2022
L.G. HANSCOM FIELD

Environmental Status & Planning Report

Public Information Session 2

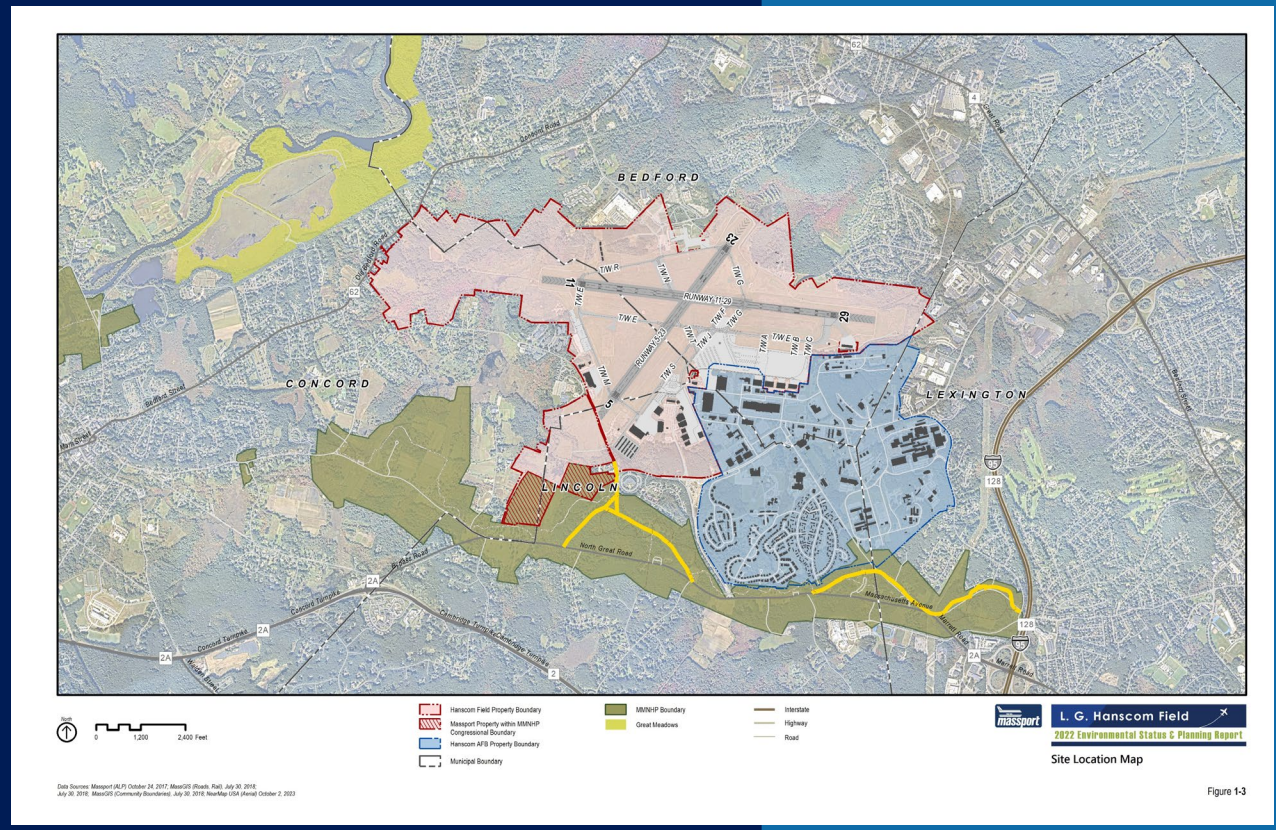
June 11, 2024

AGENDA

- Introductions
- Hanscom Field Overview
- ESPR Purpose, Scope and Process
- Chapter Findings, chapters 7 – 11
- Question and Answer Session
  - Type your question into the chat box
  - Questions will be answered at the conclusion of the presentation

L.G. HANSCOM FIELD

- New England's premier, full service general aviation (GA) airport
- 1,300 acres of land
- Located within Bedford, Concord, Lexington, and Lincoln
- Historic context:
  - 1956 Massport acquired
  - 1974 Massport assumed operational control after Air Force
  - 1978 Master Plan
  - 1980 Regulations and Noise Rules



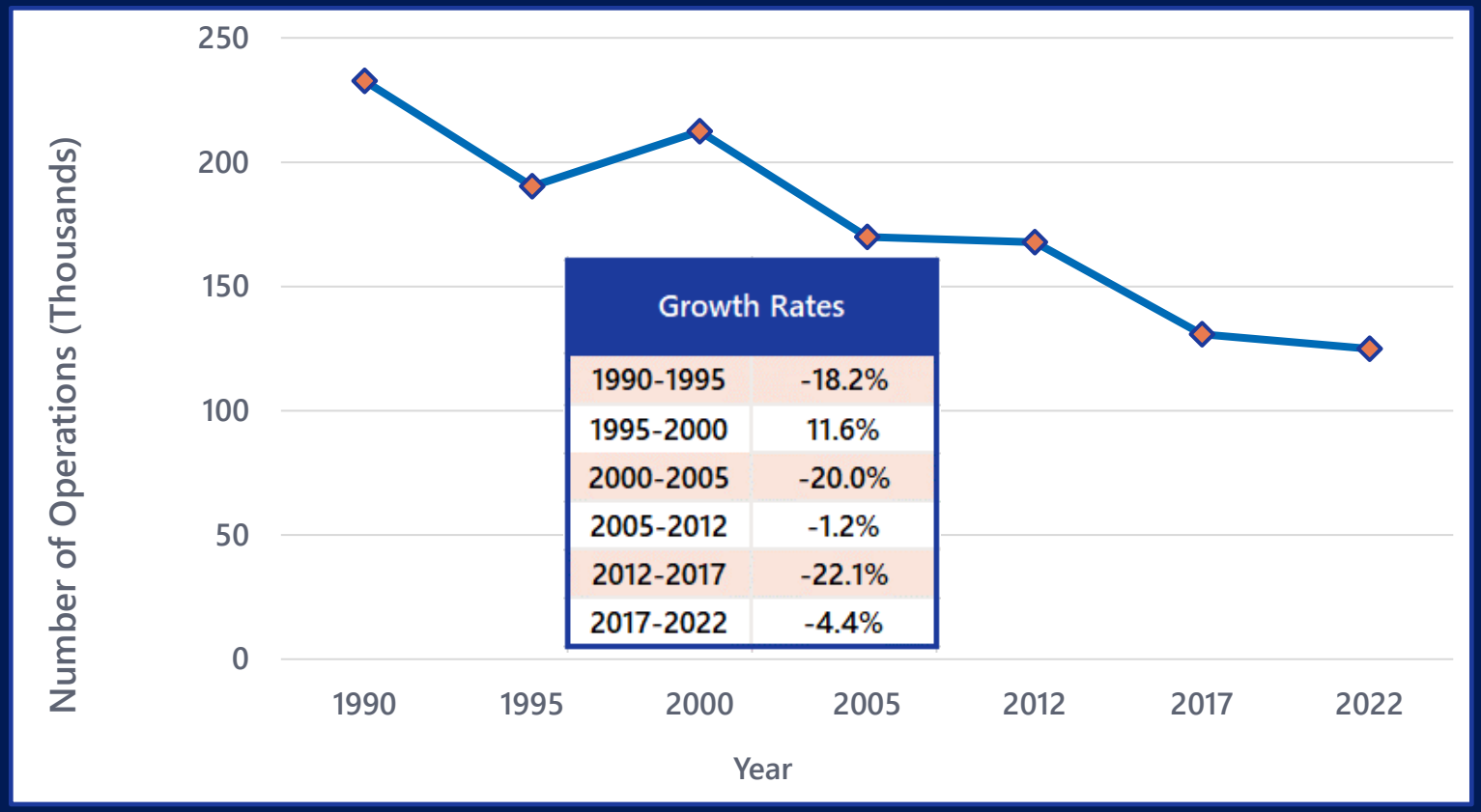
HANCOM FIELD'S ROLE IN REGIONAL TRANSPORTATION

- Serves as GA reliever for Boston Logan International Airport
- Leads the region in terms of overall GA activity
- Role is consistent with that defined in the 1978 Master Plan which limits commercial airline service at the airport
- No scheduled commercial passenger service since 2012

Figure 5-2

AIRCRAFT OPERATIONS AT HANSCOM FIELD

Figure 8-5. Annual Operations at Hanscom Field Over Time



Source: Massport operations data and HMMH, 2024

PURPOSE OF ESPR

- Provides a status report on current activity levels and environmental conditions
- Presents and evaluates potential future cumulative environmental conditions and activity levels
- Serves as a planning tool for assessing and reviewing changes
- Does not propose new projects or replace need for individual project reviews

SCOPE OF ESPR

Secretary issued Scope Certificate on December 16, 2022

Reports on 2022 current conditions and compares to historical data from prior ESPRs

Evaluates and assesses cumulative environmental effects of future scenarios for planning years 2030 and 2040 based on forecasts of airport activity levels

2030 and 2040 scenarios represent estimates of what *could* occur (not necessarily what will occur) in the future using certain planning assumptions

PROCESS OF ESPR

October 2022

Massport filed proposed scope with MEPA. Start of 45-day comment period; scoping meeting

December 2022

Secretary issued the Scope for the 2022 ESPR in its Certificate

2023

Compiled data, met with stakeholders, developed planning concepts, established current conditions, etc.

May 2024

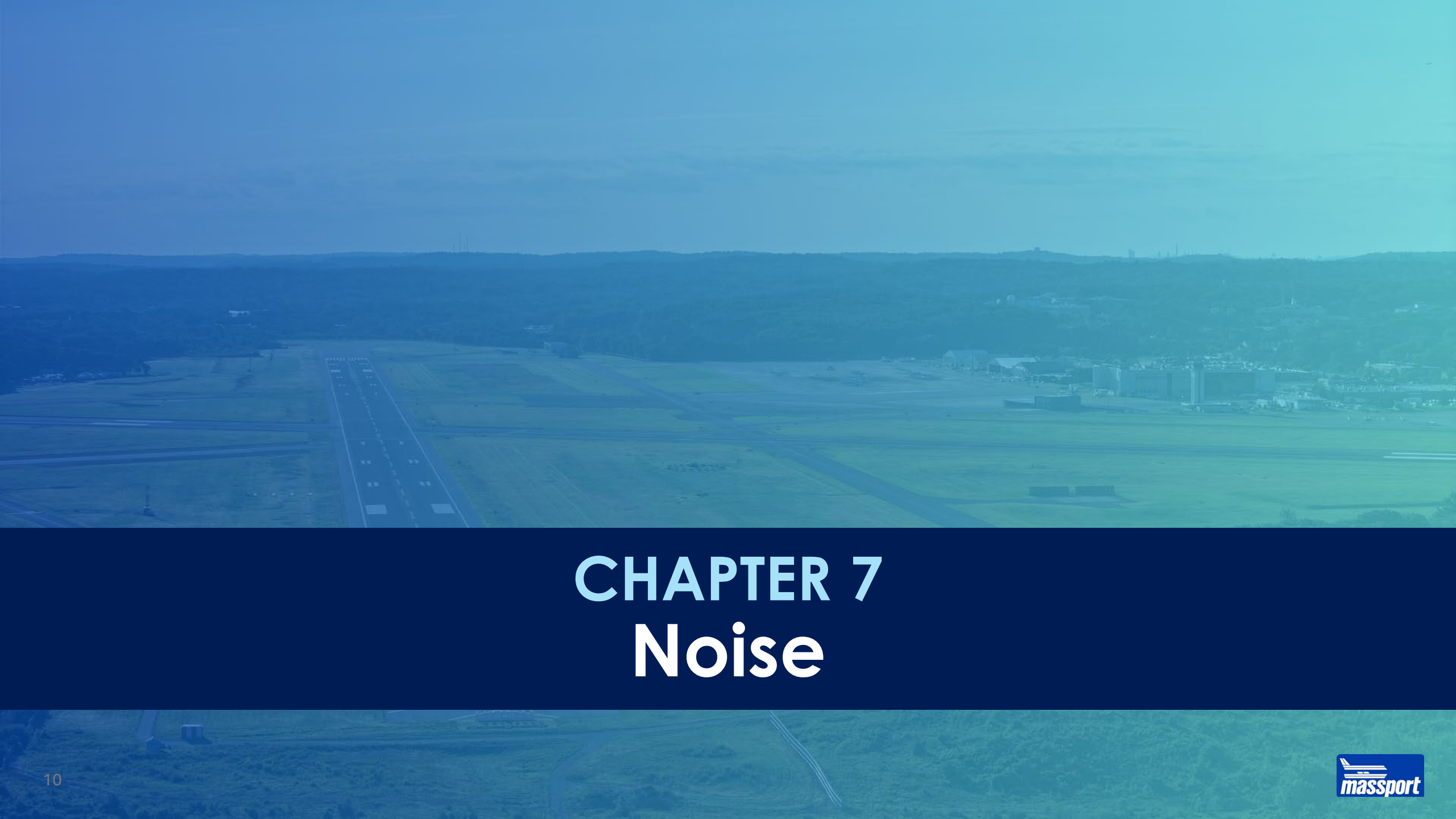
Massport filed 2022 ESPR. Start of public comment period.

June 2024

Technical Workshops and Public Information Meeting

ORGANIZATION OF ESPR

Chapter 1: Executive Summary	**Chapter 2: Facilities & Infrastructure**	**Chapter 3: Airport Activity Levels**	**Chapter 4: Airport Planning**
Chapter 5: Regional Transportation	**Chapter 6: Ground Transportation**	**Chapter 7: Noise**	**Chapter 8: Air Quality**
Chapter 9: Wetlands, Wildlife & Water Resources	**Chapter 10: Cultural and Historic Resources**	**Chapter 11: Sustainability, Resiliency, & Environmental Justice**	Appendices



CHAPTER 7
Noise

CHAPTER 7

Noise

- Provides background information on noise and how it is calculated
- Updates the status of the noise environment around Hanscom Field for 2022 conditions and for the 2030 and 2040 analysis years
- Reports past trends and the projections for the forecast activity levels in 2030 and 2040
- Reports on measures to reduce noise levels due to aircraft operations at the airport

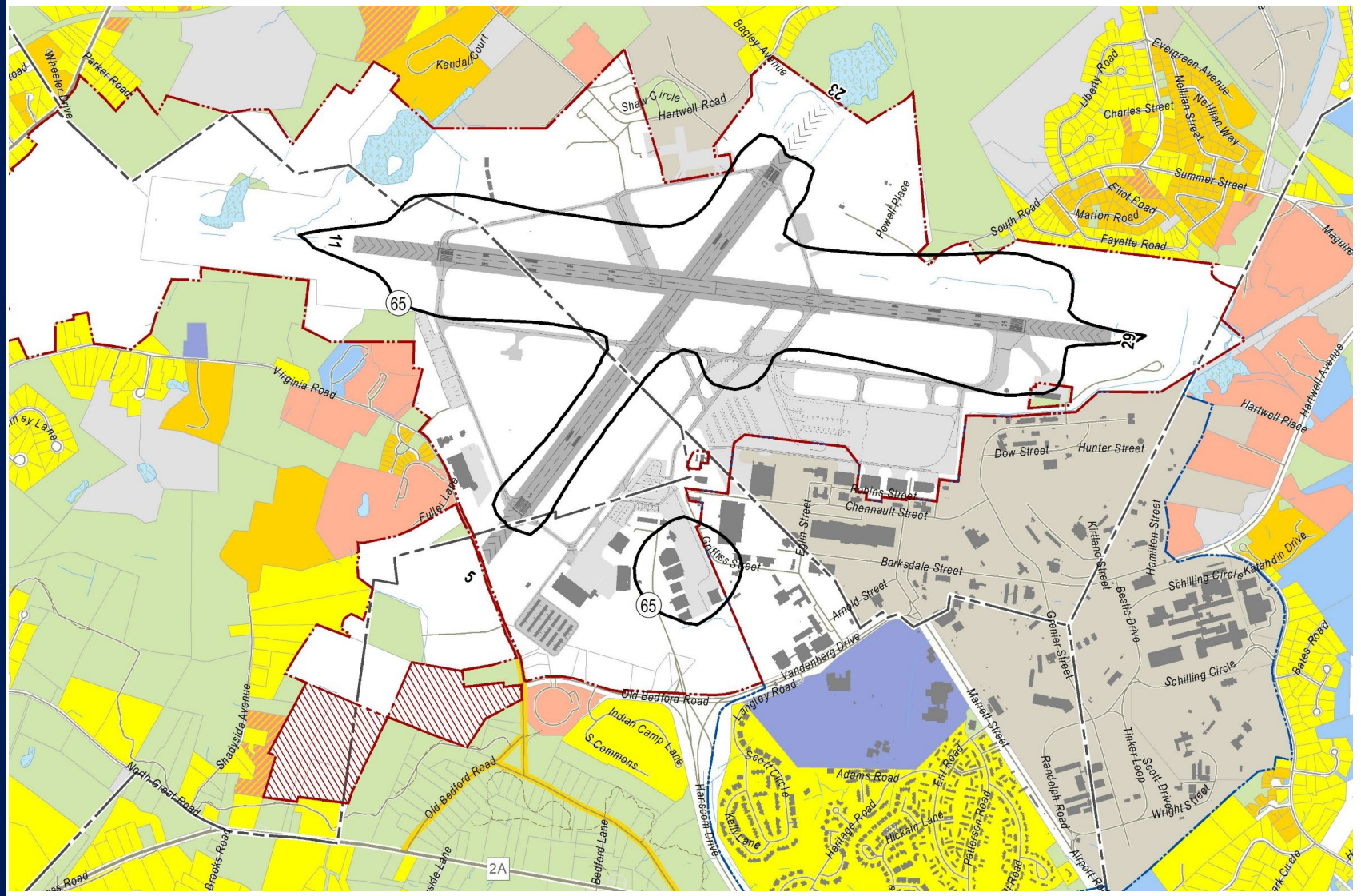
Noise

KEY FINDINGS

- The total population exposed to Day-Night Average Sound Level (DNL) greater than 65 dB remained at zero in 2022 (from zero in 2017 and 2012).
- Through 2040, no residential land use or people are shown to be within the DNL 65 dB noise contour.
- Continued aircraft fleet modernization and lower overall activity levels compared to historical levels have decreased noise since 2005.
- The Time Above analysis shows less acreage and smaller populations exposed to Time Above 55 and 65 dB in 2022 as compared to 2017.
- Noise levels in 2030 and 2040 are projected to remain lower than what was experienced in 2005.

2022 DNL 65 Noise Contours

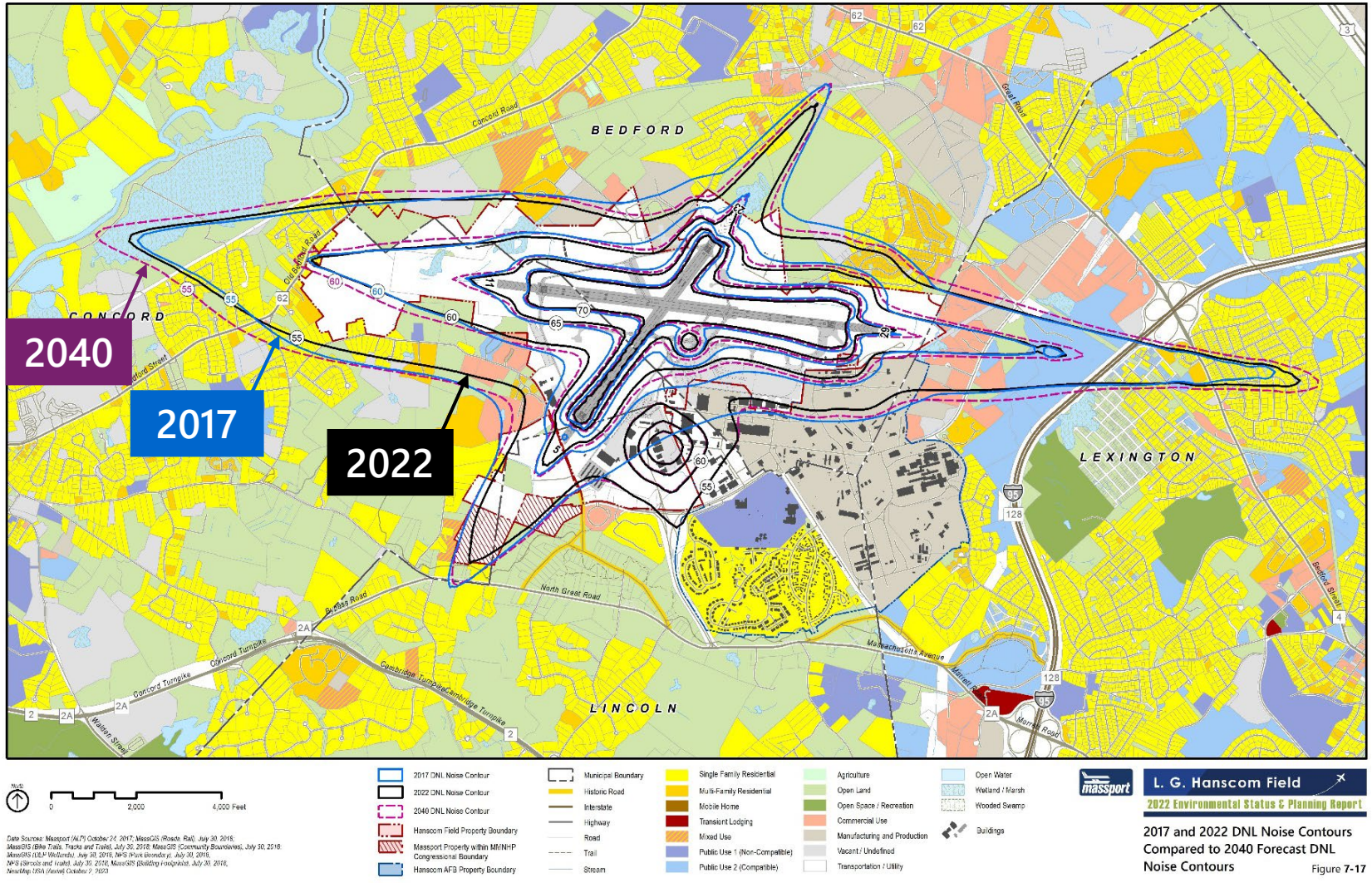
FAA considers levels ≥ DNL 65 dB over residential land use as incompatible with aircraft noise



2017 and 2022 DNL Noise Contours

Compared to 2040 Forecast DNL Noise Contours

FAA considers levels ≥ DNL 65 dB over residential land use as incompatible with aircraft noise



Census Counts within the DNL Noise Contours

Table 1-3. Summary of U.S. Census Population Counts within DNL Contour

Year/Scenario	U.S. Census Data	Population	
		65 dB or Greater	55 dB or Greater
2005	2000	17	2,953
2012	2010	0	1,041
2017	2010	0	1,271
2022	2020	0	1,324
2030	2020	0	1,521
2040	2020	0	1,757

Source: HMMH 2023

Noise

Supplemental Metrics

- **Time Above** - the total minutes in a 24-hour average day when aircraft noise exceeds a defined threshold.
  - TA 65 is useful for considering speech interference
  - Only small area off airport property experiences TA65 greater than 30 minutes
- **Total Noise Exposure (EXP)** - an index calculated Hanscom Annual Noise Report
  - EXP is useful for judging year to year changes and relative contribution of different aircraft categories
- **Sound Exposure Level (SEL)**
  - SEL contours (noise footprints) for representative aircraft to compare levels
  - Historical and future distribution plots of departure SELs show relative noisiness of the aircraft fleet over time

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CHAPTER 8
Air Quality

CHAPTER 8

Air Quality

- Describes air quality and pollutant emissions within Hanscom Field study area
- Provides background information on air quality regulations
- Compares current emissions levels to prior ESPRs and to future levels in 2030 and 2040
- Provides greenhouse gas emission inventories for Hanscom Field

Air Quality

KEY FINDINGS

- Hanscom Field comprises a very small portion of the total emissions in Middlesex County.
  - ranging from 0.02% of PM_{10} emissions to 0.54% of CO emissions
- Estimated 2022, 2030, and 2040 emission dispersion concentrations are in compliance with the National Ambient Air Quality Standards (NAAQS) and the Massachusetts Department of Environmental Protection (MassDEP) policy guidelines.
- From 2017 to 2022, estimated total emissions of CO, PM, and CO_2 decreased and NO_x, and VOC increased.
- From 2022 to 2030, estimated total emissions of CO and PM are expected to decrease, and emissions of NO_x, VOC, and CO_2 are expected to increase.
- Estimated total emissions for all reported pollutants are expected to increase from 2030 to 2040 due to forecasted increases in operations.

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AIRCRAFT EMISSIONS COMPARED TO TOTAL MIDDLESEX COUNTY EMISSIONS

Table 8-4. Total Criteria Pollutant Emissions from all Sources in Middlesex County (2020)

Source Type	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	CO_2
	Emissions in thousands of kilograms per year					
Point	15,450	4,905	22,081	10,016	3,818	975,213
Mobile	77,833	6,364	4,920	957	470	5,963,725
Total	93,283	11,269	27,001	10,973	4,288	6,938,938
2022 Hanscom Field Aircraft Emissions	502.5	45.8	55.3	1.9	1.9	16,971
2022 Hanscom Field aircraft emissions as a % of Middlesex County total	***0.54%***	***0.41%***	***0.20%***	***0.02%***	***0.04%***	***0.24%***

COMMUNITY RECEPTOR ANALYSIS COMPARED TO NAAQS STANDARDS

Table 8-10. Modeled Maximum Air Concentrations in 2040 at 10 Community Receptors (µg/m3)

Source	Receptor	CO 1 Hour	CO 8 Hour	NO_2 1 Hour	NO_2 Annual	PM_{10} 24 Hour	PM_{10} Annual	$PM_{2.5}$ 24 Hour	$PM_{2.5}$ Annual
Concentration from Hanscom Operations	1	1101.5	739.8	76.5	5.3	1.4	0.2	1.4	0.2
	2	913.8	639.5	65.3	4.6	1.4	0.2	1.4	0.2
	3	572.1	400.4	40.9	3.3	0.7	0.1	0.8	0.2
	4	554.0	387.5	37.6	3.3	0.7	0.1	0.8	0.2
	5	680.0	456.0	48.8	4.0	0.7	0.1	0.8	0.2
	6	394.5	276.1	27.7	1.9	0.4	0.1	0.4	0.1
	7	266.7	187.0	19.1	1.9	0.4	0.1	0.4	0.1
	8	521.7	365.2	35.6	3.3	0.7	0.1	0.8	0.1
	9	262.6	183.5	19.1	1.9	0.4	0.1	0.4	0.1
	10	269.1	188.8	19.1	1.9	0.4	0.1	0.4	0.1
Total Concentration Including Background	1	2910.4	2004.8	179.9	27.0	35.4	14.5	20.7	9
	2	2722.8	1904.5	168.7	26.3	35.4	14.5	20.7	9
	3	2381.0	1665.4	144.3	24.9	34.7	14.4	20.1	9
	4	2362.9	1652.5	141.0	24.9	34.7	14.4	20.1	9
	5	2489.0	1721.0	152.2	25.6	34.7	14.4	20.1	9
	6	2203.4	1541.1	131.1	23.6	34.4	14.4	19.7	8.9
	7	2075.7	1452.0	122.5	23.6	34.4	14.4	19.7	8.9
	8	2330.7	1630.2	139.0	24.9	34.7	14.4	20.1	8.9
	9	2071.5	1448.5	122.5	23.6	34.4	14.4	19.7	8.9
	10	2078.0	1453.8	122.5	23.6	34.4	14.4	19.7	8.9
Air Quality Standard or Guideline (µg/m³)		**40,000**	**10,000**	**188/320[3]**	**100**	**150**	**50**	**35**	**12**

OPERATIONAL EMISSIONS

Table 8-3. and Table 8-7. Hanscom Field Aircraft Operations Emissions

Year	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	CO_2
	Emissions in thousands of kilograms per year					
2000	591.2	25.4	39.4	2.3	2.3	10,108
2005	1,670.0	34.1	112.7	13.5	13.5	19,233
2012	1,123.0	31.9	80.4	9.9	9.9	16,356
2017	1,557.0	34.8	51.4	1.9	1.9	17,735
2022	502.5	45.8	55.3	1.9	1.9	16,971
2030	424.0	49.1	58.8	1.86	1.86	18,477
2040	445.6	53.9	65.0	2.02	2.02	20,544

Sources: Previous ESPRs and HMMH analysis, 2023

Table 8-5. and Table 8-7 Emissions from Hanscom Field Vehicular Traffic

Year	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	CO_2
	Emissions in thousands of kilograms per year					
2000	61	6.9	3	0.2	0.2	1496
2005	36	4.1	1.6	0.1	0.1	1,312
2012	19	2.2	1.0	0.1	0.1	1,555
2017	2.9	0.3	0.1	0.01	0.01	407
2022	1.8	0.1	0.020	0.001	0.001	375
2030	1.6	0.028	0.015	0.0013	0.0012	420
2040	1.0	0.007	0.014	0.0012	0.0011	495

Sources: HMMH, 2024

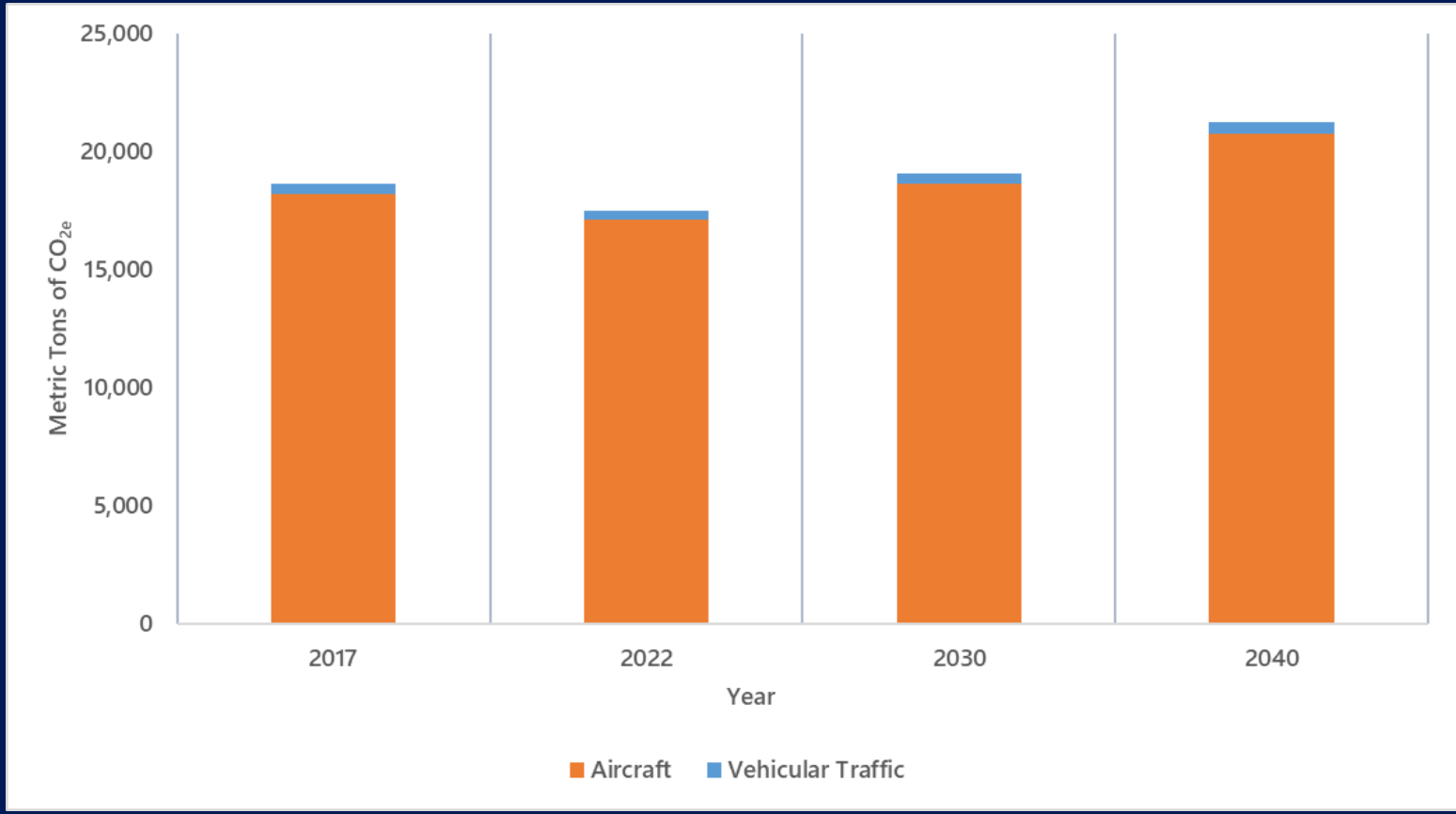
GREENHOUSE GAS EMISSIONS INVENTORY COMPARED TO STATEWIDE TOTALS

Table 8-12. Hanscom Field GHG Emissions Inventory Summary

Massport Ownership Category	Source	Scope	CO_2	N_2O	CH_4	Total CO_{2e}
			Emissions Expressed in MT per year			
Category 1 – Massport Owned/ Controlled Emissions	GSE/APUs	1	1	0.000	0.000	1
	Stationary Sources	1	163	0.000	0.003	163
	Off-Airport Roadways	3	135	0.001	0.001	135
	Electricity Consumption	2	326	0.006	0.046	329
	Total Massport Emissions		625	0.007	0.047	628
Category 2 - Tenant Owned and/or Controlled	Aircraft – Ground Operations	3	7,058	0.223	0.033	7,120
	Aircraft – Ground to 3000 ft.	3	9,913	0.314	0.149	10,003
	Stationary Sources	3	1535	0.029	0.003	1,543
	GSE/APUs	3	277	0.032	0.045	288
	Off-Airport Roadways	3	979	0.006	0.006	981
	Electricity Consumption	3	1,429	0.027	0.200	1,442
	Total Tenant Emissions		21,063	0.629	0.436	21,248
Category 3 – Public Owned/ Controlled	Off-Airport Roadways	3	339	0.002	0.002	339
Total Hanscom Field GHG Emissions			22,155	0.640	0.485	**22,344**
Massachusetts Statewide Totals (2019)			62,909,067	714,047	1,640,629	**71,667,107**
Hanscom Field Emissions as a % of Statewide Totals			0.03%	<0.01%	<0.01%	**0.03%**

GHG EMISSIONS

GHG Emissions from Aircraft and Vehicular traffic



PATH TO A LEAD-FREE FUTURE AT HANSCOM

- Lead emissions in 2022 was 501 lbs.
- Emerging fuel technology is allowing more piston engine aircraft to use unleaded avgas.
- 80 percent of all piston-engine aircraft operations expected to use unleaded avgas by 2030.
- 100 percent of piston- engine operations expected to use unleaded fuel by 2040.

CHAPTER 9
Wetlands, Wildlife & Water Resources

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Wetlands, Wildlife & Water Resources

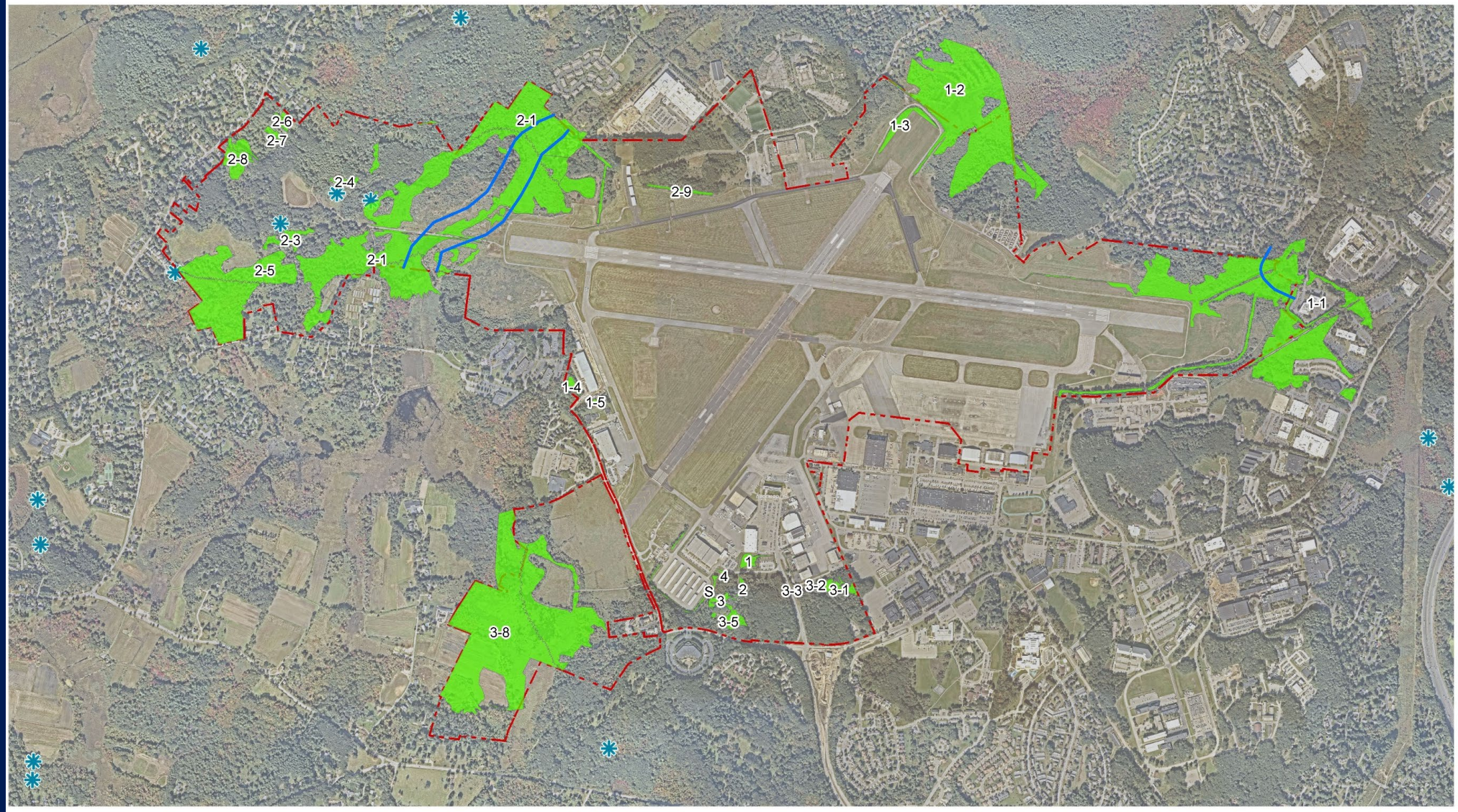
- Overview of Hanscom Field's natural environment
- Current efforts to minimize impacts to the natural environment
- Information about wetlands, wildlife, and water resources
- Status of various plans for Hanscom Field

Wetlands, Wildlife & Water Resources

KEY FINDINGS

- Wetlands, wildlife, and water resource areas at Hanscom Field are fundamentally unchanged
- Massport prepared a 2019 Vegetation Management Plan update and continued to mitigate runway safety obstructions
- In the Hanscom Field vicinity, three bird species and two turtle species have been identified as Endangered, Threatened, or Special Concern species in Massachusetts
- The northern long-eared bat was reclassified as Endangered under the federal Endangered Species Act effective January 30, 2023.
    - As of January 2024, the northern long-eared bat had not been found to occur on airport property.

Wetlands, Surface Waters, and Vernal Pools



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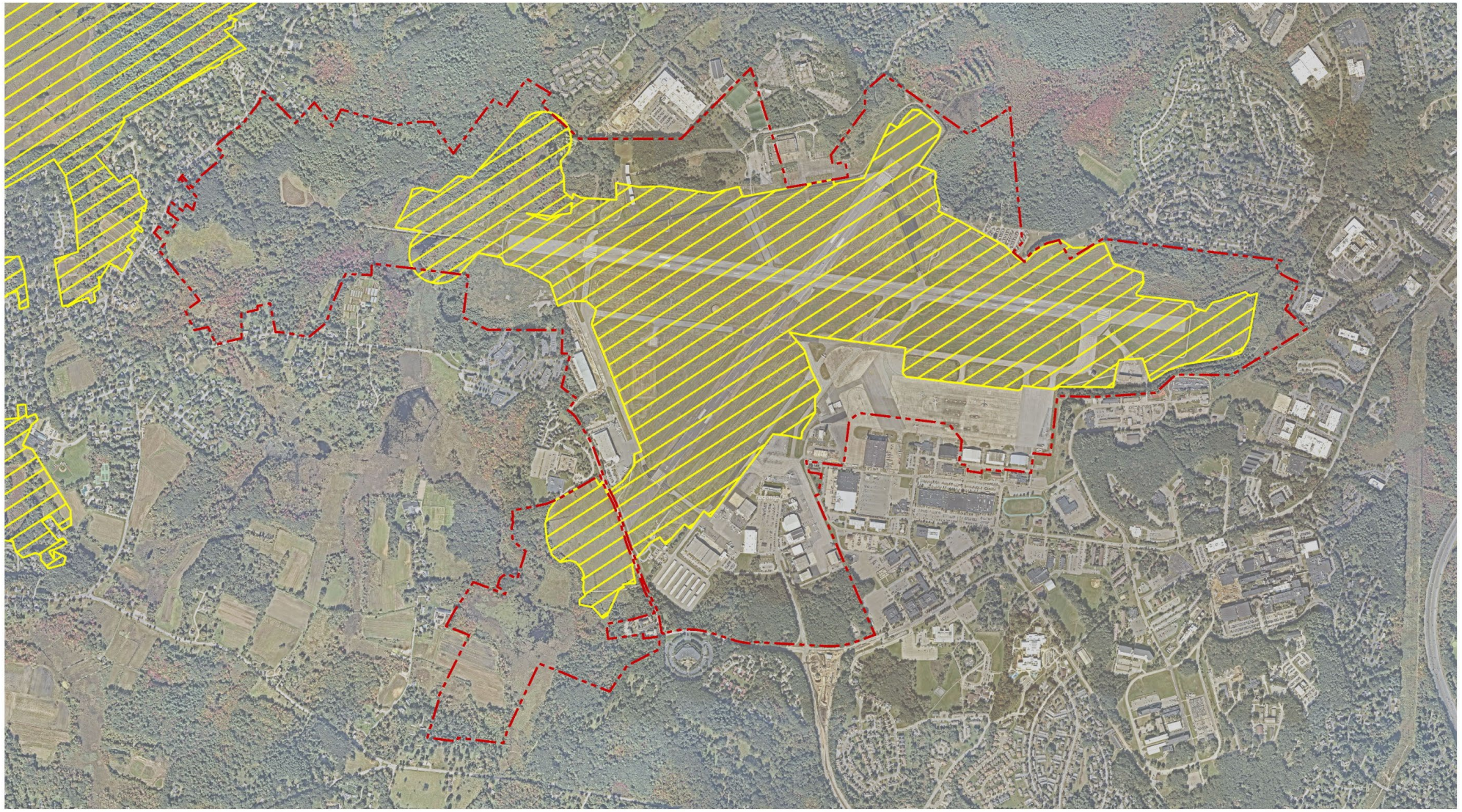
L. G. Hanscom Field

2022 Environmental Status & Planning Report

Previously Delineated Wetlands and Surface Waters

Figure **9-1**

NHESP Priority Habitat



STATE-LISTED SPECIES

Table 9-2. State-listed Species at Hanscom Field

Common Name	Scientific Name	MA State Status	Location of Habitats in Relation to the Airport
Upland sandpiper	*Bartramia longicauda*	Endangered	Within airfield
Grasshopper sparrow	*Ammodramus savannarum*	Threatened	Within airfield
Eastern meadowlark	*Sturnella magna*	Special Concern	Within airfield
Blanding's turtle	*Emydoidea blandingii*	Threatened	Adjacent to the west end of the airfield
Wood turtle	*Glyptemys insculpta*	Special Concern	Within the airfield

Source: Natural Heritage and Endangered Species Program, August 24, 2018 letter


Upland Sandpiper


Grasshopper Sparrow


Eastern Meadowlark


Blanding's Turtle


Wood Turtle

STORMWATER and SPILL MANAGEMENT

- Stormwater management includes:
  - Stormwater Pollution Prevention Plan (SWPPP)
  - National Pollution Discharge Elimination System (NPDES) inspections
  - Water quality monitoring
  - Spill prevention planning

- Chapter 9 also reports on spill remediation activities

2030 AND 2040 SCENARIOS

Wetlands

No impacts to wetlands are expected, but some projects may require field visits as part of projects.

Vernal Pools

Proposed projects are not located near the 3 vernal pools and no impacts are expected.

Rare/Endangered Species

Some planning areas contain wooded areas. Therefore, consultation with USFWS will be required prior to any tree removal activities within these wooded areas to analyze potential impacts to northern long-eared bats.

Water Quality

Water quality will continue to be protected through compliance with the NPDES program and MassDEP stormwater standards, and through the implementation of SWPPPs, appropriate stormwater BMPs, and spill prevention, control, and countermeasure plans.

CHAPTER 10
Cultural and Historic Resources

CHAPTER 10

Cultural and Historic Resources

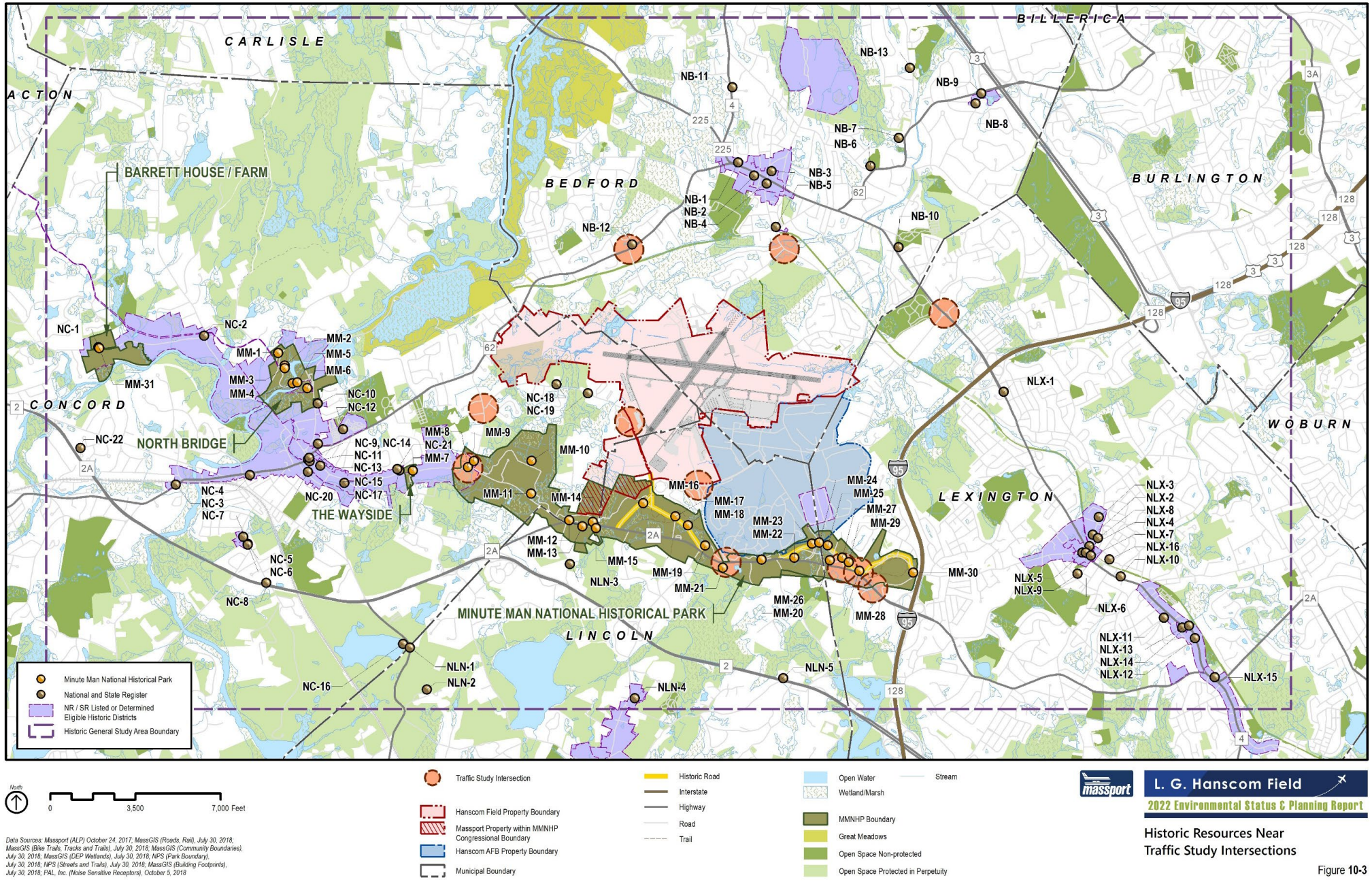
- Reviews existing data on cultural, historic and archeological resources located at and near Hanscom Field.
- Presents information about MMNHP and historic properties in the park.
- Evaluates potential effects of traffic, air quality, and noise on historic and cultural sites currently and in future planning scenarios.

Cultural and Historic Resources

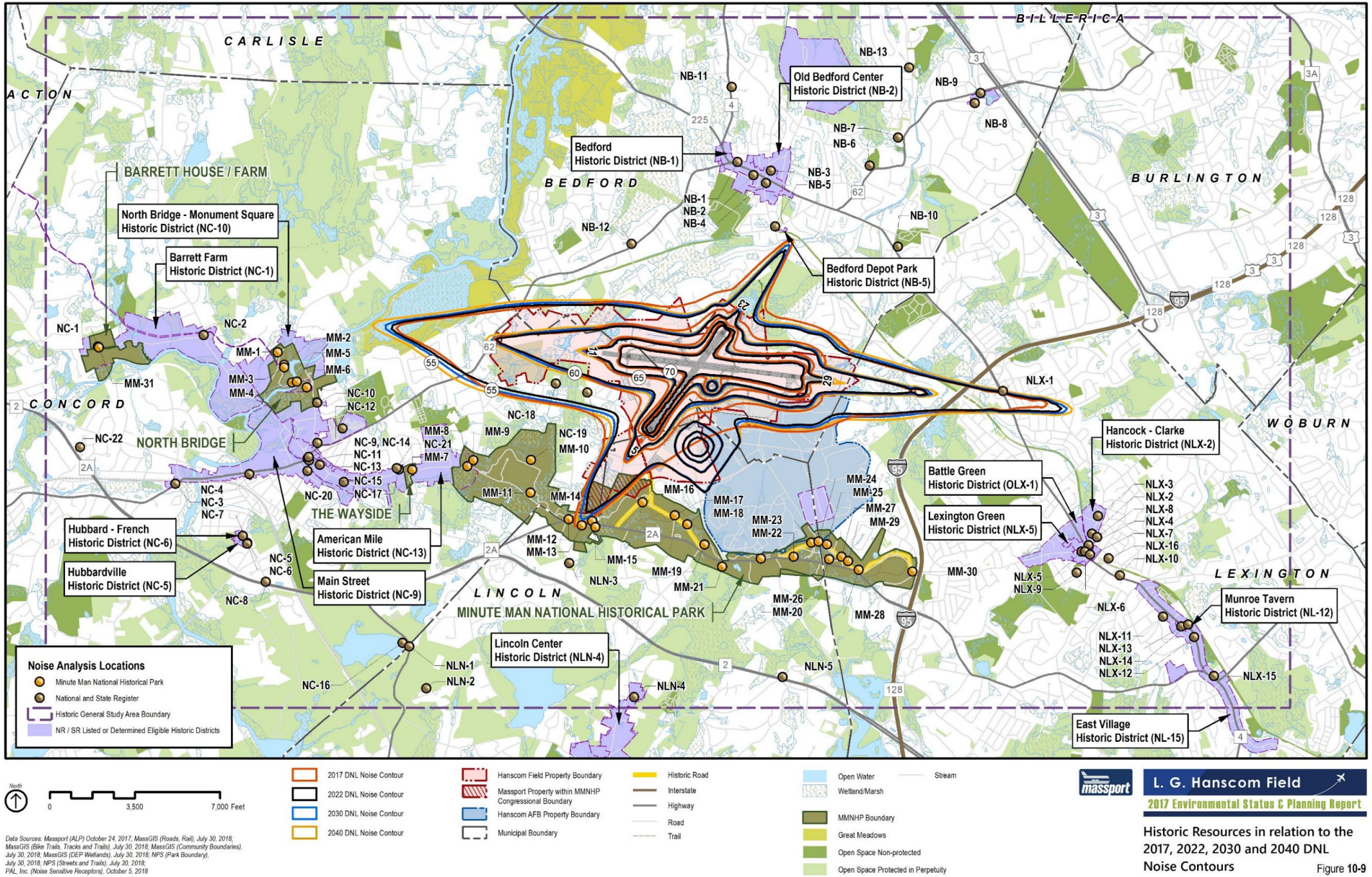
KEY FINDINGS

- No historic resources are exposed to noise levels of DNL 65 dB or higher in 2022 or any future scenarios.
- The 2040 forecast scenario shows a similar number of cultural and historic resources within the DNL 55 dB noise contour as was forecasted for 2035 in the 2017 ESPR.
- Three historic National Register-listed resources will have a projected DNL exposure of between 55 and 60 dB in the forecasted scenarios.
- A slightly larger portion of MMNHP is within the DNL 55 dB noise contour forecast for 2040 than was forecasted for 2035 in 2017.
- No identified noise analysis sites in MMNHP will experience noise levels of DNL 60 dB or greater in the forecasted scenarios.
- One historic resource at one location has been National Register-listed since 2017.

- Possible future improvements at 2 of the 11 intersections may affect cultural and historic resources.
- Potential air quality impacts to cultural and historic resources have decreased since 2017.



Historic Resources in Relation to 2017, 2022, 2030, and 2040 DNL Noise Contours



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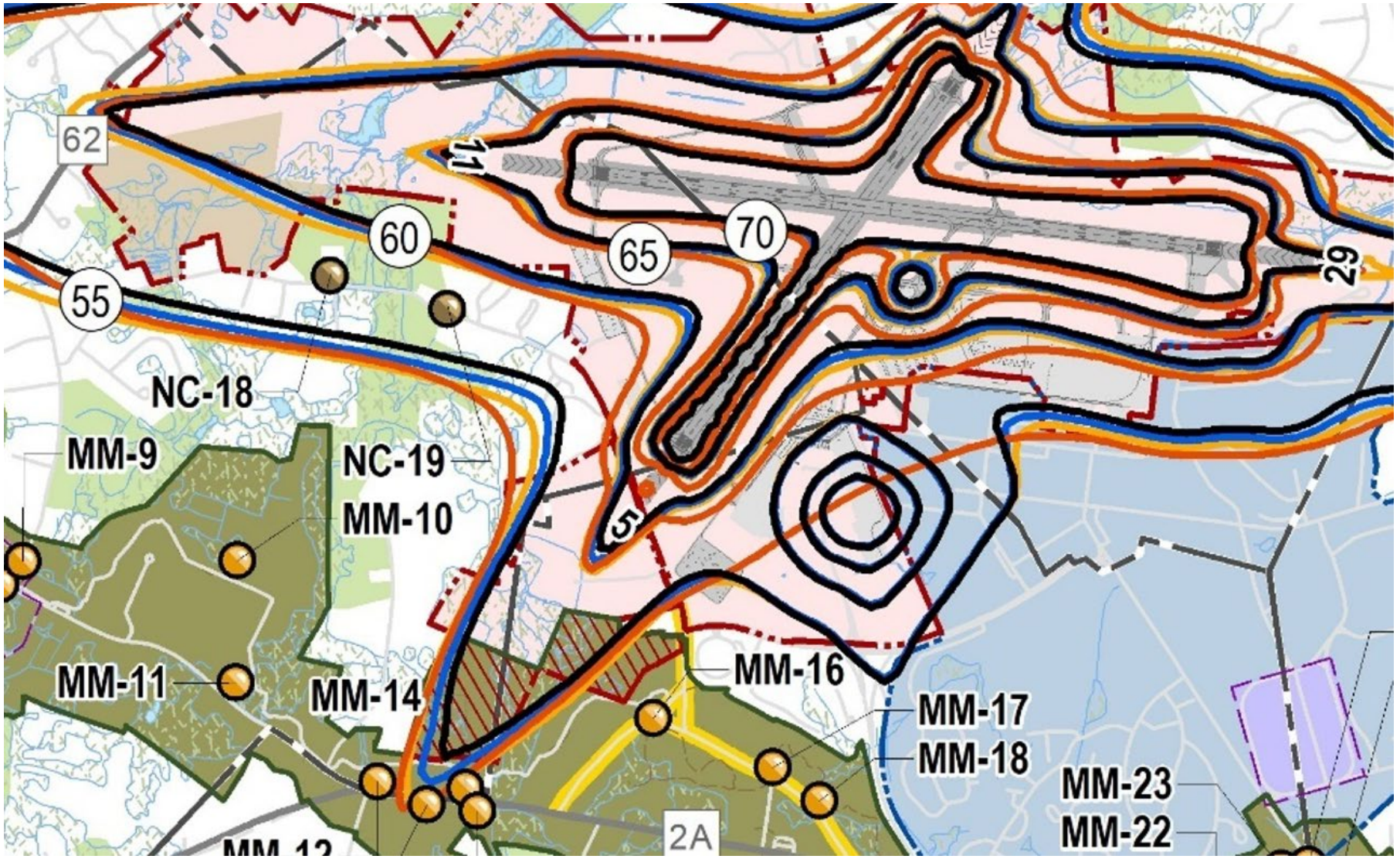


NOISE EXPOSURE TO CULTURAL AND HISTORIC PROPERTIES

Table 10-1. Summary of Noise Exposure to Cultural and Historic Properties Around Hanscom Field

Resource	2017	2022	2030	2040	2017	2022	2030	2040
	DNL 65 Contour				DNL 55 Contour			
National and State Registers - 43 Individual Properties	0 properties	0 properties	0 properties	0 properties	3 properties	3 properties	3 properties	3 properties
National and State Register – 25 Historic Districts (1,646 acres)	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres
Minute Man National Historical Park (975 acres)	0 acres	0 acres	0 acres	0 acres	52.9 acres	32.1 acres	42.5 acres	53.8 acres
Battle Road Interpretive Trail (4 miles)	0 miles	0 miles	0 miles	0 miles	0 miles	0 miles	0 miles	400 ft

CHAPTER 11
Sustainability, Resiliency, and Environmental Justice

CHAPTER 11

Sustainability, Resiliency, & Environmental Justice

Reports on Massport's:

- Sustainability practices at Hanscom Field
- Approach to climate adaptation
- Approach to sustainable design and development for new and existing facilities
- Current and planned environmentally beneficial measures at Hanscom Field.
- Vulnerable health criteria, potential sources of pollution, and other environmental indicators for identified EJ census blocks

Sustainability and Resiliency

KEY FINDINGS

- **2018 to 2022:** 974,600 pounds of single-stream recyclables collected at Hanscom Field
- **2018:** Massport updated the “Floodproofing Design Guide”
- **2018:** Massport updated “Sustainability and Resiliency Design Standards and Guidelines”
- **2020:** Massport attained LEED Silver certification of Hanscom Field’s Aircraft Rescue Fire Fighting (ARFF) and United States Customs and Border Protection (USCBP) facility.
- **2022:** Massport committed to achieving net zero carbon emissions across all its properties and facilities, including Hanscom Field, by 2031 in its “Roadmap to Net Zero.”
- **2023:** Massport replaced Runway 5/23 lighting with LED light fixtures to reduce maintenance costs and energy consumption. Approximately 324,000 square feet of impervious pavement was removed from the project area.

SUSTAINABILITY AT MASSPORT FACILITIES

Sustainability Vision

Massport will maintain its role as an innovative industry leader through continuous improvement in operational efficiency, facility design and construction, and environmental stewardship while engaging passengers, employees, and the community in a sustainable manner.

Figure 11-1. Airport Industry Concept of Sustainability

Sustainability Goals

- Reduce energy intensity and GHG emissions.
- Reduce waste generation, increase the recycling rate, and utilize environmentally sound materials.
- Provide superior ground access to Boston Logan through alternative and HOV travel modes.
- Conserve regional water resources.
- Minimize noise impacts.
- Protect water quality and minimize discharge of pollutants.
- Promote economically prosperous, equitable, and healthy communities, and passenger and employee well-being.
- Decrease air pollutants from Massport sources.
- Protect and restore natural resources.
- Improve resiliency for infrastructure and operations.
- Capture and store carbon naturally.

MASSPORT'S NET ZERO ROADMAP

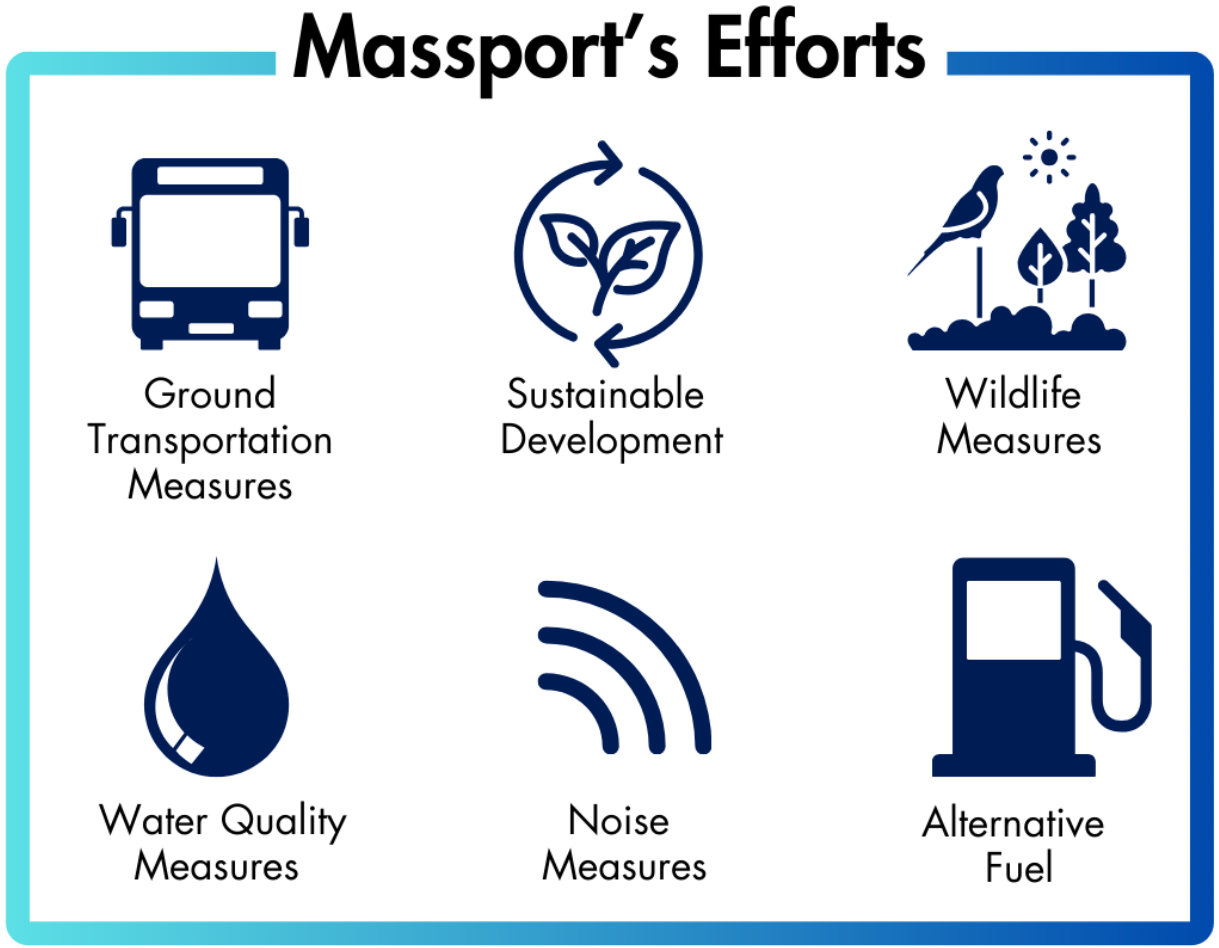
Five Pathways to Net Zero

- Energy conservation and efficiency measures
- Clean and renewable energy sources
- Sustainable ground transportation
- Partnerships
- Culture of sustainability and innovation

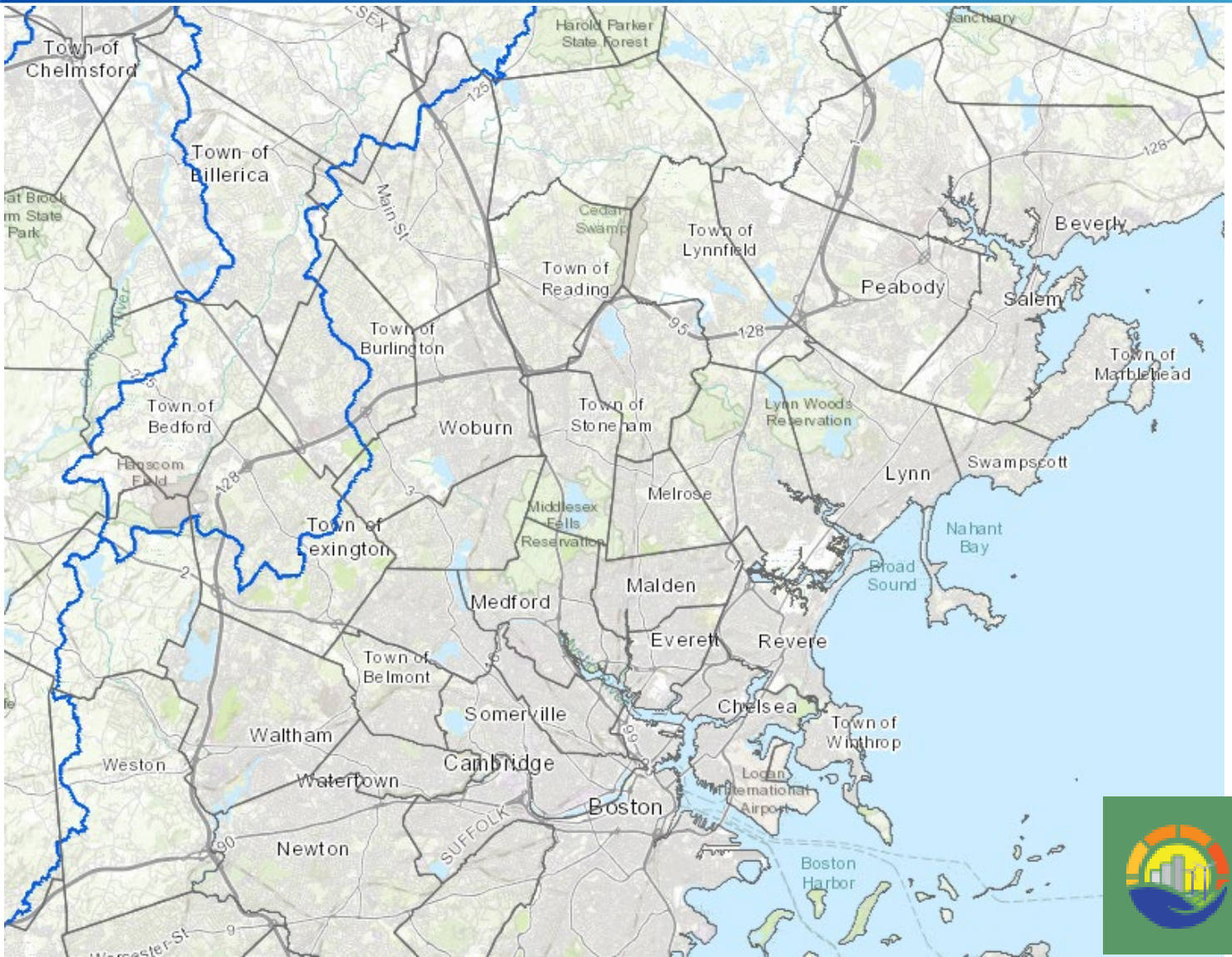
Hanscom Initiatives

- Repair or re-commission existing solar installations
- Explore feasibility of microgrid and energy storage opportunities
- Share eGSE among airlines where feasible
- Collaborate with utilities on electrical infrastructure redundance and capacity
- Coordinate with the MBTA and private shuttle operators to determine the feasibility of improved public transit options.

ENVIRONMENTALLY BENEFICIAL MEASURES



CLIMATE ADAPTATION AND RESILIENCY



Data from relevant layers in the ResilientMass map viewer tool concern climate resilience in three categories:

- Sea Level Rise/Storm Surge
- Precipitation and Flooding
- Extreme Heat

ResilientMass
Climate & Hazards Viewer

ENVIRONMENTAL JUSTICE (EJ) STUDY AREA

6 census block groups in the study area meet the EJ minority criteria

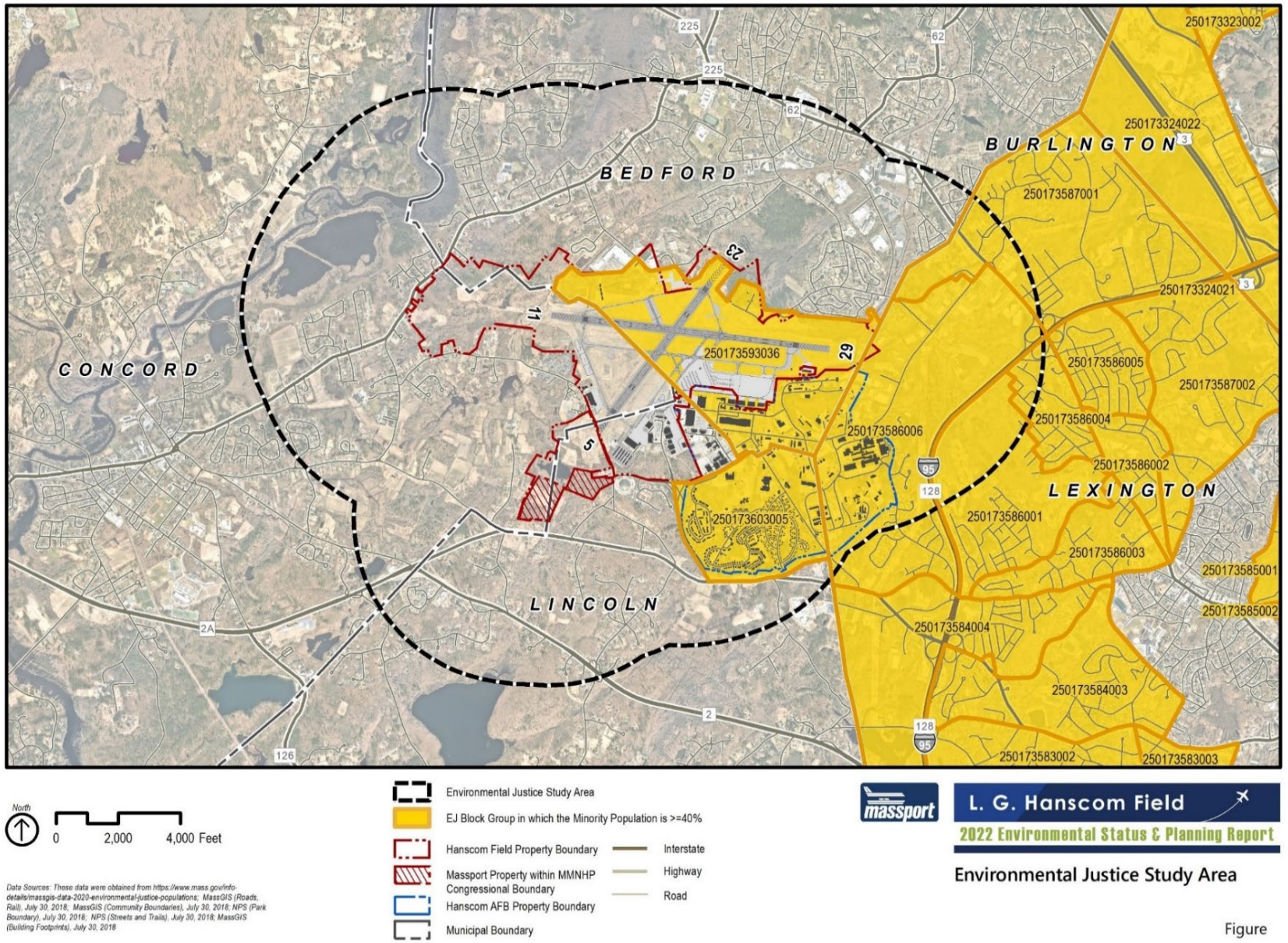


Figure 11-7. Environmental Justice Study Area

HOW TO PROVIDE FEEDBACK

Electronic Version of Document:

http://www.massport.com/massport/about-massport/project-environmental-filings/hanscom-field/

Public Comment Period

- Open until August 13, 2024
- Submit comments electronically at:
  - https://eeaonline.eea.state.ma.us/EEA/PublicComment/Landing
- Submit comments by email to:
  - Alex Strysky at alexander.strysky@mass.gov
- Submit written comments to:

  Secretary Rebecca Tepper
  Executive Office of Energy & Environmental Affairs
  Attention: MEPA Office
  EEA No. 5484/8696
  100 Cambridge Street, 10th Floor
  Boston, MA 02114

QUESTION AND ANSWER SESSION