

2017 L.G. Hanscom Field Environmental Status & Planning Report (ESPR)



Technical Workshop 1

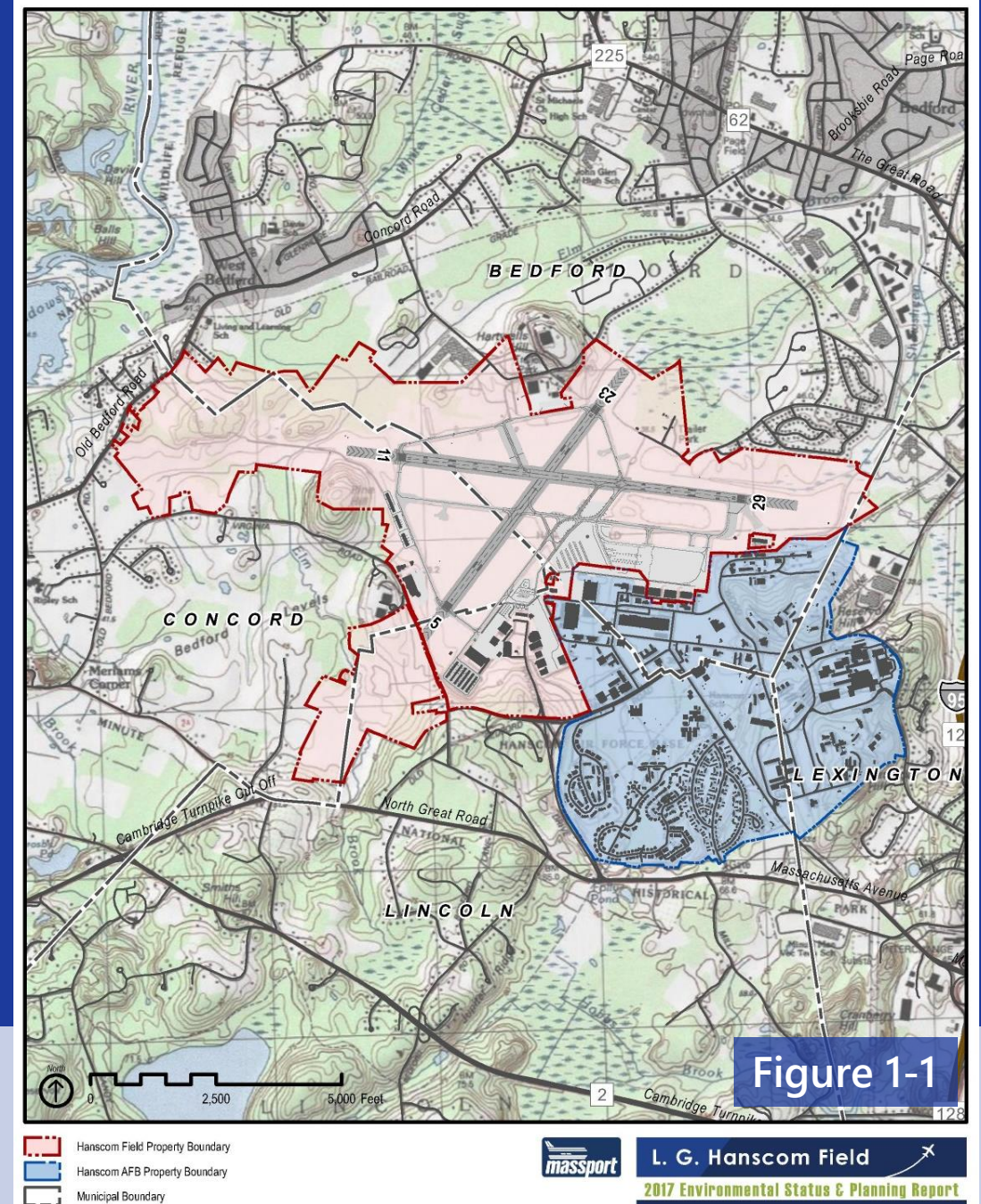
June 4, 2019
6:00 PM EDT
L.G. Hanscom Field

L.G. Hanscom Field 2017 ESPR



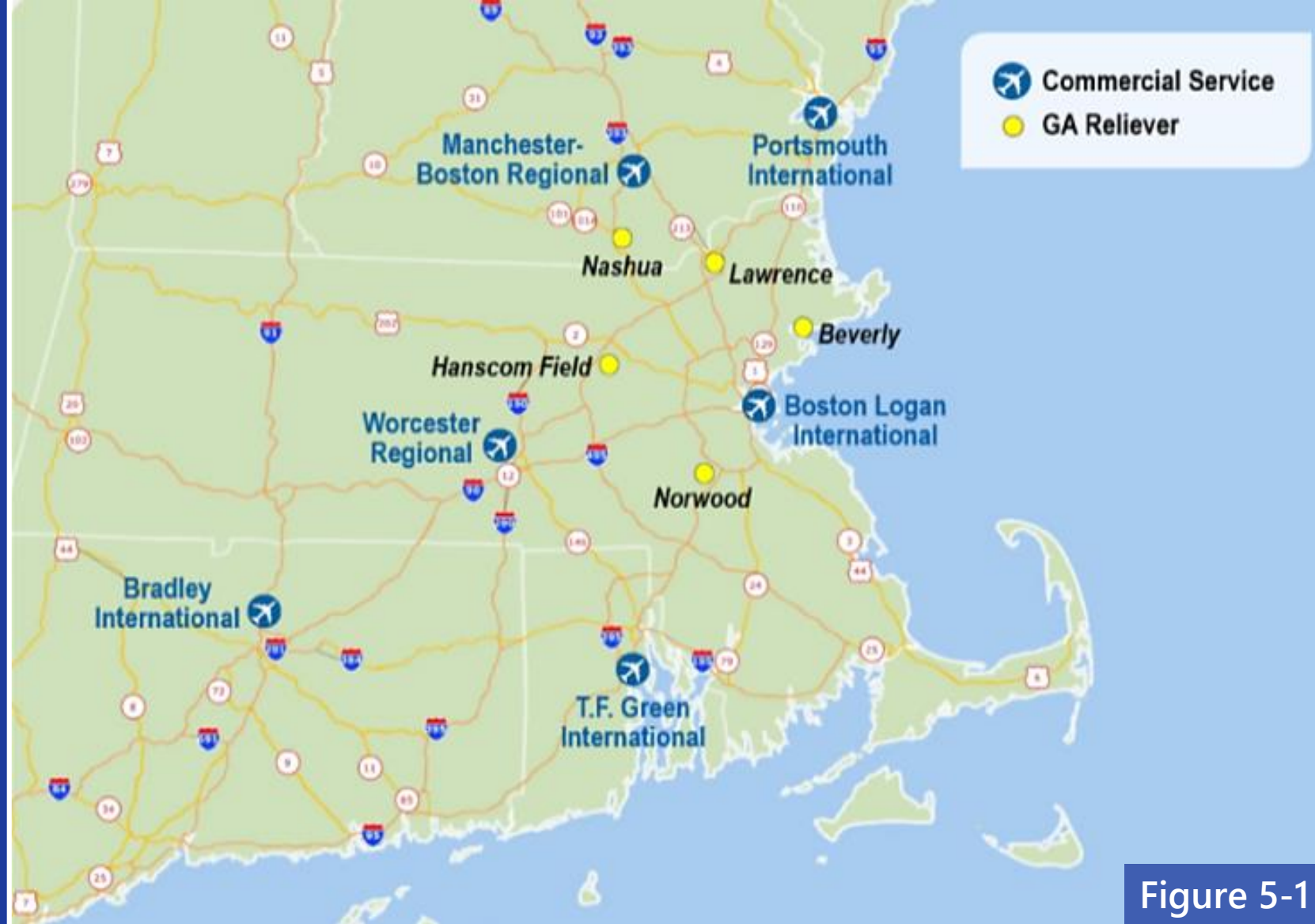
L.G. Hanscom Field

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



Role in Regional Transportation

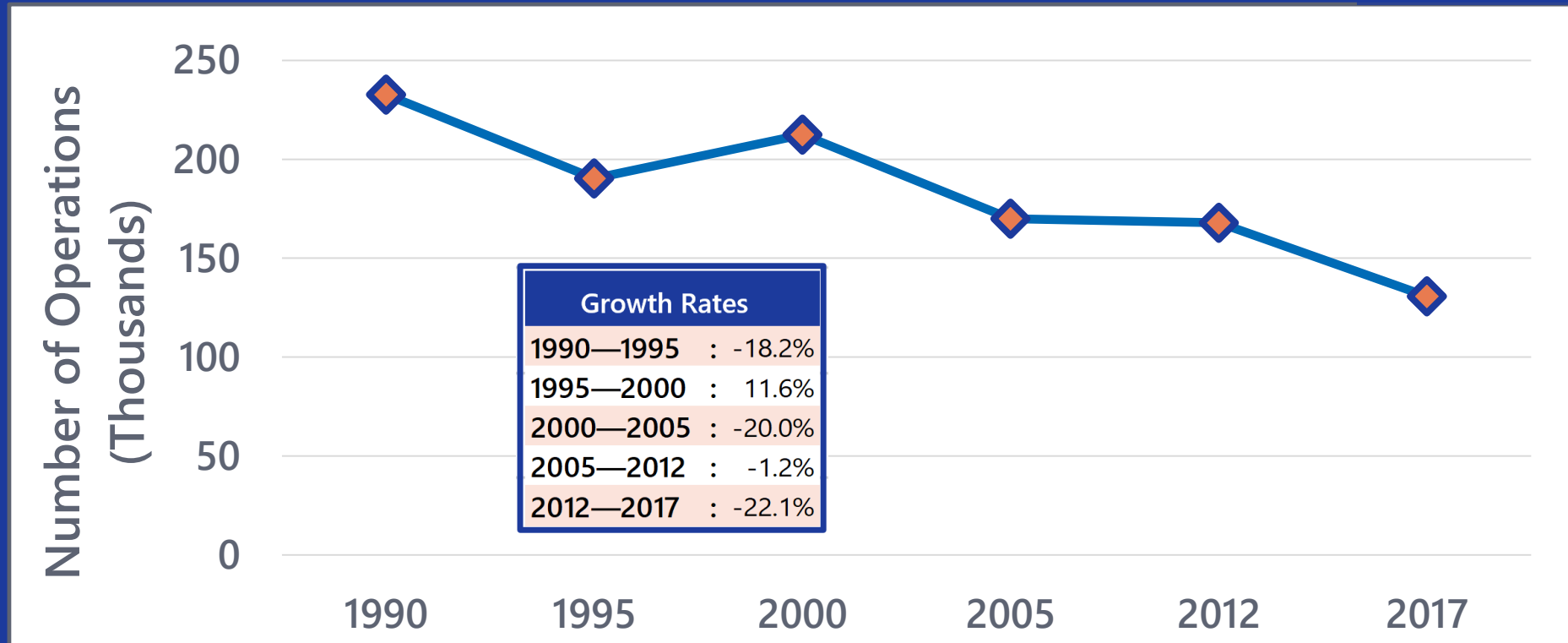
- Serves as GA reliever for Boston Logan International Airport (Logan Airport)
- Leads the region in terms of overall GA activity
- Role is consistent with that defined in the 1978 Master Plan which restricts commercial airline service at the airport.
- No scheduled commercial passenger service since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



L.G. Hanscom Field 2017 ESPR

Aircraft Operations at Hanscom Field Have Decreased Over Time

Figure 8-5



ESPR Purpose

- Provides a status report on activity levels and environmental conditions
- Presents and evaluates potential cumulative environmental effects of future scenarios
- Serves as planning tool for assessing and reviewing changes
- Does not replace need for individual project reviews

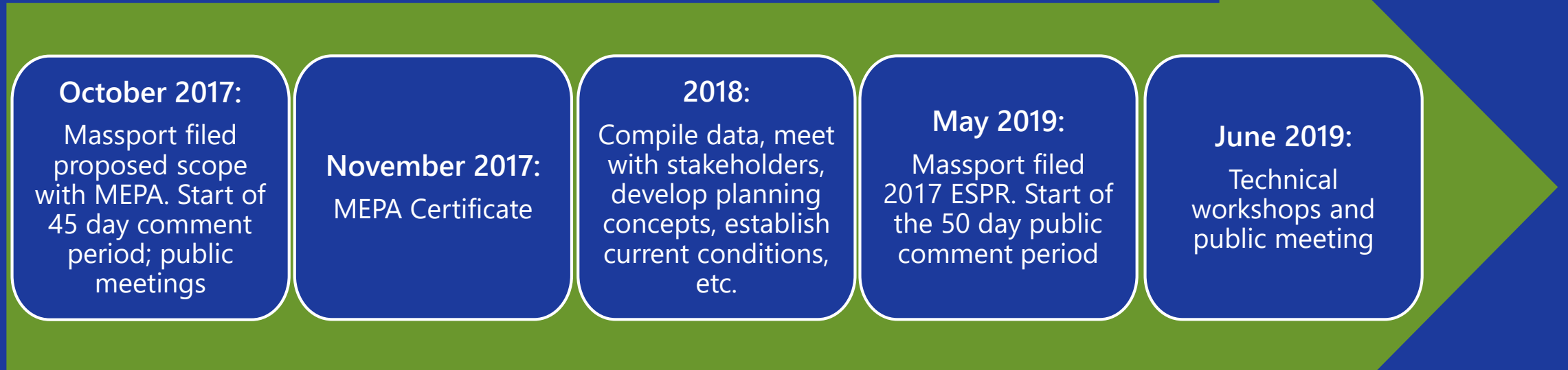


ESPR Scope

- Secretary of the Executive Office of Energy and Environmental Affairs (EEA) issued scope Certificate November 16, 2017
- Report on 2017 current conditions and compare to historical data from prior ESPRs
- Evaluate and assess cumulative environmental effects of future scenarios for planning years 2025 and 2035 based on forecasts of airport activity levels
- 2025 and 2035 scenarios represent estimates of what *could* occur (not necessarily what will occur) in the future using certain planning assumptions



ESPR Process



ESPR Organization

Chapter 1:
Executive Summary

Chapter 2:
Airport Facilities
and Infrastructure

Chapter 3:
Airport Activity
Levels

Chapter 4:
Airport Planning

Chapter 5:
Regional
Transportation
Context

Chapter 6:
Ground
Transportation

Chapter 7:
Noise

Chapter 8:
Air Quality

Chapter 9:
Wetlands, Wildlife,
& Water Resources

Chapter 10:
Cultural & Historical
Resources

Chapter 11:
Sustainability &
Environmental
Management

Appendices





Airport Facilities and Infrastructure ESPR Chapter 2

Airport Facilities and Infrastructure

Chapter 2:

- Describes the airfield and its supporting infrastructure, including parking and utility systems serving the airport
- Provides an assessment of facilities in inventory
- Provides information about the tank management program and hazardous material spill prevention efforts at Hanscom Field



Key Projects Since 2012

Year	Project(s)
2012	<ul style="list-style-type: none">• Portions of the perimeter road at the approach of Runway 11 were relocated to comply with the FAA runway safety area standards.
2013	<ul style="list-style-type: none">• Massport rehabilitated the pavement surrounding the old T-hangars (hangars for small GA aircraft).• Massport relocated portions of the perimeter road at the approach of Runway 29.
2014	<ul style="list-style-type: none">• Rectrix Aviation completed construction of a new Fixed Base Operator (FBO) and Hangar. This project resulted in additional parking at that location.• Massport rehabilitated the Pine Hill Apron• Massport replaced the electrical feeds for Hangar 3
2015	<ul style="list-style-type: none">• Massport installed a wildlife exclusion fence near the headwaters of the Shawsheen River to prevent wildlife from entering the airfield.• Massport installed new signage and landscaping at the entrance to Hanscom Drive abutting Route 2A• Massport rehabilitated the Runway 5 safety area beyond the runway end including a portion of Taxiway Golf and installed a new run-up area along Taxiway Golf.• Massport Fire-Rescue began operations

Key Projects Since 2012 (continued)

Year

Project(s)

2016

- Runway 23 safety area and a portion of Taxiway Juliet were rehabilitated. The West ramp aircraft tie-down areas were adjusted to protect Taxiway Juliet and Sierra safety areas.
- Massport rehabilitated the pavement on Hanscom Drive.
- A vehicle bay for the Airport Rescue and Fire Fighting (ARFF) vehicle was constructed as an addition to the Field Maintenance Garage in 2016.

2017

- Jet Aviation completed FBO facilities, ramp, and Hangar 17 replacement construction. This project reduced the number of parking spaces available at the Civil Air Terminal.
- The first floor of the Civil Air Terminal flooded and rehabilitated. Engineering studies have been completed to improve drainage.
- In August, Runway 11/29 was re-paved, repainted, and excess shoulder pavement was removed. The runway was last paved in 1994.
- Boston MedFlight began construction activities to re-develop Hangar 12A. Completion of the new Leadership in Energy and Environmental Design (LEED) facility occurred in late 2018.
- T-hangar rows A-C reached the end of their useful lives and will be replaced.

Hanscom Field Facilities

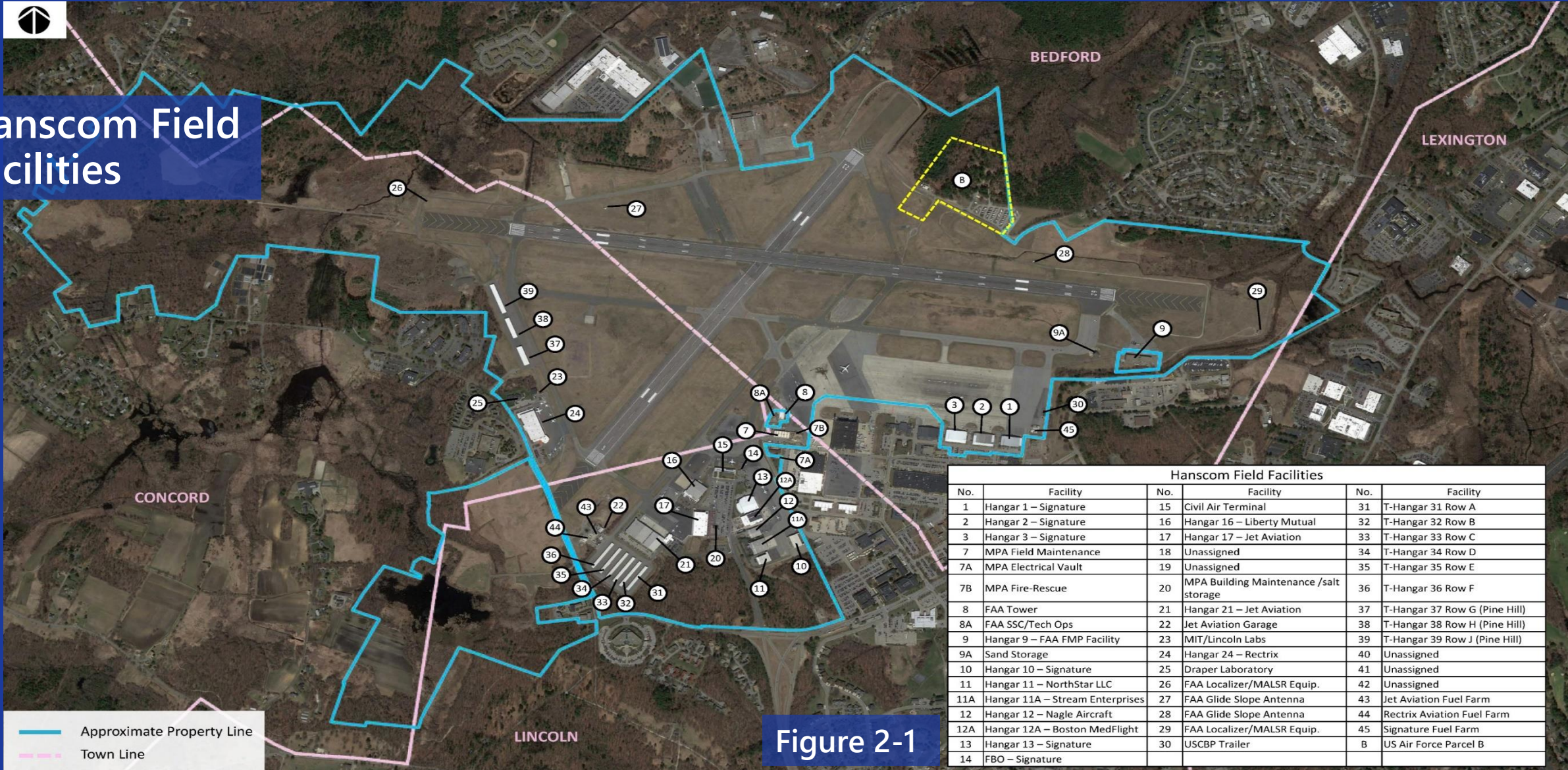


Figure 2-1



Airport Activity Levels ESPR Chapter 3



Airport Activity Levels

Chapter 3:

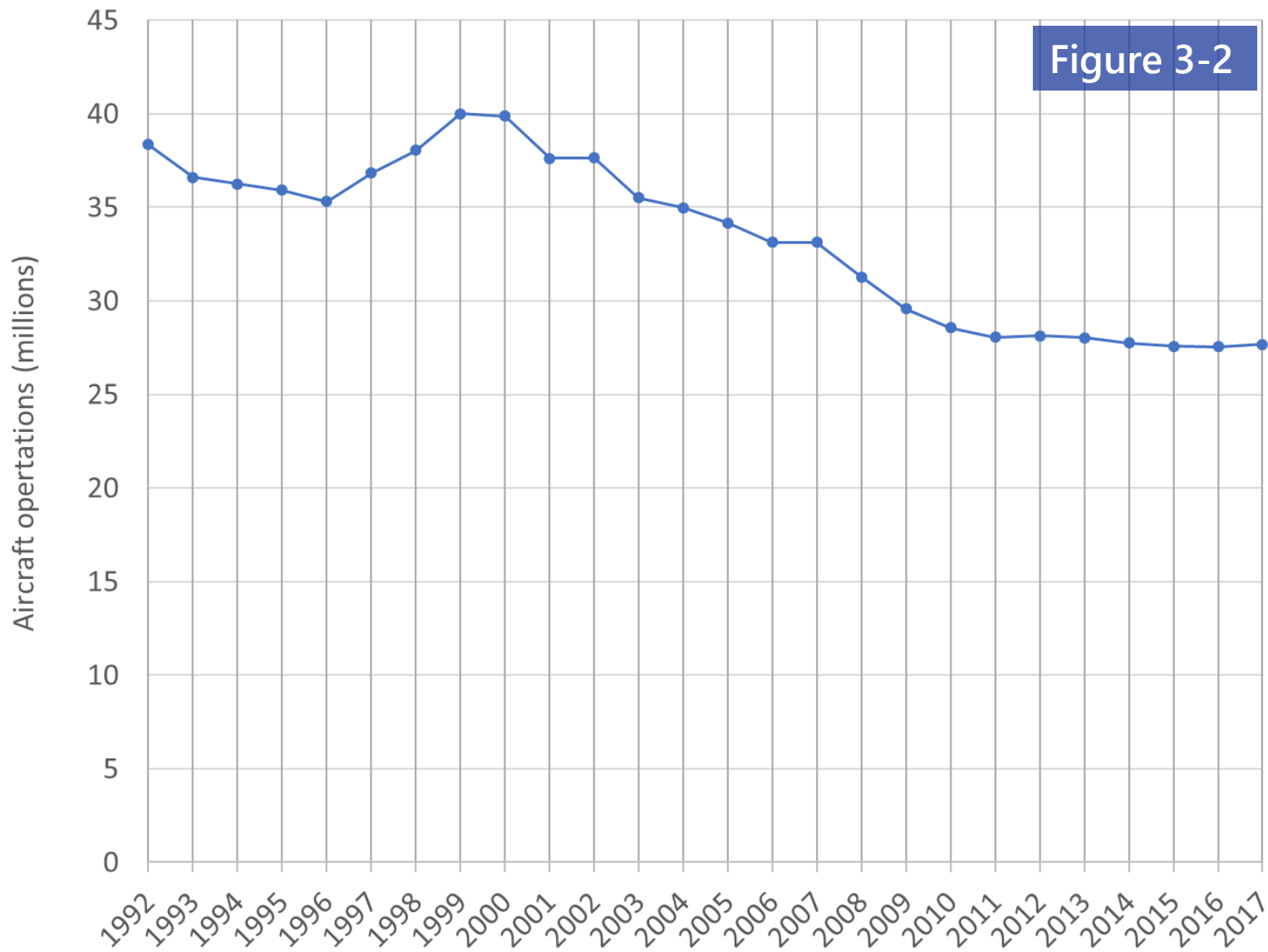
- Presents an overview of national General Aviation (GA) trends
- Quantifies the aircraft operations at Hanscom Field in 2017 in comparison to previous years, and in the context of operations at other regional airports
- Compares the 2017 data to prior forecasts from the *2012 ESPR*
- Presents 2025 and 2035 aircraft operation and air passenger forecasts for the future planning scenarios
- Discusses nighttime aircraft operations



Key Findings

- General aviation operations (landings and takeoffs) at Hanscom and the nation are down and are still recovering from the global recession of 2008.
- Looking to the future, general aviation operations for the nation and Hanscom Field are forecast to grow having stabilized in recent years.
- The primary source of this growth at Hanscom is expected to be business aviation, which typically involves operations by turboprop and jet aircraft.
- It is possible that Hanscom Field could also experience a return of scheduled commercial airline service, and moderate growth has been forecast in the future.





Nationwide, general aviation operations have declined since 2001, but stabilized in recent years

- General aviation comprises all activity outside of commercial airline and military aviation activity
- Notably, operations nationwide have stabilized in recent years



Similarly, since 1985, aircraft operations have declined at Hanscom

- In 1985, the airport accommodated nearly 250,000 annual aircraft operations
- In 2017, the airport accommodated approximately 130,000 annual aircraft operations
- Average annual decline since 1985 = 2.0%

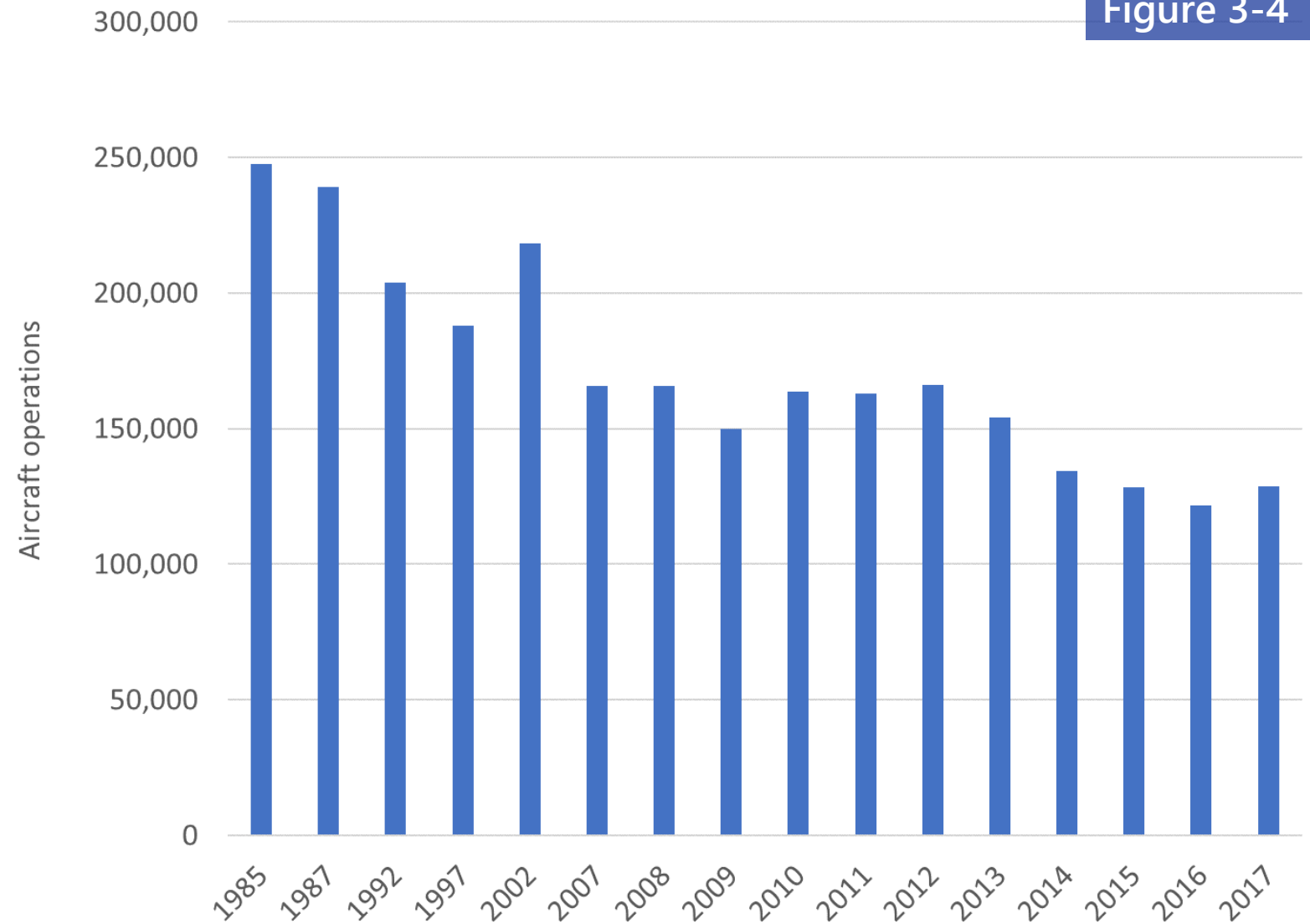
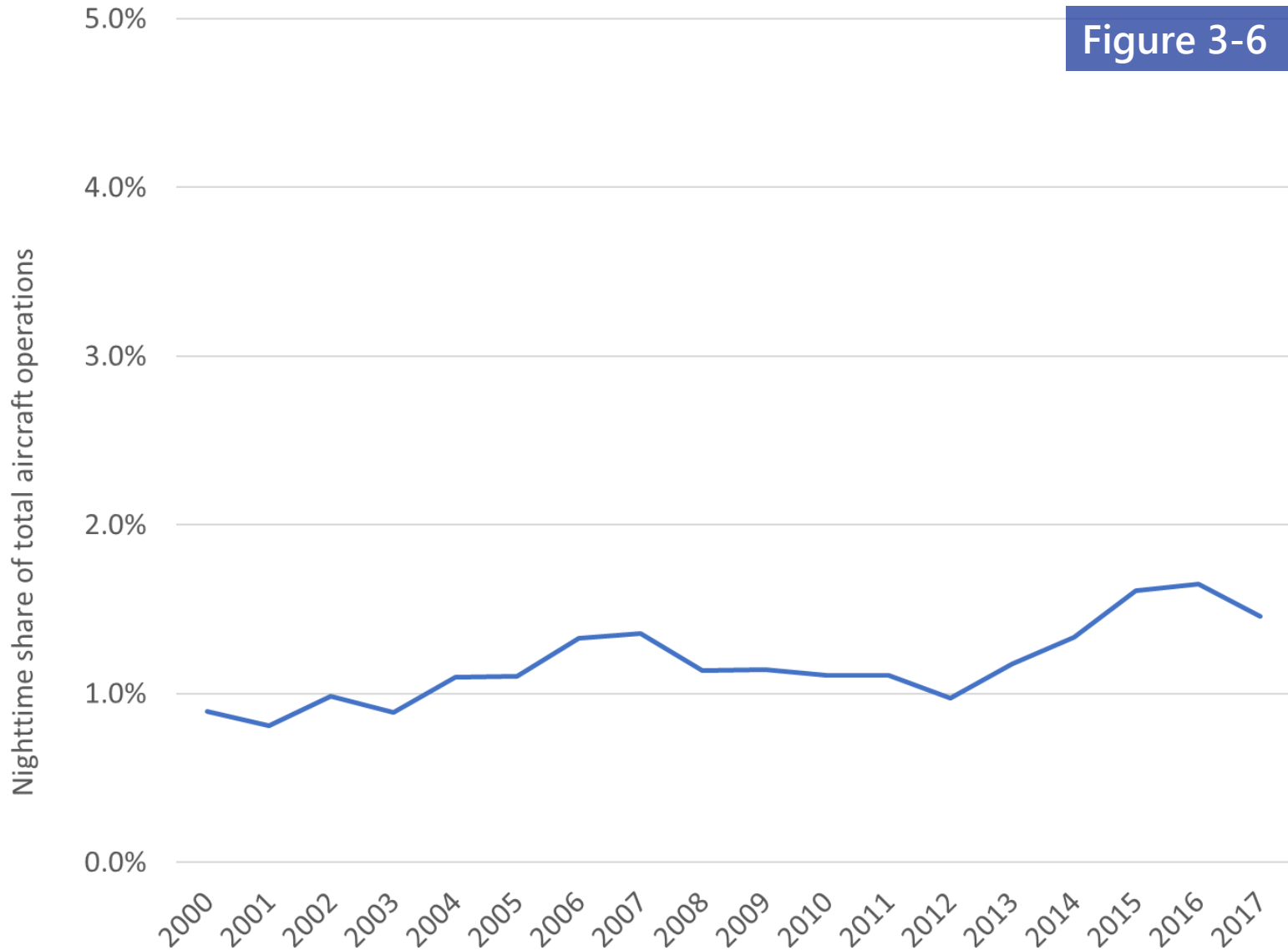


Figure 3-6

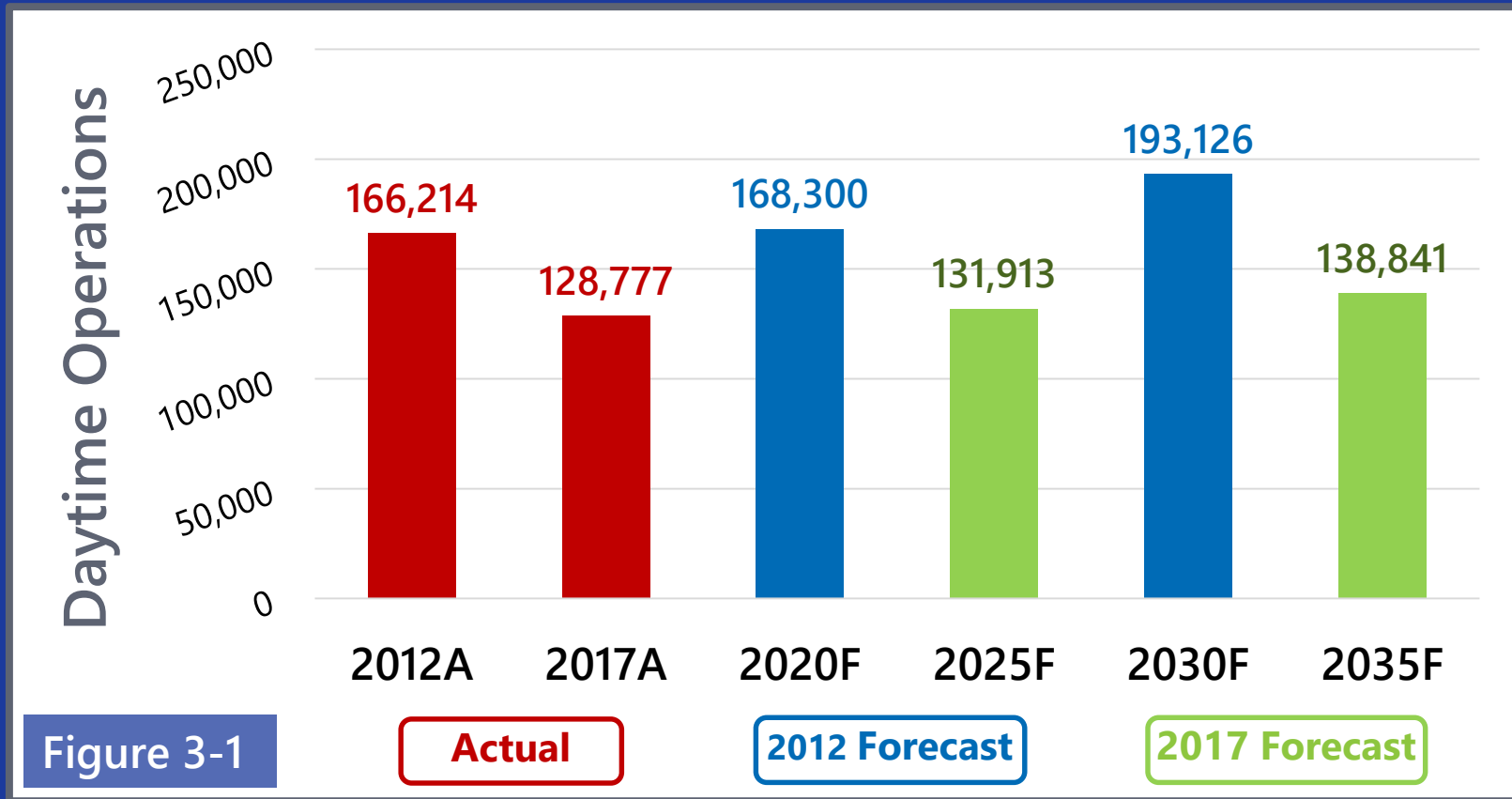


The share of nighttime operations has remained between 1% and 2% since early 2000s

- Nighttime operations are accounted for the purposes of assessing noise impacts
- Total nighttime operations:
 - 2017 = 1,902
 - 2012 = 1,631
 - 2005 = 1,894
 - 2000 = 1,918



Current forecast of aircraft operations reflects the lower levels of activity



- 2017 ESPR forecasts a total of 138,841 operations in 2035
- This forecast is an increase over 2017 activity of approximately 7.8%
- Notably, the current forecast is much lower than the 2012 ESPR reflecting the decline in operations

2017 forecast predicts a stabilization in training and personal flying, while business aviation activity grows

Activity	Actual	2017 ESPR Forecast	
		2017	2025
Training (SEP)	46,014	41,795	40,723
Personal Flying (SEP)	33,040	29,208	28,252
Business MEP	3,015	2,907	2,879
Business Turbo	7,831	10,189	12,205
Business Jet	29,862	36,515	41,907
Helicopter	8,256	9,522	10,332
Military	759	759	759
Scheduled Commercial Airline	0	1,019	1,783
Total	128,777	131,913	138,841



Scheduled commercial activity is forecast with weekday service to one destination in 2025

	Historical activity		2017 ESPR Forecast	
	2005	2012	2025	2035
Aircraft operations	3,627	635	1,019	2,038
Passengers	17,457	8,609	21,403	44,335
Passengers per operation	4.8	13.6	21.0	21.8

- The Hanscom Field forecast specifically assumes weekday service operated with a 30-seat turboprop aircraft serving one or two destinations in the Northeast.
- Hanscom Field has been without scheduled commercial airline passenger services since Streamline Air discontinued its operations at the airport in September 2012.
- Regulations prohibit commercial aircraft operations with greater than 60 seats.
- Scheduled commercial service not currently planned but opportunity may arise.



Airport Planning ESPR Chapter 4



L.G. Hanscom Field 2017 ESPR

Airport Planning

Chapter 4:

- Describes the status of planning initiatives and projects for the five planning areas (North Airfield, Northeast Airfield, East Ramp, West Ramp, Pine Hill)
- Evaluates the potential effects of the 2025 and 2035 scenarios on the airport infrastructure
- Presents the relationship between the *2017 ESPR* and FAA regulations and guidance related to airport planning
- Describes projects in the five-year capital improvement program and identifies which projects may require individual MEPA or NEPA review



Planning Methodology

- The 1978 Hanscom Field Master Plan and Massport's 1980 regulations provide the planning framework presented in the ESPR.
- Massport has employed a scenario-based approach to planning. Projects presented are based on aviation demand forecasts that are subject to change and implemented as demand warrants.
- The planned development makes use of previously developed sites first, before developing any green space on the airport.
- No airfield capacity projects, such as runway extensions, are planned, and neither is land acquisition required to construct facilities adequate to meet future demand.
- Planning was conducted consistent with FAA methodology for airport master planning.



Key Changes to Planning Areas Since 2012

- North Airfield plans are consistent with the 2012 ESPR which called for new general aviation facilities; the 2018 Environmental Assessment (EA) and subsequent Finding of No Significant Impact does enable a phased development of the site for a total of 165,000 square feet of hangars and 100,000 square feet of associated aircraft apron
- Pine Hill plans documented within the EA include replacement of the T-hangars primarily suitable for small recreational aircraft, with corporate aviation hangars totaling 60,000 square feet of space with as much as 160,000 square feet of aircraft apron.
- West Ramp – this area was previously referred to as the “Terminal Area” in the 2012 ESPR in which the 2012 ESPR contemplated a hotel and museum within this area. These plans are still addressed as a possibility in the ESPR, but there are not active plans for such development.
- East Ramp – the US CBP facility and a new ARFF facility are scheduled to open this summer.



Massport follows FAA guidance when planning for future development

FAA Advisory
Circular 150/5070-
6b, Airport Master
Plans

FAA Advisory
Circular 150/5300-
13, Airport Design

FAA Advisory
Circular 150/5325-
4B, Runway Length
Requirements for
Airport Design

FAA Terminal Area
Forecast, published
February 2019

- Massport is required to submit the “Airport Layout Plan or “ALP” for approval to the FAA
- The ALP provides information that enables airport operators to seek federal funding for improvements, provide information for environmental review, and informs decisions by the FAA and airport operators regarding future development



Summary of Planning Areas

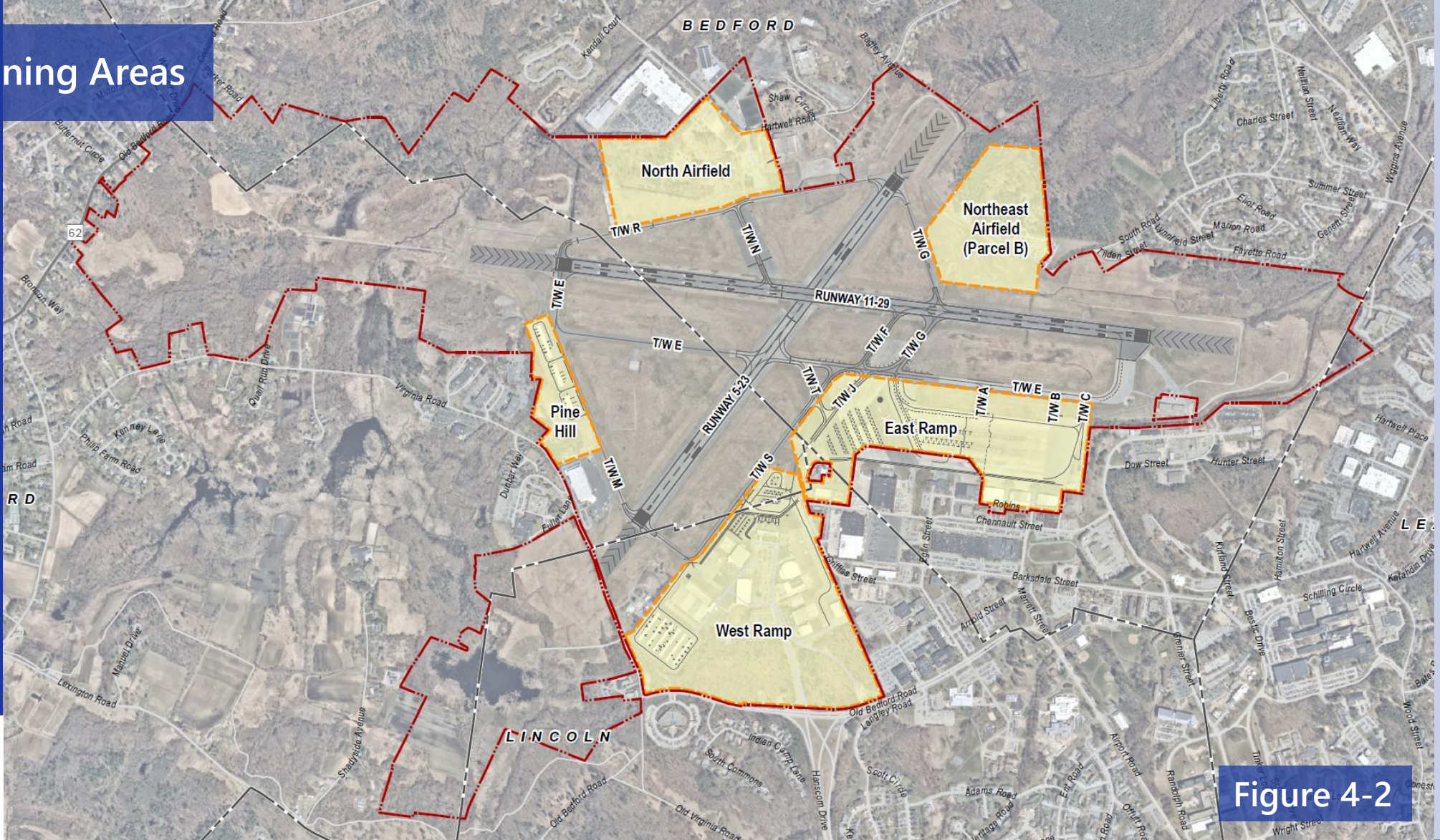


Figure 4-2



North Airfield Planning Concepts

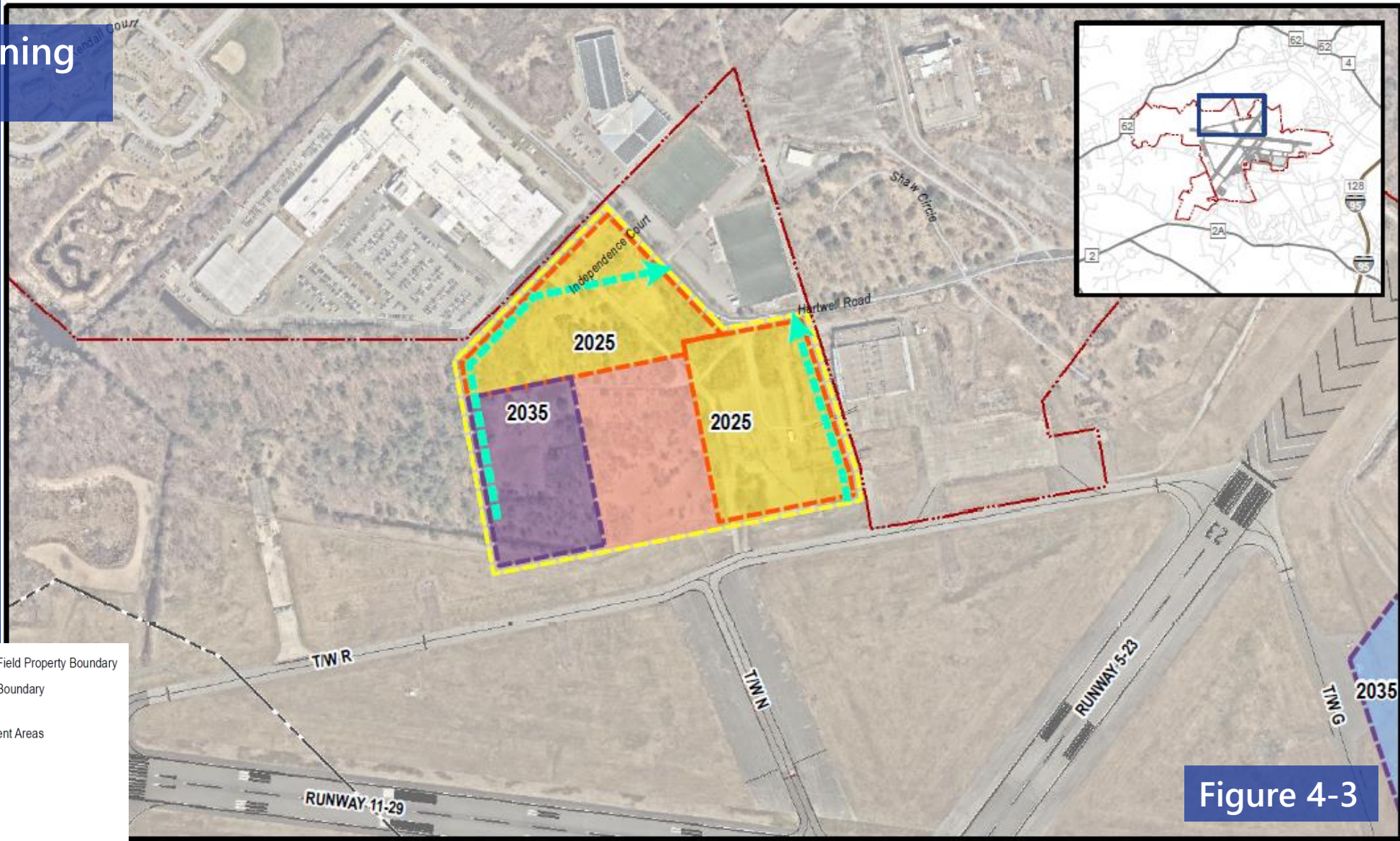
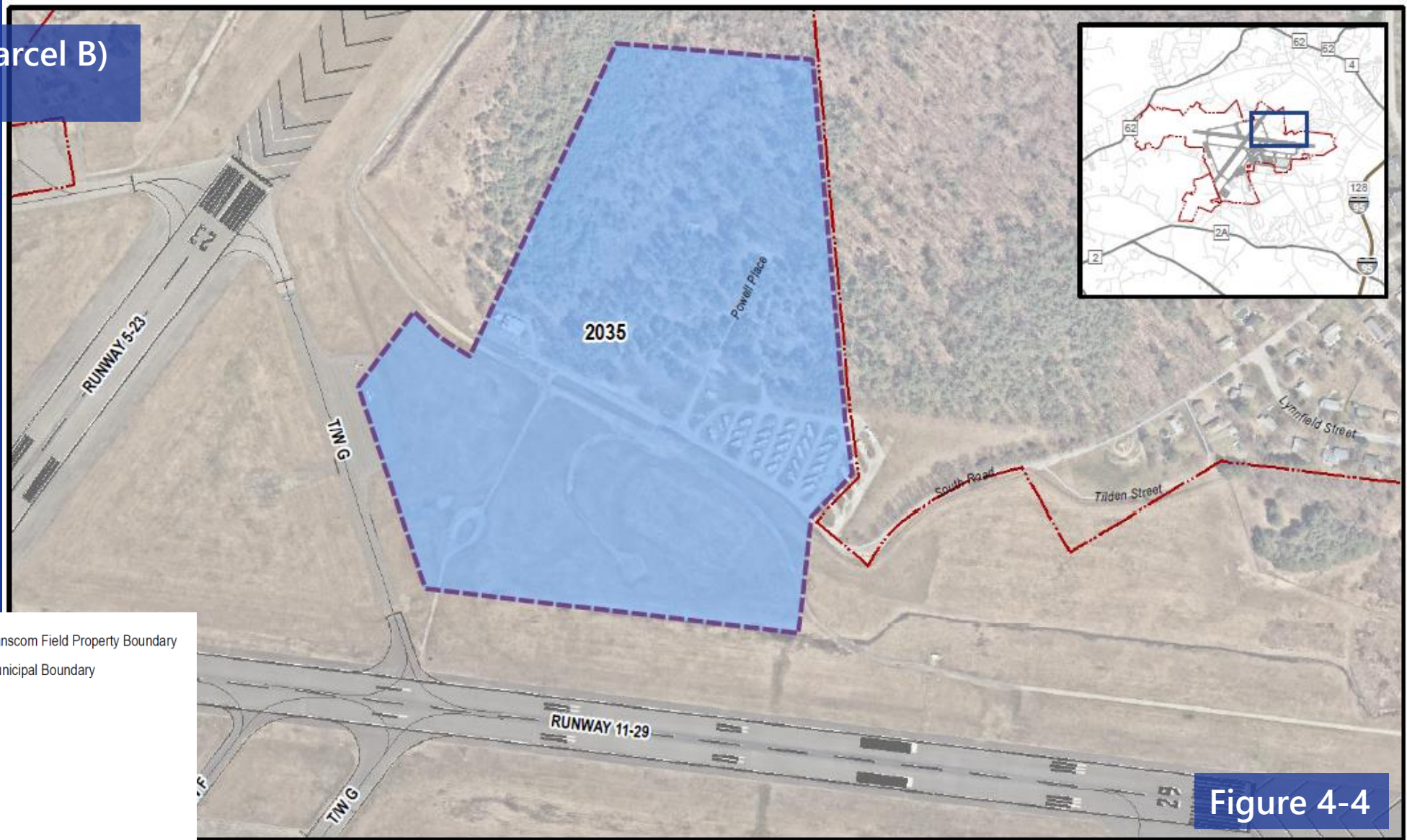


Figure 4-3

-  2025 Planning Scenario
-  2035 Planning Scenario
-  Apron Development
-  Hangar Parcel Development
-  Aviation Compatible Development Parcel
-  Proposed Roadway
-  Hanscom Field Property Boundary
-  Municipal Boundary
-  Development Areas



Northeast Airfield (Parcel B) Planning Concepts



-  2025 Planning Scenario
-  2035 Planning Scenario
-  Apron Development
-  Hangar Parcel Development
-  Aviation Compatible Development Parcel
-  Proposed Roadway
-  Hanscom Field Property Boundary
-  Municipal Boundary

Figure 4-4



West Ramp Planning Concepts

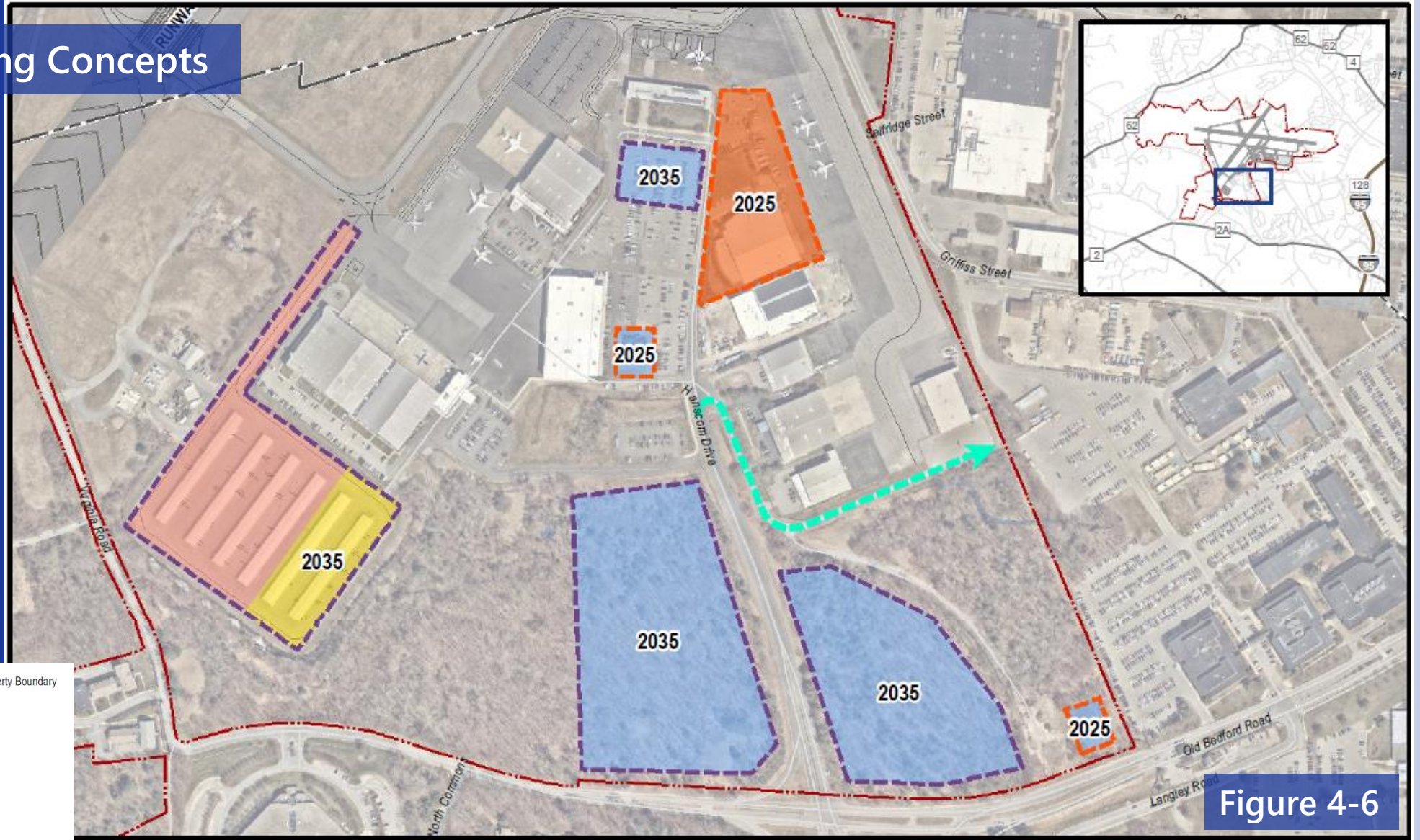
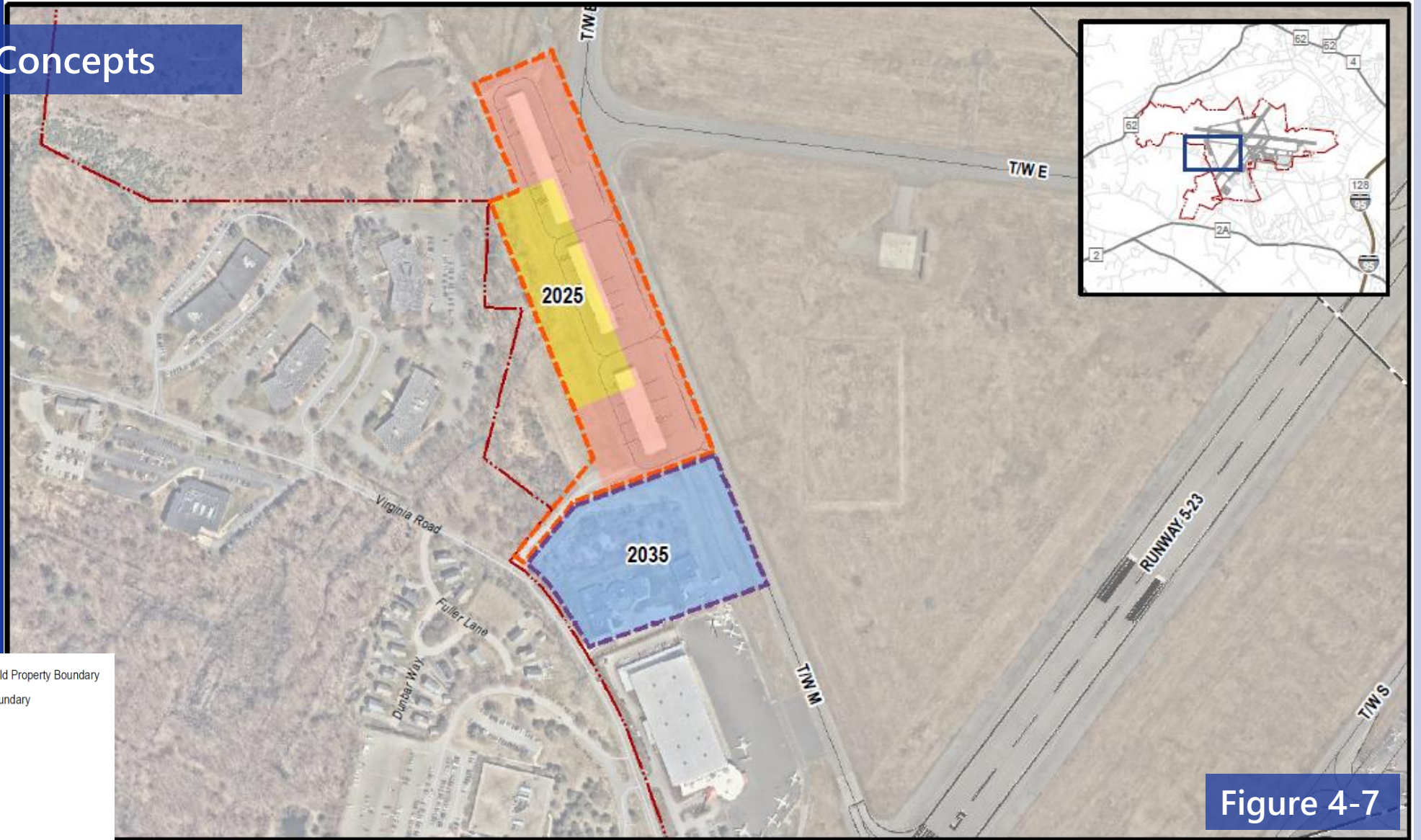


Figure 4-6

-  2025 Planning Scenario
-  2035 Planning Scenario
-  Apron Development
-  Hangar Parcel Development
-  Aviation Compatible Development Parcel
-  Proposed Roadway
-  Hanscom Field Property Boundary
-  Municipal Boundary



Pine Hill Planning Concepts



-  2025 Planning Scenario
-  2035 Planning Scenario
-  Apron Development
-  Hangar Parcel Development
-  Aviation Compatible Development Parcel
-  Proposed Roadway
-  Hanscom Field Property Boundary
-  Municipal Boundary

Figure 4-7



Regional Transportation Context

ESPR Chapter 5



Regional Transportation Context

Chapter 5:

- Describes the role of Hanscom Field and other airports in the region in the overall regional transportation system
- Provides an overview of the planned improvements at the region's airports
- Provides an overview of New England's major transportation initiatives underway or recently completed, including airport, commuter rail, and bus services
- Summarizes the economic impact of the region's airports



Key Changes to the Regional Aviation System Since 2012

- Operations at GA reliever and commercial service airports in the Boston Metropolitan Area fell by 2.9% per year between 2012 - 2017. This decline is primarily due to higher fuel prices, declining number of student pilots and high cost of aircraft ownership.
- Scheduled commercial passenger traffic at New England airports continued to grow during this period. From 2012 – 2017 the combined passenger traffic at New England airports increased by 4.3% on average annually.
- Boston Logan continues to exceed historical passenger activity levels on an annual basis. In 2018 the airport handled 40.9 million passengers (70% of all scheduled commercial airline passengers in the region).



Key Changes (continued)

- Since its peak in 2005, the market share of scheduled commercial air passenger traffic decreased at the other airports in the region. The decrease can be attributed to consolidation of airlines at hubs such as Logan.
- Since 2012, commercial aircraft operations at Logan Airport and New England generally grew 2.6% and 1.1% annually, respectively. Despite the retirement of many small regional jet and turboprop aircraft, airlines continued to add new service and increased the frequency of service to various markets.
- Regional airports have continued to attract new scheduled airline service.



Passenger Activity at Logan, Hanscom, and other New England Airports

- Logan traffic grew by 5.5 percent per year from 2012 to 2017
- Scheduled passenger traffic at Hanscom ceased in 2012
- Massport continues to invest in Worcester to encourage air service to relieve Logan

Airport	Airport Code	Passengers (millions) ¹		Compound Annual Growth	2012 Passenger Share	2017 Passenger Share
		2012	2017	2012-2017		
Logan Airport, MA	BOS	29.33	38.41	5.5%	66.3%	70.5%
Bradley International, CT	BDL	5.32	6.44	3.9%	12.2%	11.8%
T.F. Green International, RI	PVD	3.62	3.94	1.7%	8.2%	7.2%
Manchester-Boston, NH	MHT	2.45	1.97	-4.3%	5.5%	3.6%
Portland International, ME	PWM	1.67	1.86	2.2%	3.7%	3.4%
Burlington International, VT	BTV	1.23	1.16	-1.3%	2.8%	2.1%
Bangor International, ME	BGR	0.46	0.49	1.4%	1.0%	0.9%
Worcester Regional, MA	ORH	0.03	0.11	32.0%	0.1%	0.2%
Portsmouth International, NH	PSM	<0.01	0.10	99.6%	0.1%	0.2%
Tweed-New Haven Regional, CT	HVN	0.08	0.06	-5.2%	0.2%	0.1%
Hanscom Field, MA	BED	0.01	-	-100.0%	0.0%	0.0%
Subtotal Regional Airports		14.88	16.12	1.6%	33.7%	29.5%
TOTAL		44.19	54.52	4.3%	100%	100%



Recent Regional Transportation Initiatives

- Boston Region Metropolitan Planning Organization is expect to release an update to the *Long-Range Transportation Plan (LTRP), Charting Progress to 2040* in 2019.
- MassDOT *State Rail Plan*, published in 2018, which provides a 20-year plan for the state's rail system.
- Massachusetts Bay Transportation Authority (MBTA) *Focus 40*, which is a future investment plan to meet public transportation needs of the region in 2040.



Massachusetts Statewide Airport Economic Impact Study

- Public use airports generate \$24.7 billion in total economic activity, including \$7.2 billion in total payroll on the basis of over 199,000 jobs.
- Hanscom Field supports 2,243 jobs and generates \$680 million in economic activity, but combined with Hanscom Air Force Base, the two entities generate approximately \$6.7 billion supporting over 19,500 jobs

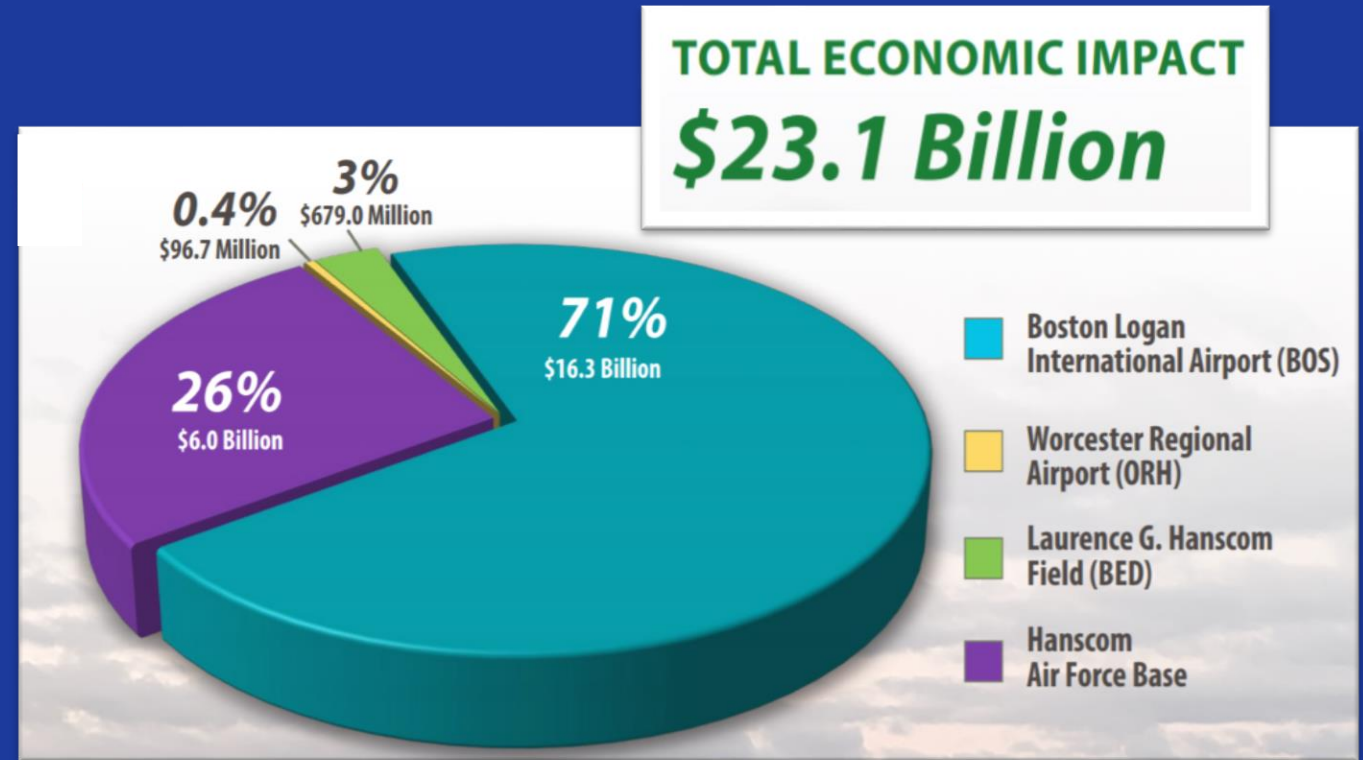



Figure Source: Massachusetts Statewide Airport Economic Impact Study, updated January 2019.



Ground Transportation ESPR Chapter 6



L.G. Hanscom Field 2017 ESPR

Ground Transportation

Chapter 6 includes discussion of:

- Current conditions
- Traffic conditions under the 2025 and 2035 forecast scenarios
- Other transportation-related projects/activities undertaken by the Metropolitan Planning Organization and other agencies
- Transportation demand management (TDM) activities
- Commuting patterns by Hanscom Field employees
- Alternative modes of transportation



Key Findings Since the 2012 ESPR

- Traffic to/from Hanscom Field continues to occur outside the morning and evening peak commuting hours;
- Hanscom Field-related traffic has declined on Route 2A, east of Hanscom Drive since 2012 and only accounts for 2% of all traffic on Route 2A today;
- Average daily traffic volumes on Hanscom Drive has decreased from 2,200 vehicles per day (vpd) in 2012 to 1,700 vpd in 2018, extending a long-term trend since 2002;
- Future development near Pine Hill and the North Airfield in the 2025 and 2035 scenarios will add minimal traffic to these areas.

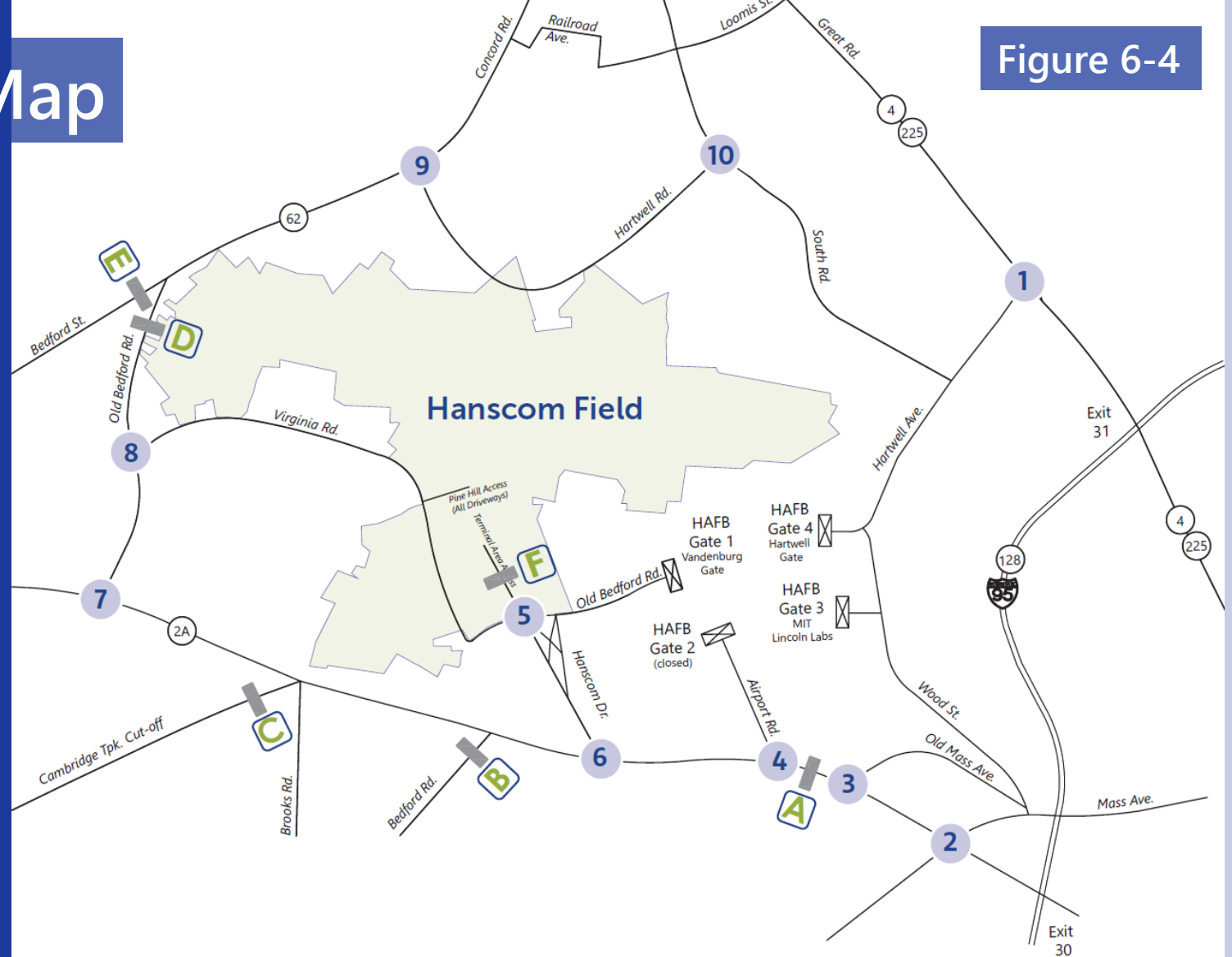


Traffic Count Location Map

Figure 6-4

Study Intersections:

1. Route 4/225 & Hartwell Avenue (signalized), Lexington
2. Massachusetts Avenue & Route 2A (signalized), Lexington
3. Old Massachusetts Avenue & Route 2A, Lexington
4. Airport Road & Route 2A, Lexington
5. Hanscom Drive & Old Bedford Road (main Hanscom Field entrance), Lexington
6. Hanscom Drive & Route 2A, Lincoln
7. Old Bedford Road & Lexington Road (Route 2A), Concord
8. Old Bedford Road & Virginia Road, Concord
9. Hartwell Road & Route 62, Bedford
10. South Road & Hartwell Road, Bedford



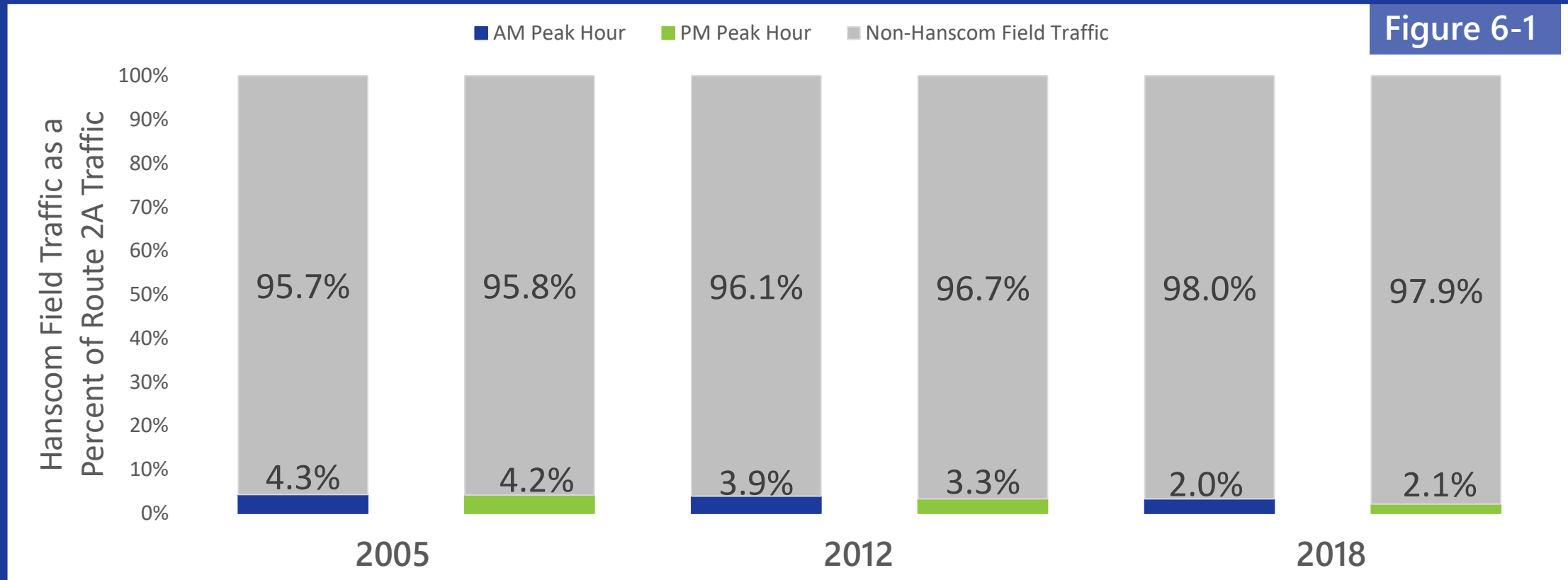
Hanscom Field Peak Hour Trip Generation

Traffic Count Data	Morning Peak Hour			Afternoon Peak Hour		
	In	Out	Total	In	Out	Total
1996	61	33	94	43	70	113
2002	109	52	161	47	112	159
2005	115	42	157	75	79	154
2012	136	29	165	37	84	121
2018	74	36	110	32	75	107
2012 ESPR Scenarios						
2020 Forecast	178	42	220	46	120	166
2030 Forecast	291	99	390	122	223	345

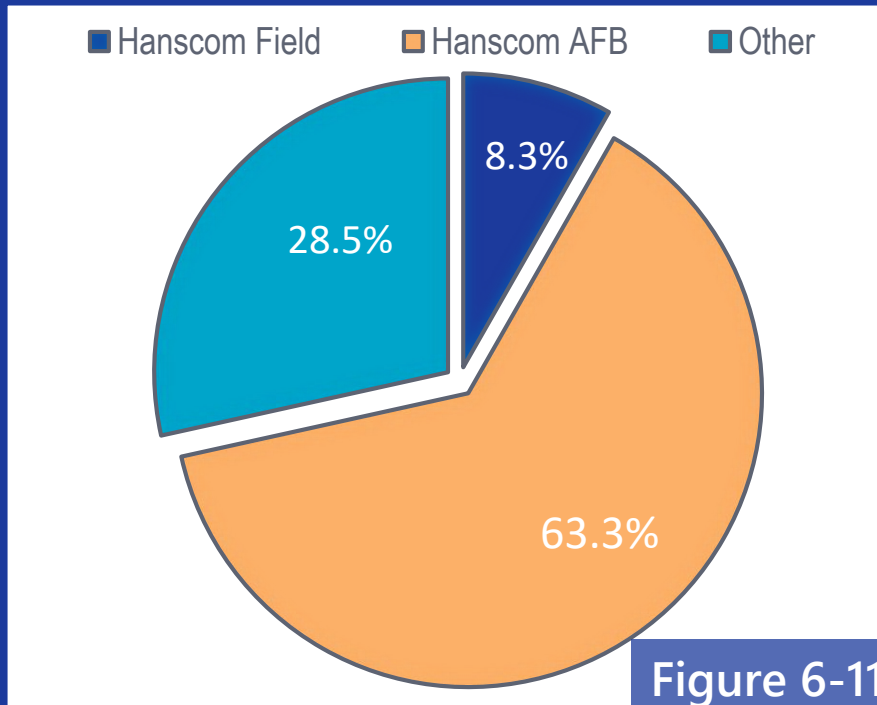
Source: 2005 and 2012 Hanscom Field ESPR



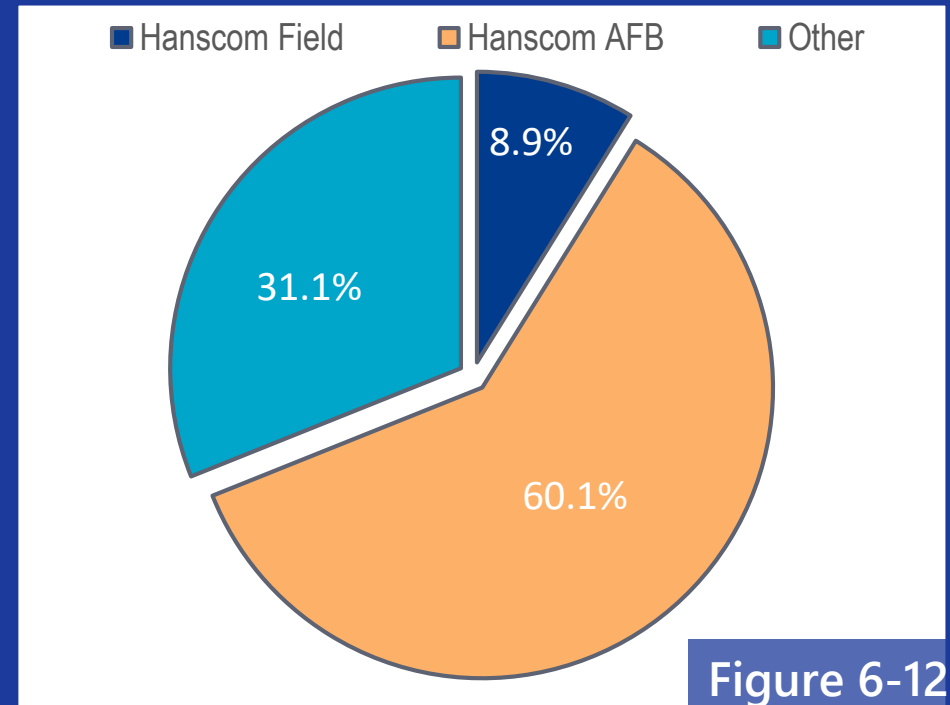
Hanscom Field traffic is only 2.1% of Route 2A traffic east of Hanscom Drive



Hanscom Drive Traffic Volumes



Morning Peak Hour



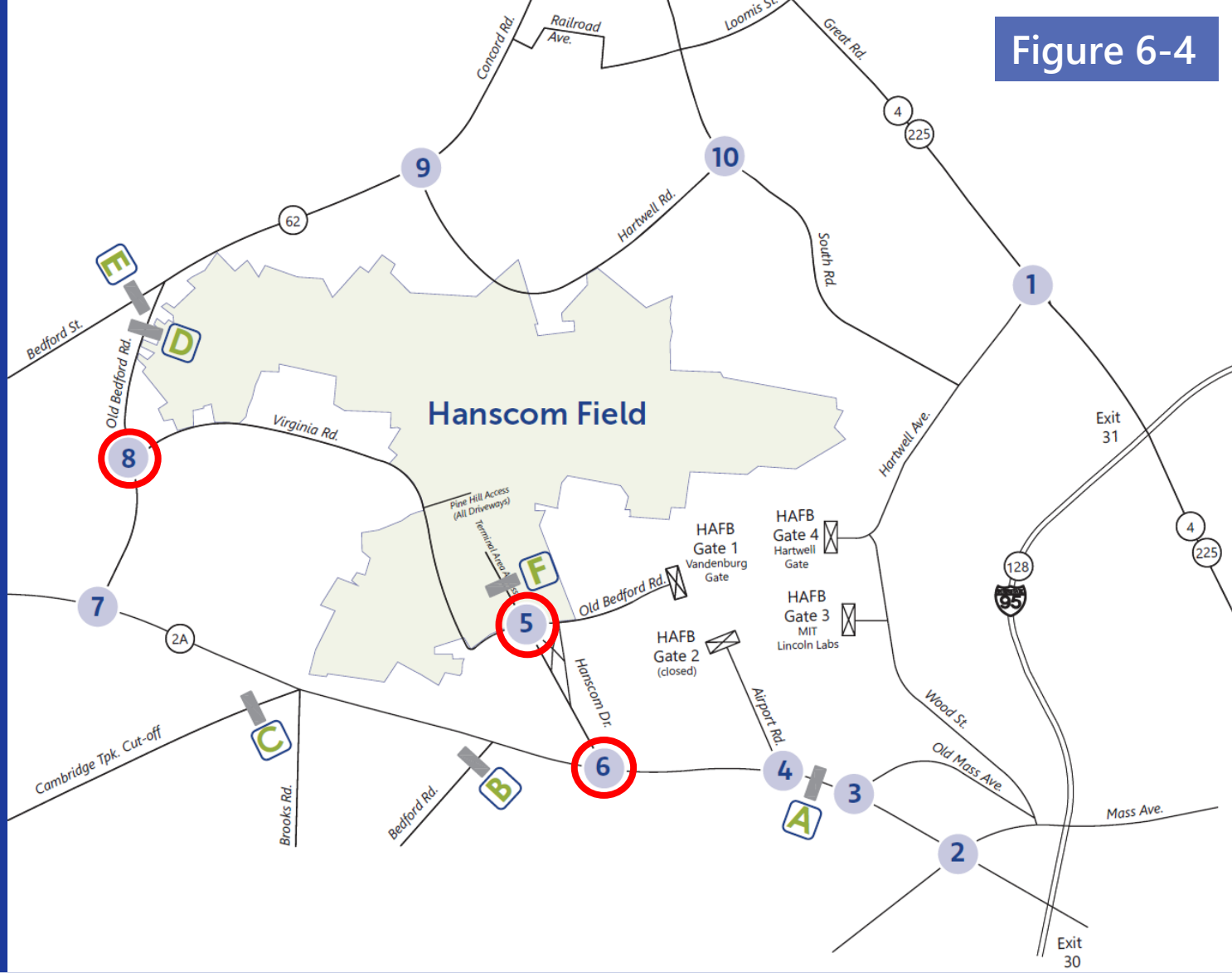
Afternoon Peak Hour

Figure 6-4

Only 3 intersections exceed the 10% MEPA threshold

- #5. Hanscom Drive & Old Bedford Road (main Hanscom Field entrance), Lexington
- #6. Hanscom Drive & Route 2A, Lincoln
- #8. Old Bedford Road & Virginia Road, Concord

These three intersections are forecasted to exceed the 10% threshold in 2025 and 2035 as well



Intersections Exceeding MEPA 10% Threshold – Forecast Scenarios

Intersection	Peak Hour	Analysis Years		
		2018 Existing	2025 Forecast	2035 Forecast
#5 Hanscom Drive/Old Bedford Road (Lincoln)	Morning	X	X	X
	Afternoon	X	X	X
#6 Hanscom Drive/Route 2A (Lincoln)	Morning	X	X	X
	Afternoon	X	X	X
#8 Old Bedford Road/Virginia Road (Concord)	Morning	X	X	X
	Afternoon	X	X	X

Note: "X" denotes intersection with turning movement exceeding 10 percent MEPA threshold

Source: FHI, 2018



Forecasted Hanscom Field traffic in 2025 & 2035 represent less than 10% of Hanscom Drive volumes

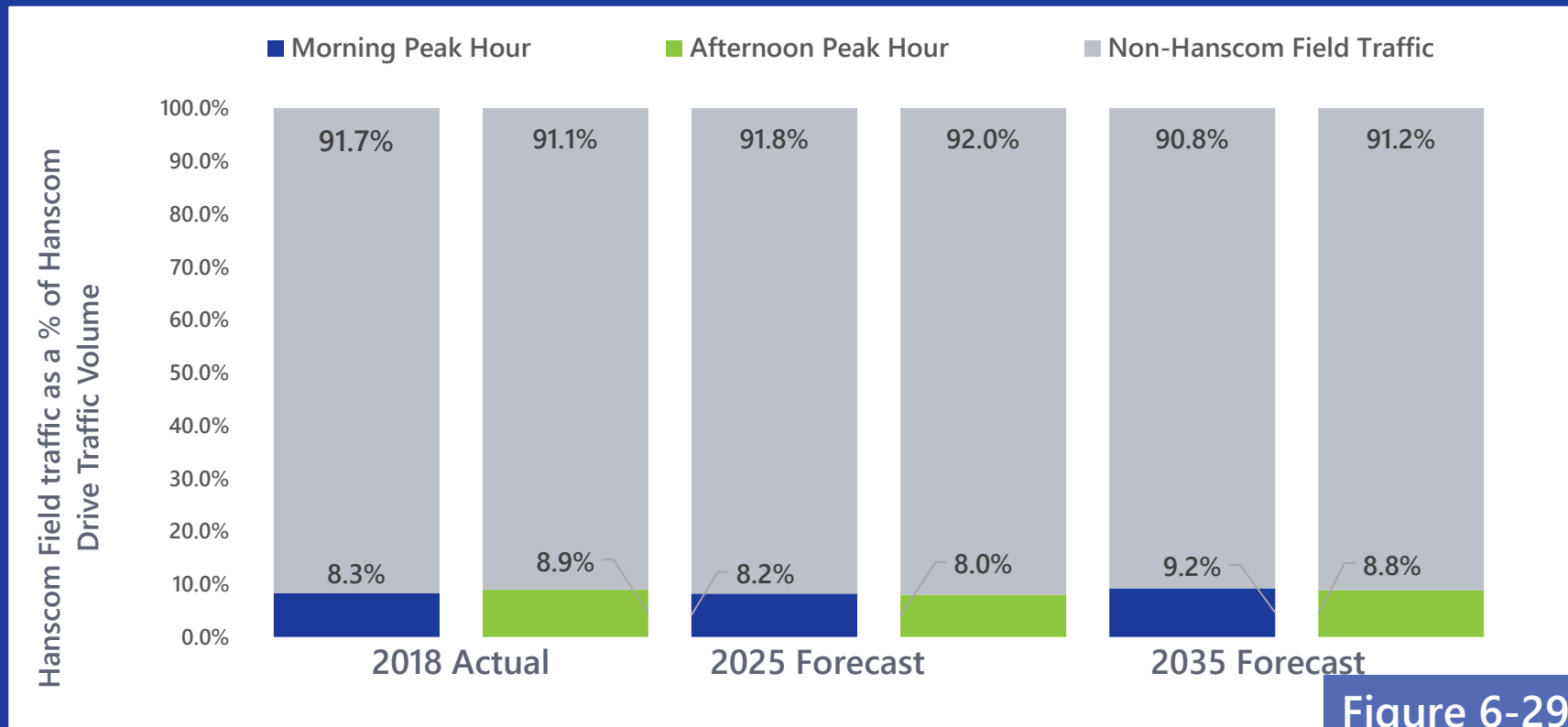


Figure 6-29

Forecasted Hanscom Field traffic in 2025 & 2035 remain approximately 2% of Route 2A volumes

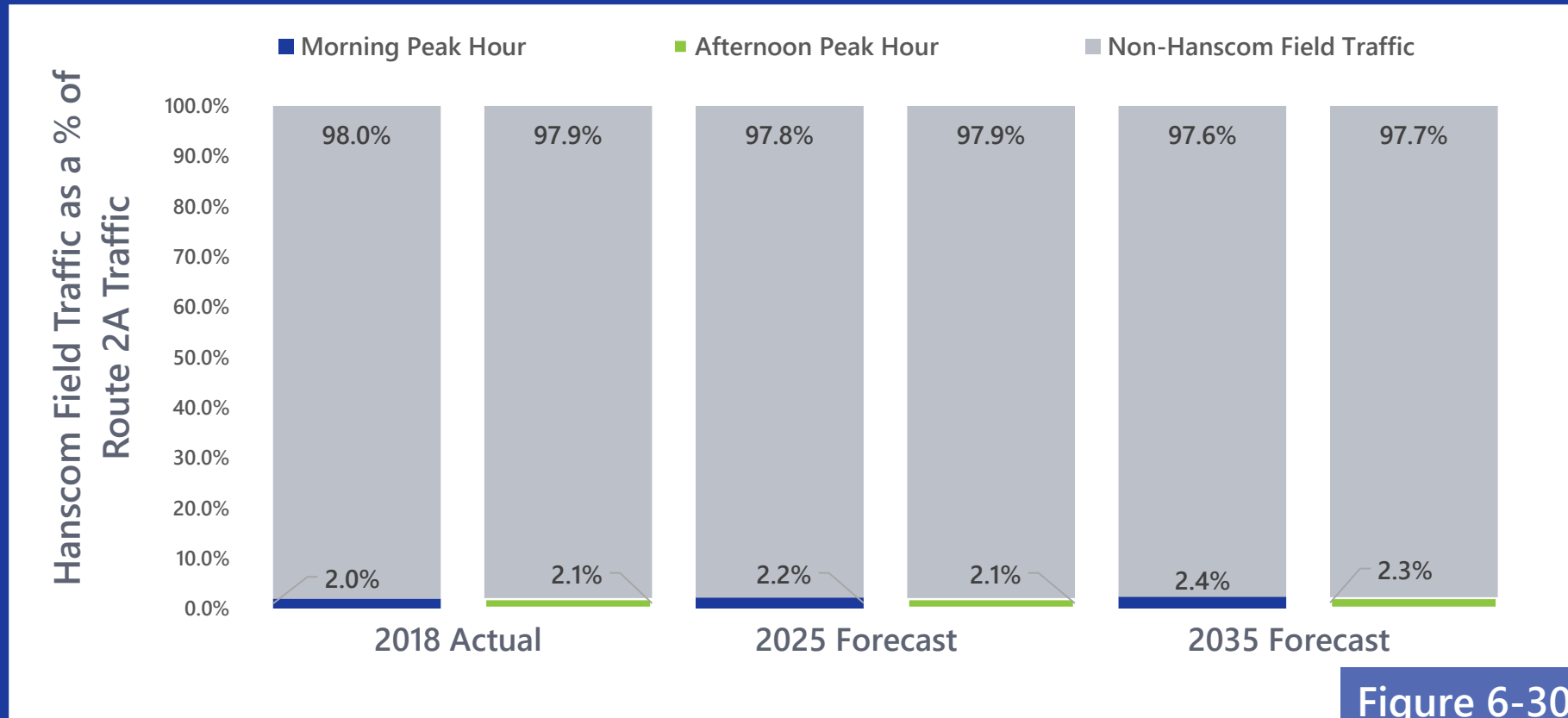


Figure 6-30

How to provide feedback

- Electronic version of the document and technical appendices can be found here:
<http://www.massport.com/massport/about-massport/project-environmental-filings/hanscom-field/>
- Second Technical Workshop will take place on Thursday, June 6, 2019 at 6:00 PM, and the public information meeting will take place on Tuesday, June 11, 2019 at 6:30 PM
- The public comment period is open until July 11, 2019. Submit comments electronically here:
<https://eeaonline.eea.state.ma.us/EEA/PublicComment/Landing/>. Written comments may be submitted to the following address:

Secretary Kathleen Theoharides
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
Alex Strysky, EEA No. 5484/8696
100 Cambridge Street, Suite 900
Boston, MA 02114



Question and Answer Session



L.G. Hanscom Field 2017 ESPR