorism/force protection (AT/FP) requirements and considerations. The health and safety of onsite military and civilian workers are covered by numerous DoD and Air Force regulations designated to comply with the standards specified by OSHA and USEPA.

3.2.9.1 Affected Environment

The 66 ABG Safety Office provides occupational and non-occupational safety support for all government organizations on Hanscom AFB and geographically separated units. Support includes Ground, Weapons, and Flight safety programs and major mishap prevention programs include inspections, hazard abatement, mishap inspection, and training. The Safety office is also the steward for the Base Environmental, Safety, and Occupational Health Council and the Commander's OSHA Voluntary Protection Program.

Contractor operations on Hanscom AFB are not supported by the base's occupational health programs (i.e., Bioenvironmental Engineering, Public Health, and Occupational Medicine). Contractors are required to comply with the OSHA Regulations and manage their own occupational health programs including industrial hygiene surveillance, mishap reporting and recording, worker health and safety training, hazard abatement, and medical surveillance.

3.2.9.2 Environmental Consequences

Preferred Alternative

Occupational safety and health procedures would be implemented as part of the excavation and replacement activities to ensure the safety and health of individuals at the worksite. Implementation of the Preferred Alternative would not result in direct or indirect impact on the safety and health of DAF employees and others at the site. The Preferred Alternative would be completed in accordance with all applicable federal, state, local, and applicable DAF regulatory safety standards. Contractors would be trained to identify and avoid safety hazards, such as those common to working around/with heavy equipment and electrically powered hand tools.

A temporary construction fence would be installed around the perimeter of the construction area, and only authorized personnel with appropriate personal protective equipment would be allowed to enter the construction zone.

No significant short-term safety and occupational health concerns are anticipated as a result of implementing the Proposed Action. During construction and operation, all relevant Hanscom AFB occupational health and safety regulations would be adhered to. Long-term positive benefits would be realized as new water service lines meeting the LCRR standards would meet DoD requirements.

No-Action Alternative

Implementation of the No-Action alternative would not result in direct or indirect impacts on the safety and health of DAF employees and contractors at the Preferred Alternative sites.

3.2.10 Solid Waste and Hazardous Materials

The Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §6901 et seq.), passed in 1976, created the framework for America's hazardous and non-hazardous waste management programs. Materials regulated by RCRA are known as "solid waste," which include any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, resulting from industrial, commercial, mining, and agricultural operations, and from community activities. Solid waste can also be classified as hazardous waste, which are subject to additional regulation. EPA developed detailed regulations that define what materials qualify as solid waste and hazardous waste. Wastes which are excluded from the definition of solid waste are identified in 40 CFR 261.4(a).

3.2.10.1 Affected Environment

The types of solid waste generated at Hanscom AFB include food, various grades of office paper, newspaper, cardboard, cans, glass and plastic containers, scrap metals, and construction and demolition (C&D) debris. In FY 2019, approximately 1,297 tons of solid wastes were generated by Hanscom AFB consisting of 124 tons of C&D debris, 947 tons of municipal solid waste, 197 tons recyclables, and 29 tons of food waste for offsite processing and, where applicable, disposal. Hanscom AFB does not own or operate its own landfill.

Most solid waste generated on Hanscom AFB is removed by private contractors and disposed of by incineration or directly hauled to materials recovery facilities for recycling. The major sources of municipal waste include community operations, offices, and industrial areas, while the major source of C&D debris is the result of multiple engineering projects on the base.

Under permit with MassDEP, the Hanscom AFB solid waste transfer station permit is limited to a maximum of 50 tons/day of C&D debris waste. There are no permit limits on other solids wastes that the transfer station can process. During major construction and renovation projects, C&D debris is disposed of by the performing contractor, who reports quantities to Hanscom AFB, but which are not processed through the transfer station, and therefore do not count toward the 50 ton/day permit limit. Management of all solid waste generated on Hanscom AFB is governed by the Hanscom AFB Integrated Solid Waste Management Plan (ISWMP). The Hanscom AFB Hazardous Waste Management Plan (HWMP) establishes policies, procedures, and responsibilities to ensure compliance with environmental laws and regulations. The HWMP provides a single-source document for personnel involved with hazardous materials and waste to ensure proper identification, packaging, storing, transporting, treatment, and/or reporting of hazardous materials and waste on Hanscom AFB.

3.2.10.2 Environmental Consequences

Preferred Alternative

The Preferred Alternative is not anticipated to result in adverse impacts on solid waste and hazardous materials management. Materials excavated will be restored at their current location

after excavation of lead service lines. Therefore, except for lead service lines identified, no solid waste is anticipated to be produced.

Short-term, minor impacts are anticipated from fugitive dust generated during excavation and paving work from the Preferred Alternative. Following established protocols and BMPs, potential debris would be recycled to the greatest extent feasible. Inert debris (concrete, asphalt, dirt, brick, and other rubble) would be incorporated into reuse and recycling programs when possible.

Overall, solid waste management would follow Hanscom AFB recycling policies and MassDEP solid waste policies and guidance to minimize the amount of solid waste disposed without beneficial reuse during construction activities. Contractors hired to execute projects would be responsible for solid and hazardous materials management in accordance with Hanscom AFB's HMMP, ISWMP, and Hazardous Materials Operations Plan. Hazardous materials retrieved (lead pipes) during extraction and replacement activities would be stored, transported, and disposed in accordance with base, military, state, and federal regulations.

No Action Alternative

Under the No Action Alternative, no excavation activities would take place; therefore, no solid or hazardous materials would be generated.

3.2.11 Socioeconomics and Environmental Justice

Socioeconomics relates to or involves a combination of social and economic factors. Socioeconomic changes associated with economic activities, such as changes in employment and commercial growth, sometimes result in changes to additional indicators such as housing availability, school capacity, etc. Potential socioeconomic impacts include those that could expose low-income and minority populations to disproportionate negative impacts or could pose special risks to children (under 18 years old) due to noise and other conditions during Hanscom AFB development projects adjacent to such communities. The socioeconomic receptors include nearby communities and property that could be impacted by the noise from Hanscom AFB construction.

Under its instructions for the EIAP (32 CFR Part 989), the DAF must demonstrate compliance with Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, to determine the effects of federal programs, policies, and activities on minority and low-income populations. Similarly, under EO 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks, each federal agency must assess the environmental health risks and safety risks that may disproportionately affect children. For there to be a potential environmental justice impact, a unique low-income or minority population must be present, as well as a significant adverse impact.

3.2.11.1 Affected Environment

Hanscom AFB employs nearly 7,000 people and includes approximately 740 housing units on the base. The workforce at Hanscom AFB includes military (active duty), military (reservists), DoD civilians, non-DoD civilians, and contractors. From a social perspective, Hanscom AFB has limited impacts on surrounding communities due to the small number of residents who reside on the base and the self-contained nature of the facility.

For environmental justice purposes, the region of influence (ROI) is considered the four towns in which the base is located. According to the Environmental Justice (EJ) Viewer, there are 21 EJ block groups which have been designated as comprising an Environmental Justice population, most of which are in Lexington. All the identified block groups meet the criterion for Minority (M). The Preferred Alternative and Alternative 2 fall within EJ communities classified as Minority.

From an economic perspective, Hanscom AFB affects a much larger area as a major regional employer. With a daytime population of over 10,000 (Hanscom AFB 2020b), the base draws employees from throughout the greater Boston metropolitan area. The base has several active retail and service establishments primarily serving the needs of on-base employees and residents, as well as off-base personnel with access privileges such as retirees.

3.2.11.2 Environmental Consequences

Preferred Alternative

Under the Preferred Alternative, no adverse impacts on socioeconomics and environmental justice would occur. The Proposed Action only proposes infrastructure improvements.

Possible impacts from the excavation activities could include temporary disruption of traffic and increases to noise; but these effects would be short-term, mostly affecting Hanscom AFB residents than off-installation residents.

The Preferred Alternative would result in the long-term benefit of improving the water system at Hanscom AFB, thus contributing to enhancement of public health.

No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented; therefore, no public health benefits would be realized by the Hanscom AFB community. Moreover, Hanscom AFB would not be in compliance with the LCRR guidelines. Instead, long-term impacts would occur as the water system ages, potential lead service lines could negatively affect public health on the base.

4.0 REASONABLY FORESEABLE ACTIONS AND CUMULATIVE EFFECTS

4.1 Past, Present, and Reasonably Foreseeable Actions

CEQ regulations require that all federal agencies include an analysis of potential direct and indirect cumulative effects on the environment from the incremental effect of a proposed action when added to the other past, present, and reasonably foreseeable future actions. Cumulative effects are most likely to arise when a relationship or synergy exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or close to a proposed action would be expected to have more potential for a relationship than those more geographically separated.

4.2 Assessment of Cumulative Impacts

This EA considers the effects of cumulative impacts as required in 40 CFR 1508.7 and connected actions as required in 40 CFR 1508.25(1). Connected actions means that they are closely related and therefore: (i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously**;** and (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

A cumulative impact, as defined by the CEQ (40 CFR 1508.7) is the "…impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The following projects have occurred at Hanscom AFB within the last five years:

- Reconfiguration of the Ruiz (aka Hartwell) Gate Complex, FONSI issued 2023;
- Construction of Sartain (Vandenberg) Gate Complex and roadway System, FONSI issued in 2022;
- 24-Hour Access Gate at Hanscom AFB; FONSI issued in 2022;
- NC3 MILCON, Mission Consolidation at Hanscom AFB; FONSI issued 2021 (project has not been constructed yet);
- AAFES Consolidation and Gas Station at Hanscom; FONSI issued 2021;
- Installation Development Plan EA; FONSI issued 2020;
- Leasing Off-Base Space for HBN Personnel; FONSI issued 2020;

- Dorm Construction, FONSI issued in 2018;
- Defense Contract Management Agency (DCMA) Relocation; FONSI issued in 2018;
- Energy Efficient Upgrades [Cogeneration (COGEN) Plant], FONSI issued in 2018;
- Photovoltaic Panel Additions Environmental Assessment, FONSI issued in 2018;

Future anticipated projects on Hanscom AFB not addressed by this EA include:

- Construction of a New Child Development Center (Estimated in 2024)
- Construction of a New Fire Department (Estimated in 2025)

For projects listed above, no significant impacts on socioeconomic/environmental justice, noise, climate change, geology and soils, floodplains, or the environmental restoration program hazardous waste were identified in the project EAs. The short-term increases in solid waste during construction for these projects would be minor because recycled materials would be utilized, and efficient building technologies were included in the building design. Traffic increases from projects would be minimized by the implementation of traffic demand management (TDM) strategies. Specific to the construction of buildings with Hanscom AFB, minor increases in demands on the water supply, wastewater, electrical, telecommunications, and natural gas systems as a result of a small increase in base population was determined not to be adverse.

No cumulative impacts on Hanscom AFB resources are anticipated when the Preferred Alternative is evaluated together with past, present, and reasonably foreseeable actions.

5.0 SUMMARY OF ENVIRONMENTAL MANAGEMENT AND MITIGATIONS

While some impacts on the natural and human environment may occur during implementation of the Preferred Alternative, these impacts are minor and are not atypical compared with other routine construction projects. Commonly applied Best Management Practices and other measures identified below further reduce the likelihood that these activities would have a significant impact on the environment.

Parameter:	BMPs or Other Measures to Reduce Impacts:
Land Use	A construction schedule would be implemented to reduce peak traffic/noise levels and thus minimize disruption to nearby land uses.
Transportation	Transportation of heavy trucks would only be allowed during off-peak hours to avoid the disturbance to frequented roadways where excavation would occur.
Utilities	Existing utility alignments would be identified through markings (similar to "Dig Safe") prior to any excavation to prevent damage to existing infrastructure surrounding potential lead service lines marked for replacement.
Air Quality	All equipment and vehicles used during excavation activities would be maintained in good operating condition so that exhaust emissions are minimized. Dust would be controlled on-site by using water to wet down disturbed areas.
Surface Water	During trenching, silt fence and/or hay bales would be placed around catch basins to reduce potential for sediment/eroded materials to be transported to the Shawsheen River via the storm sewers.
Vegetation	Existing vegetation on the site would be protected during construction and excavated sites will be restored to existing conditions to the extent possible.
Cultural Resources	No archaeological sensitive areas would be disturbed or impacted during construction of the Preferred Alternative. However, one of the proposed excavation sites is located within the historic district. Prior to excavation, the Hanscom AFB Cultural Resources Manager will be consulted. In addition, hand digging or other less intrusive methods would be employed to minimize impacts to the surrounding historic resources.
Hazardous Waste	All hazardous materials encountered during excavation would be handled and disposed of in accordance with Hanscom AFB policies and protocols and all applicable state and federal regulations.

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[NRCS]. Natural Resources Conservation Service. 2023. Web Soil Survey. Retrieved on June 1, 2023, https://websoilsurvey.sc.egov.usda.gov/

7.0 LIST OF PREPARERS

This EA has been prepared under the direction of the Environmental Office (66ABG/CEIE), along with Epsilon Associates to fulfill the requirements of NEPA for Hanscom AFB, MA.

The following persons authored and provided direct oversight for the preparation of this EA:

MANAGEMENT

Howe, Jennifer, PE, SMMA, Boston, Massachusetts. B.S. in Environmental Engineering; As the Project Director, Ms. Howe, with over 25 years of experience, provided management oversight for preparation of this environmental assessment.

TASK LEADER

Maravelias, James P., CIV USAF AFMC 66 ABG/CEIE. As the task leader for this effort, Mr. Maravelias provided technical analysis and editing and daily oversight for preparation of this environmental assessment.

Sheehan, Scott. E.I.T.; 66 ABG/CEIE; B.S. in Civil Engineering. Mr. Sheehan provided technical analysis and editing support for preparation of this environmental assessment.

CONTRIBUTING AUTHORS

Hashimoto, Hiromi. Epsilon Associates, Maynard, Massachusetts. M.S. in Environmental Planning and Policy, Tufts University; Project Scientist at Epsilon with experience in environmental impact analysis, planning, and permitting.

Hewett, David. Epsilon Associates, Maynard, Massachusetts. B.A. in Biology, Middlebury College; Principal at Epsilon with over 30 years of experience in the field of environmental impact analysis and permitting.

Marcou, Emma. Epsilon Associates, Maynard, Massachusetts. B.A. in English and Environmental Studies, Wheaton College Massachusetts; Staff Planner at Epsilon with experience in environmental impact analysis, planning, and permitting.

Rawding, Nathan. Epsilon Associates, Maynard, Massachusetts. M.S. in Environmental Planning and Policy, Tufts University; Senior Scientist at Epsilon with over 15 years of environmental impact analysis, planning, and permitting.

Sax, Sonja. Epsilon Associates, Maynard, Massachusetts. Sc.D., Environmental Science and Engineering, Harvard School of Public Health. Senior Consultant with over 20 years of environmental consulting experience.

Weiss, Ida. Epsilon Associates, Maynard, Massachusetts. Project Engineer with one year of experience in air dispersion modeling and mesoscale air quality analysis.

APPENDIX A

List of Parties Contacted and Correspondences

APPENDIX A: CONSULTATION RECIPIENT LIST

Federal

- Minute Man National Historic Park

State

- Massachusetts Historical Commission (MHC) State Historic Preservation Office (SHPO) – Section 106
- Section 106 – Tribal Historic Preservation Officers (THPO), Wampanoag Tribe of Aquinnah, Mashpee Wampanoag

Local

- Town of Bedford (Board of Health, Water & Sewer)
- Town of Lexington (Board of Health, Water & Sewer)
- Town of Lincoln (Board of Health, Water & Sewer)
- Hanscom Area Towns Committee (Bedford, Lincoln, and Lexington)

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

October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Bedford Board of Health
Town Center
12 Mudge Way
Bedford, MA 01730

Dear Sir or Madam,

The Department of the Air Force (DAF) is proposing to conduct physical investigations to determine potential lead water service lines at Hanscom Airforce Base (Hanscom AFB), develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

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Mr. Jim Maravelias, NEPA/EIAP Program Manager
66 ABG/CEIE
120 Grenier Street, B1825
Hanscom AFB, MA 01731-1910

Once completed, the Draft EA will be made available for public review and comment. We currently expect this to occur late 2023. If you have any questions, please feel free to contact Mr. Jim Maravelias at (781) 225-6209 or james.maravelias.1@us.af.mil.

Sincerely

JIM MARAVELIAS
NEPA/EIAP Manager

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Attachment 1

Proposed Action Location Map: Overview of Potentially Lead Containing Pipe Segments

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

October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Joanne Belanger, RN, Health Director
Lexington Board of Health
1625 Massachusetts Avenue
Lexington, MA 02420

Dear Joanne Belanger,

The Department of the Air Force (DAF) is proposing to conduct physical investigations to determine potential lead water service lines at Hanscom Airforce Base (Hanscom AFB), develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

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October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Victoria Benalfew, Administrative Assistant
Lincoln Board of Health
16 Lincoln Road
Lincoln, MA 01773

Dear Victoria Benalfew,

The Department of the Air Force (DAF) is proposing to conduct physical investigations to determine potential lead water service lines at Hanscom Airforce Base (Hanscom AFB), develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

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October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Jim Hutchinson
Hanscom Area Towns Committee - Lincoln
16 Lincoln Road
Lincoln, MA 01773

Dear Jim Hutchinson,

The Department of the Air Force (DAF) is proposing to conduct physical investigations to determine potential lead water service lines at Hanscom Airforce Base (Hanscom AFB), develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

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HANSCOM AIR FORCE BASE MASSACHUSETTS

October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Darin LaFalam, Water Superintendent
Lincoln Water and Sewer
16 Lincoln Road
Lincoln, MA 01773

Dear Darin LaFalam,

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October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Doug Lucente
Hanscom Area Towns Committee - Lexington
Lexington Town Office Building
1625 Massachusetts Avenue
Lexington, MA 02420

Dear Doug Lucente,

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HANSCOM AIR FORCE BASE MASSACHUSETTS

October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Emily Mitchell
Hanscom Area Towns Committee - Bedford
10 Mudge Way
Bedford, MA 01730

Dear Emily Mitchell,

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October 17, 2023

Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Ms. Simone Monteleone, Park Superintendent
Minute Man National Historic Park
174 Liberty Street
Concord, MA 01742

Dear Ms. Simone Monteleone,

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Jim Maravelias
66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

David Pavlik, Superintendent
Lexington Water and Sewer
201 Bedford Street
Lexington, MA 02420

Dear David Pavlik,

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66 ABG/CEIE
120 Grenier Street
Hanscom AFB, MA 01731-1910

Jason Raposa, Operations Manager
Bedford Water and Sewer
314 Great Road
Bedford, MA 01730

Dear Jason Raposa,

The Department of the Air Force (DAF) is proposing to conduct physical investigations to determine potential lead water service lines at Hanscom Airforce Base (Hanscom AFB), develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

The Proposed Action is an effort to align Hanscom AFB with the Environmental Protection Agency (EPA)'s recent Lead and Copper Rule Revisions (LCRR). The LCRR requires water systems to prepare and maintain an inventory of service line materials by October 16, 2024 and encourages the replacement of lead service lines. As a first step, Hanscom AFB completed a Lead Service Line Investigation Report in May 2023, identifying potential lead service lines of the drinking water system on Hanscom AFB. The Proposed Action will conduct physical investigations to identify potential lead pipes. Lead pipes found during investigations will be removed and replaced using appropriate techniques.

To evaluate impacts associated with the Proposed Action, the DAF is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Air Force Environmental Impact Analysis Process (32 Code of Federal Regulations 989 et seq.). The EA will discuss the purpose and need to carry out the Proposed Action, compare the Proposed Action to the No Action Alternative, describe potential environmental impacts of the Proposed Action, and present proposed management practices.

To assist the DAF in fully developing the range of issues to consider in conducting a comprehensive environmental review, particularly issues for which the DAF may be unaware, we are seeking your input on the Proposed Action. Included in this letter is a Proposed Action Location Map. If you wish to provide input, we request you respond within 30 days from receipt of this letter. Any written input you may have at this time can be e-mailed to james.maravelias.1@us.af.mil or mailed to:

Mr. Jim Maravelias, NEPA/EIAP Program Manager
66 ABG/CEIE
120 Grenier Street, B1825
Hanscom AFB, MA 01731-1910

Once completed, the Draft EA will be made available for public review and comment. We currently expect this to occur late 2023. If you have any questions, please feel free to contact Mr. Jim Maravelias at (781) 225-6209 or james.maravelias.1@us.af.mil.

Sincerely

JIM MARAVELIAS
NEPA/EIAP Manager

Attachments:
1. Proposed Action Location Map

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig1_Overview.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Attachment 1

Proposed Action Location Map: Overview of Potentially Lead Containing Pipe Segments

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

December 11, 2023

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

Ms. Bettina Washington, THPO
Wampanoag Tribe of Gay Head (Aquinnah)
20 Black Brook Rd.
Aquinnah, MA 02535-9701

Dear Ms. Washington

On behalf of the Hanscom Air Force Base (AFB) Installation Tribal Liaison Officer, Mr. Randy Robertson, I am informing you of a proposed undertaking by the Department of the Air Force (DAF) at Hanscom AFB in Bedford and Lexington, MA. The undertaking is to conduct physical investigations to determine potential lead water service lines, develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

The Proposed Action is an effort to align Hanscom AFB with the Environmental Protection Agency (EPA)'s recent Lead and Copper Rule Revisions (LCRR). The LCRR requires water systems to prepare and maintain an inventory of service line materials by October 16, 2024 and encourages the replacement of lead service lines. As a first step, Hanscom AFB completed a Lead Service Line Investigation Report in May 2023, identifying potential lead service lines of the drinking water system on Hanscom AFB. Attachment 1 shows locations of those suspect lines on Hanscom AFB in red. The Area of Potential Effect (APE) for the proposed undertaking is delineated separately for each service line and extends 5 feet out on either side of each line. The undertaking would include excavation of the lines to identify the materials, and if determined to be lead, removal and replacement of the line segment.

Federal agencies are required to 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 project's APE 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 seek your input within 30 days from receipt of this letter. If you have any questions or if you need additional information, please feel free to contact me at (781) 367-7168 or by email at scott.sheehan.1@us.af.mil. Thank you for your consideration and I look forward to hearing from you.

Sincerely

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

Attachment:
Proposed Action Location Map

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig1_Overview.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

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

December 11, 2023

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

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

Dear Mr. Weeden

On behalf of the Hanscom Air Force Base (AFB) Installation Tribal Liaison Officer, Mr. Randy Robertson, I am informing you of a proposed undertaking by the Department of the Air Force (DAF) at Hanscom AFB in Bedford and Lexington, MA. The undertaking is to conduct physical investigations to determine potential lead water service lines, develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

The Proposed Action is an effort to align Hanscom AFB with the Environmental Protection Agency (EPA)'s recent Lead and Copper Rule Revisions (LCRR). The LCRR requires water systems to prepare and maintain an inventory of service line materials by October 16, 2024 and encourages the replacement of lead service lines. As a first step, Hanscom AFB completed a Lead Service Line Investigation Report in May 2023, identifying potential lead service lines of the drinking water system on Hanscom AFB. Attachment 1 shows locations of those suspect lines on Hanscom AFB in red. The Area of Potential Effect (APE) for the proposed undertaking is delineated separately for each service line and extends 5 feet out on either side of each line. The undertaking would include excavation of the lines to identify the materials, and if determined to be lead, removal and replacement of the line segment.

Federal agencies are required to 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 project's APE 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

We respectfully seek your input within 30 days from receipt of this letter. If you have any questions or if you need additional information, please feel free to contact me at (781) 367-7168 or by email at scott.sheehan.l@us.af.mil. Thank you for your consideration and I look forward to hearing from you.

Sincerely

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

Attachment:
Proposed Action Location Map

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Attachment 1

Proposed Action Location Map: Overview of Potentially Lead Containing Pipe Segments

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

December 11, 2023

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

Mr. John Brown
Tribal Historic Preservation Officer
Narragansett Indian Tribe
P.O. Box 268
Charleston, RI 02813-3428

Dear Mr. Brown

On behalf of the Hanscom Air Force Base (AFB) Installation Tribal Liaison Officer, Mr. Randy Robertson, I am informing you of a proposed undertaking by the Department of the Air Force (DAF) at Hanscom AFB in Bedford and Lexington, MA. The undertaking is to conduct physical investigations to determine potential lead water service lines, develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action").

The Proposed Action is an effort to align Hanscom AFB with the Environmental Protection Agency (EPA)'s recent Lead and Copper Rule Revisions (LCRR). The LCRR requires water systems to prepare and maintain an inventory of service line materials by October 16, 2024 and encourages the replacement of lead service lines. As a first step, Hanscom AFB completed a Lead Service Line Investigation Report in May 2023, identifying potential lead service lines of the drinking water system on Hanscom AFB. Attachment 1 shows locations of those suspect lines on Hanscom AFB in red. The Area of Potential Effect (APE) for the proposed undertaking is delineated separately for each service line and extends 5 feet out on either side of each line. The undertaking would include excavation of the lines to identify the materials, and if determined to be lead, removal and replacement of the line segment.

Federal agencies are required to 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 project's APE 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

We respectfully seek your input within 30 days from receipt of this letter. If you have any questions or if you need additional information, please feel free to contact me at (781) 367-7168 or by email at scott.sheehan.1@us.af.mil. 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

Attachment:
Proposed Action Location Map

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Attachment 1

Proposed Action Location Map: Overview of Potentially Lead Containing Pipe Segments

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

December 11, 2023

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

CONCURRENCE Brona Simon
2/12/2024 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 02125-3314

SUBJECT: Proposed Undertaking – Lead Service Line Investigation and Removal

Dear Ms. Simon

The Department of the Air Force (DAF) is proposing an undertaking at Hanscom Air Force Base (AFB) in Lexington, Massachusetts. to conduct physical investigations to determine potential lead water service lines, develop an inventory of the water system at Hanscom AFB, and remove lead service lines identified within the Hanscom AFB boundaries (the "Proposed Action"). Pursuant to Section 306108 of the National Historic Preservation Act (NHPA) of 1966, as amended and its implementing regulations at 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the USAF is consulting with the Massachusetts State Historic Preservation Office (MA SHPO) regarding the proposed undertaking.

The Proposed Action is an effort to align Hanscom AFB with the Environmental Protection Agency (EPA)'s recent Lead and Copper Rule Revisions (LCRR). The LCRR requires water systems to prepare and maintain an inventory of service line materials by October 16, 2024 and encourages the replacement of lead service lines. As a first step, Hanscom AFB completed a Lead Service Line Investigation Report in May 2023, identifying potential lead service lines of the drinking water system on Hanscom AFB. Attachment 1 shows locations of those suspect lines on Hanscom AFB in red.

Attachment 2 to this letter identifies the historic properties on Hanscom AFB. Overlaying the undertaking in Attachment 1 with the historic properties shown in Attachments 2, as well as known archaeological sites, Hanscom AFB has identified one water line that interacts with historic properties. That line lies in the southeast area of the base off of Wright Street. This line does not directly impact any historic properties, however it lies within the Air Force Cambridge Research Laboratory (AFCRL) Historic District, which was determined eligible for listing on the National Register of Historic Places and is subject to a Programmatic Agreement (PA) between the Department of the Air Force and the Massachusetts Historical Commission (MHC). Per the PA, Section III, Paragraph A(3), "Work on existing underground utilities, mechanical systems,

fuel tanks, and pumping systems that will not affect the appearance or historic character of the District (archaeological review is separate)" is found to routinely have No Adverse Effect on historic properties involved as defined by 36 CFR § 800.5. With respect to known archaeological sites, this line segment lies approximately 20 feet to the north of the boundaries of the former Thomas Nelson Sr. Farm Site (19-MD-347/LEX-HA-6). Although the undertaking will not directly affect this site, Hanscom AFB will include provisions for the inadvertent discovery of archaeological resources into the project requirements. Upon review of the scope of work and potential effects of this undertaking, Hanscom AFB concludes that it will have no adverse effect to historic properties.

In accordance with Section 106 of the NHPA (54 United States Code 306018) and its implementing regulations at 36 CFR Part 800, the USAF has determined that the proposed undertaking would result in ***No Adverse Effect*** to historic properties. We seek your concurrence within 30 days from receipt of this letter. Please feel free to contact me via e-mail at scott.sheehan.1@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

2 Attachments:
1. Proposed Action Location Map
2. Map of Historic Properties at Hanscom AFB

G:\Projects2\MA\Hanscom_AFB\6745\MXD\Fig1_Overview.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Lead Service Line Replacement **Hanscom Air Force Base, Massachusetts**

Epsilon ASSOCIATES INC.

Attachment 1

Proposed Action Location Map: Overview of Potentially Lead Containing Pipe Segments

AFCRL Historic District Detail

N

Legend

- AFCRL Historic District
- NERI Buildings
- Non-Contributing Element within Historic District
- Contributing to National Register Eligible Historic District
- Installation Boundaries

CUI//DCRIT

Cooperative Agreement Number:
W9126G-14-2-0018 -
W9126G-20-2-0004

Hanscom AFB

Main Base Historic Buildings

0 500 1,000 2,000 Feet

Coordinate System: WGS 1984 World Mercator

Prepared By:
Edward R. Camp, Jr.
ISS Environmental GIS Support Analyst
Environmental Management Directorate
AFCEC/CZO
Joint Base McGuire-Dix-Lakehurst, NJ
ed.camp@colostate.edu
Last Save Date: 9/15/2023

CONTROLLED BY CENTER FOR ENVIRONMENTAL MANAGEMENT OF MILITARY LANDS & AIR FORCE CIVIL ENGINEER CENTER, ENVIRONMENTAL GIS PROGRAM OFFICE

Map created for presentation purposes only. Although efforts have been made to verify data, accuracy cannot be guaranteed

APPENDIX B

Notice of Availability and Comment Letters

APPENDIX C

ESA “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

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

APPENDIX D

ACAM Model Report

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

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

a. Action Location:

Base: HANSCOM AFB
State: Massachusetts
County(s): Middlesex
Regulatory Area(s): Boston-Lawrence-Worcester (E. MA), MA

b. Action Title: Proposed Action

c. Project Number/s (if applicable): 6745

d. Projected Action Start Date: 5 / 2024

e. Action Description:

The Proposed Action proposes to investigate water service lines at Hanscom AFB, create an inventory of existing service lines, identify potential lead service lines, and remove lead service lines. Figure 2 shows the location of potentially suspect lead service lines to be investigated and replaced. The EA will discuss the need for the proposed action, compare the proposed action to the No-Action Alternative, describe the affected environment and the environmental impacts of the proposed action, and present proposed management practices. Other alternatives were not carried forward for analysis.

f. Point of Contact:

Name: Ida Weiss
Title: Project Engineer
Organization: Epsilon Associates
Email: iweiss@epsilonassociates.com
Phone Number: 978-897-7100

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

Conformity Analysis Summary:

2024

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Boston-Lawrence-Worcester (E. MA), MA			
VOC	0.212	50	No
NOx	1.083	100	No
CO	1.688		
SOx	0.004		
PM 10	0.520		

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

PM 2.5	0.046		
Pb	0.000		
NH3	0.001		
CO2e	360.7		

2025 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Boston-Lawrence-Worcester (E. MA), MA			
VOC	0.000	50	No
NOx	0.000	100	No
CO	0.000		
SOx	0.000		
PM 10	0.000		
PM 2.5	0.000		
Pb	0.000		
NH3	0.000		
CO2e	0.0		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

Ida Weiss, Project Engineer DATE