

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION CATEGORICAL EXCLUSION
DECLARATION**

Description of Federal Action: The Federal Aviation Administration will implement the following changes: Modify Boston Logan International Airport (BOS) Area Navigation (RNAV) Runway 15 Right (RWY 15R) Standard Instrument Departures (SIDs) (BOS (RNAV) RWY 15R SIDs)). The BOS (RNAV) RWY 15R SIDs include the following: BLZZR5, BRUWN6, CELTK6, HYLND6, LBSTA7, PATSS6, REVSS5, SSOXS6, and CGURL RNAV Standard Terminal Arrival Route) STAR. The procedures will be available 7 days a week during both daytime and nighttime hours. The BOS (RNAV) RWY 15R SIDs are currently scheduled for a tentative September 2020 publication date.

The FAA and the Massachusetts Port Authority (Massport) signed a Memorandum of Understanding (MOU) in September of 2016. The MOU describes how Massport and the FAA will work together to seek possible reductions to overflight noise impacts of aircraft operations at BOS that result from the FAA's implementation of NextGen precision-based navigation (PBN) procedures including RNAV.

As a result of the MOU, Massport submitted an initial set of recommendations, known as "Block 1 Recommendations," to the FAA on December 20, 2017. The modification of BOS (RNAV) RWY 15R SIDs are part of the Block 1 recommendations, which moves departure tracks further north away from populated areas. Also, these changes enhance safety and efficiency at BOS and within the entire National Airspace System. The FAA will continue to conduct public outreach in collaboration with Massport.

Basis for this Determination: An environmental review was conducted to ensure that the Federal Action is in compliance with the National Environmental Policy Act (NEPA) and its implementing regulations (see figure attached). This review was conducted in accordance with policies and procedures in Department of Transportation Order 5610.1C, "Procedures for Considering Environmental Impacts" and FAA Order 1050.1F.

Declaration of Exclusion: The FAA has reviewed the above referenced Federal action and it has been determined, by the undersigned, to be categorically excluded from further environmental documentation according to FAA Order 1050.1F, "Environmental Impacts: Policies and Procedures" dated July 16, 2015. The implementation of this action will not result in any extraordinary circumstances in accordance with FAA Order 1050.1F, Paragraph 5-2.

The applicable categorical exclusion is: FAA Order 1050.1F, Paragraph 5-6.5 g.: "Establishment of Global Positioning System (GPS), Flight Management System (FMS), Area Navigation/Required Navigation Performance (RNAV/RNP), or essentially similar systems that use overlay of existing flight tracks. For these types of actions, the Noise Integrated Routing System (NIRS) Noise Screening Tool (NST) or other FAA-approved environmental screening methodology should be applied."

Concurrence by:

Veronda Johnson

Date: February 27, 2020

Veronda Johnson

Environmental Protection Specialist, Operations Support Group

Eastern Service Center (ESC)

Approved by:

Charles J. Gibson

Date: February 27, 2020

For

Ryan W. Almasy

Manager, Eastern Operations Support Group

Federal Aviation Administration

ATTACHMENTS

Block 1 Final Recommendations

Proc. ID D = Dep. A = Arr.	Procedure	Primary Benefits
1-D1	Restrict target climb speed for jet departures from Runways 33L and 27 to 220 knots or minimum safe airspeed in clean configuration, whichever is higher.	Reduced airframe and total noise during climb below 10,000 ft (beyond immediate airport vicinity)
1-D2	Modify RNAV SID from Runway 15R to move tracks further to the north away from populated areas.	Departure flight paths moved north away from Hull
1-D3	Modify RNAV SID from Runway 22L and 22R to initiate turns sooner after takeoff and move tracks further to the north away from populated areas.	Departure flight paths moved north away from Hull and South Boston
1-D3a	<i>Option A:</i> Climb to intercept course (VI-CF) procedure	
1-D3b	<i>Option B:</i> Climb to altitude, then direct (VA-DF) procedure	
1-D3c	<i>Option C:</i> Heading-based procedure	
1-A1	Implement an overwater RNAV approach procedure with RNP overlay to Runway 33L that follows the ground track of the jetBlue RNAV Visual procedure as closely as possible.	Arrival flight paths moved overwater instead of over the Hull peninsula and points further south
1-A1a	<i>Option A:</i> Published instrument approach procedure	
1-A1b	<i>Option B:</i> Public distribution of RNAV Visual procedure	



BOS RWY 15R Departure



Federal Aviation
Administration


Old vs New RWY 15R Departure

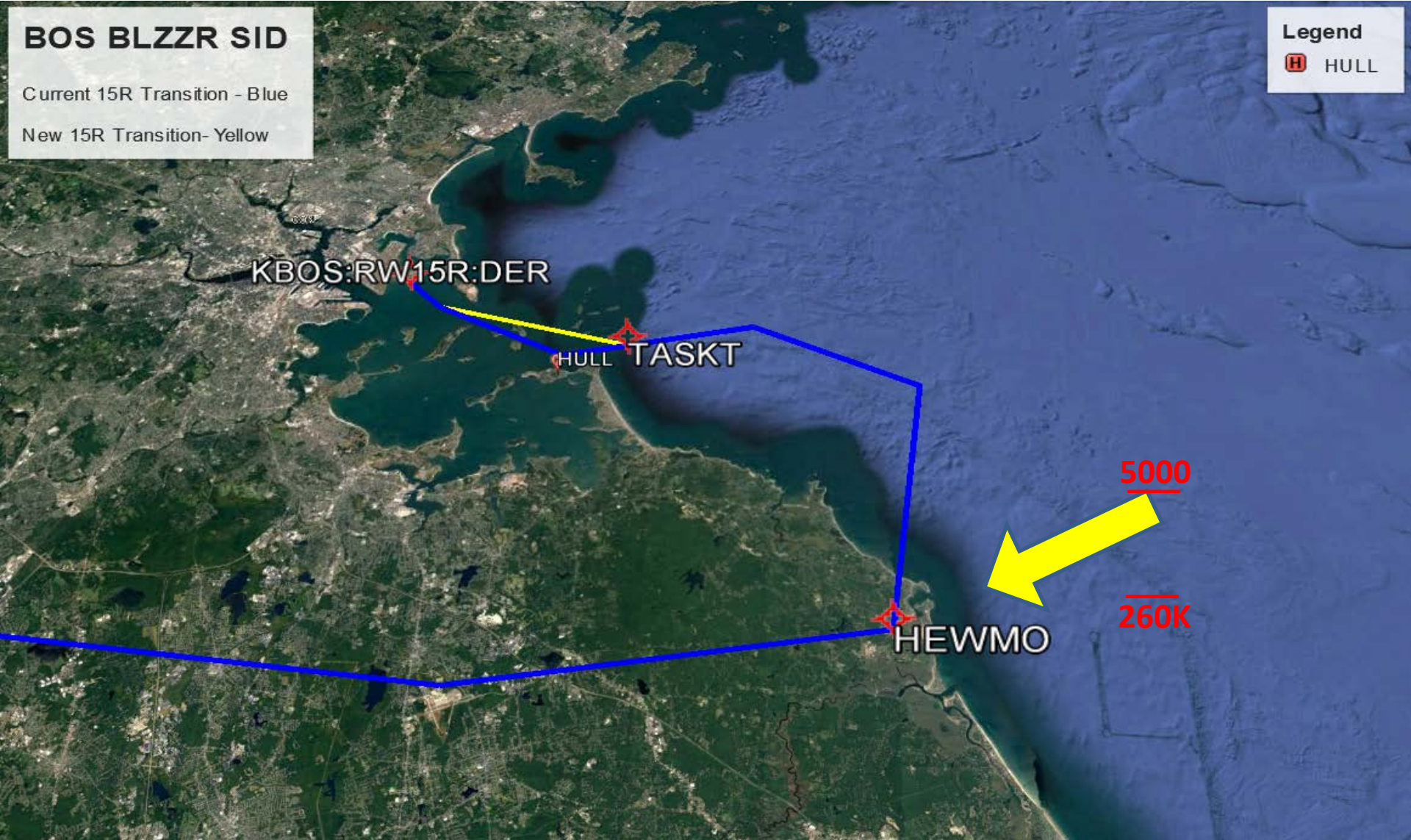
BOS BLZZR SID

Current 15R Transition - Blue

New 15R Transition- Yellow

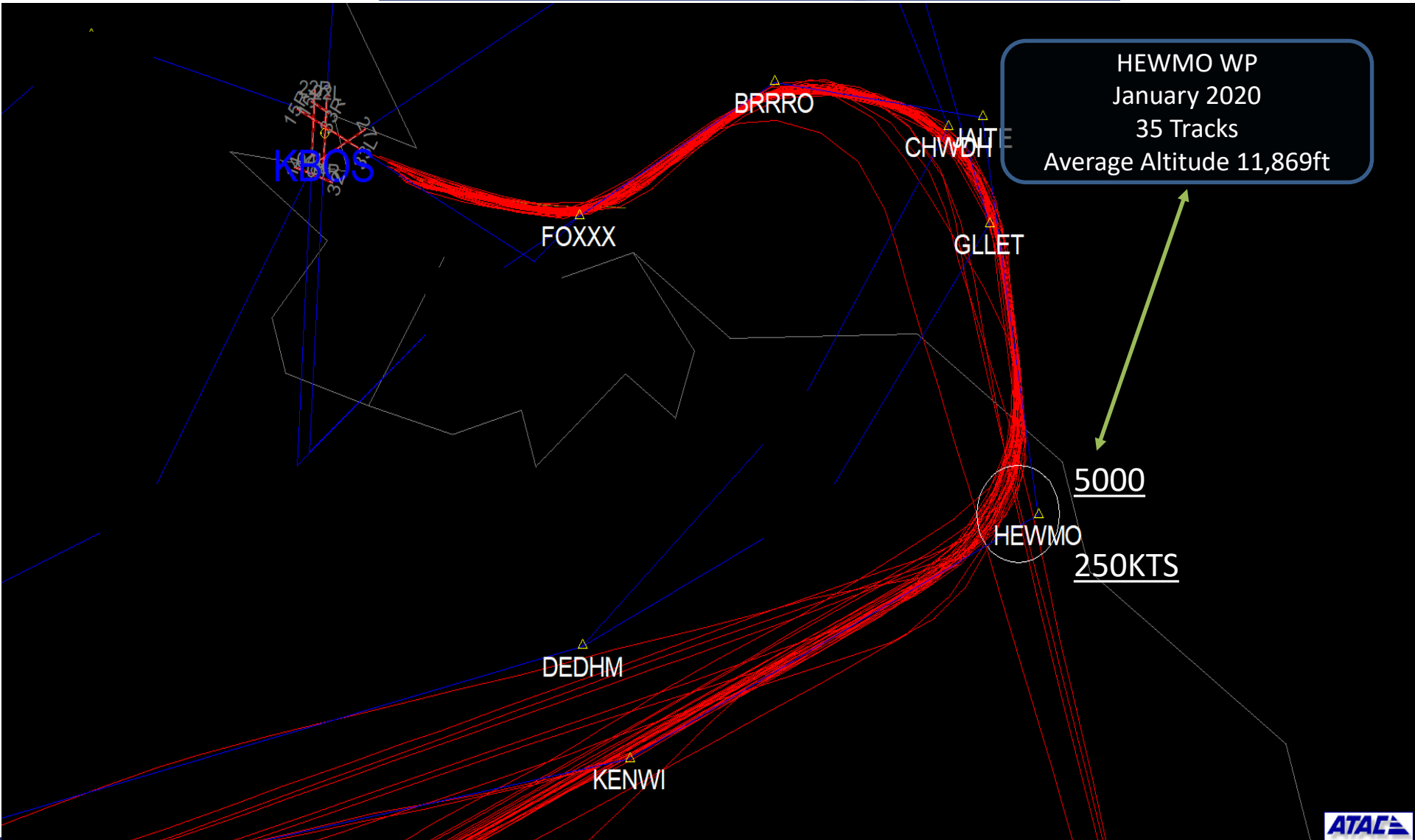
Legend

 HULL



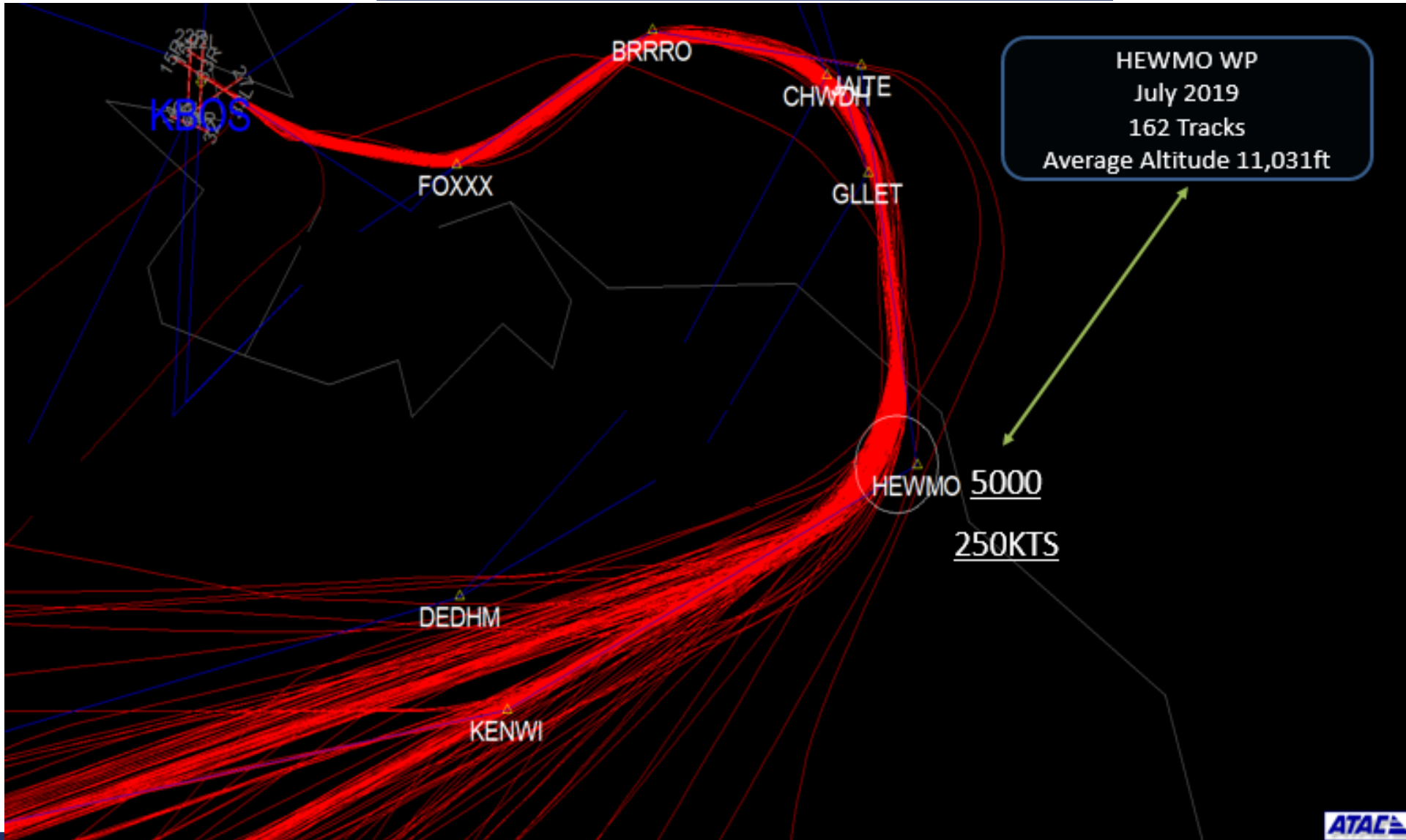
Federal Aviation
Administration

RWY 15R Departure



Federal Aviation
Administration

RWY 15R Departure



Federal Aviation
Administration

Noise Screening Analysis Report

For

General Edward Lawrence Logan International Airport

KBOS

Boston, Massachusetts

Prepared by:

ATO, AJV-114, Environmental Policy Team

Wednesday, February 26, 2020

Summary

Noise analysis was completed to assess potential impacts resulting from proposed air traffic actions at General Edward Lawrence Logan International Airport (BOS) in Boston, Massachusetts, using the Terminal Area Route Generation, Evaluation, and Traffic Simulation (TARGETS) Environmental Plug-in tool and the Aviation Environmental Design Tool (AEDT).

Historical radar track data was used to create a baseline scenario. After the baseline scenario was built, aircraft operations assigned to the proposed procedure were modeled as flying the proposed procedure instead of their historical tracks, which provides the alternative scenario. Selections for track assignments were made based on historical flight paths, and RNAV capable aircraft were assigned to the procedure nearest to their historical tracks in the alternative scenario.

Once the baseline and alternative scenarios were built, the TARGETS Environmental Plug-in Tool was used to generate noise outputs for both scenarios. In the case of BOS, there was no significant or reportable increase in noise resulting from the proposed action.

General Edward Lawrence Logan International Airport Noise Screening Analysis Report

1. Purpose

The purpose of this report is to document the process used to analyze the noise impact of proposed air traffic actions at General Edward Lawrence Logan International Airport (BOS) in Boston, Massachusetts and to present the results of that analysis. The analysis of the instrument flight procedures at BOS was performed using the Terminal Area Route Generation, Evaluation, and Traffic Simulation (TARGETS) Environmental Plug-in tool and the Aviation Environmental Design Tool (AEDT).

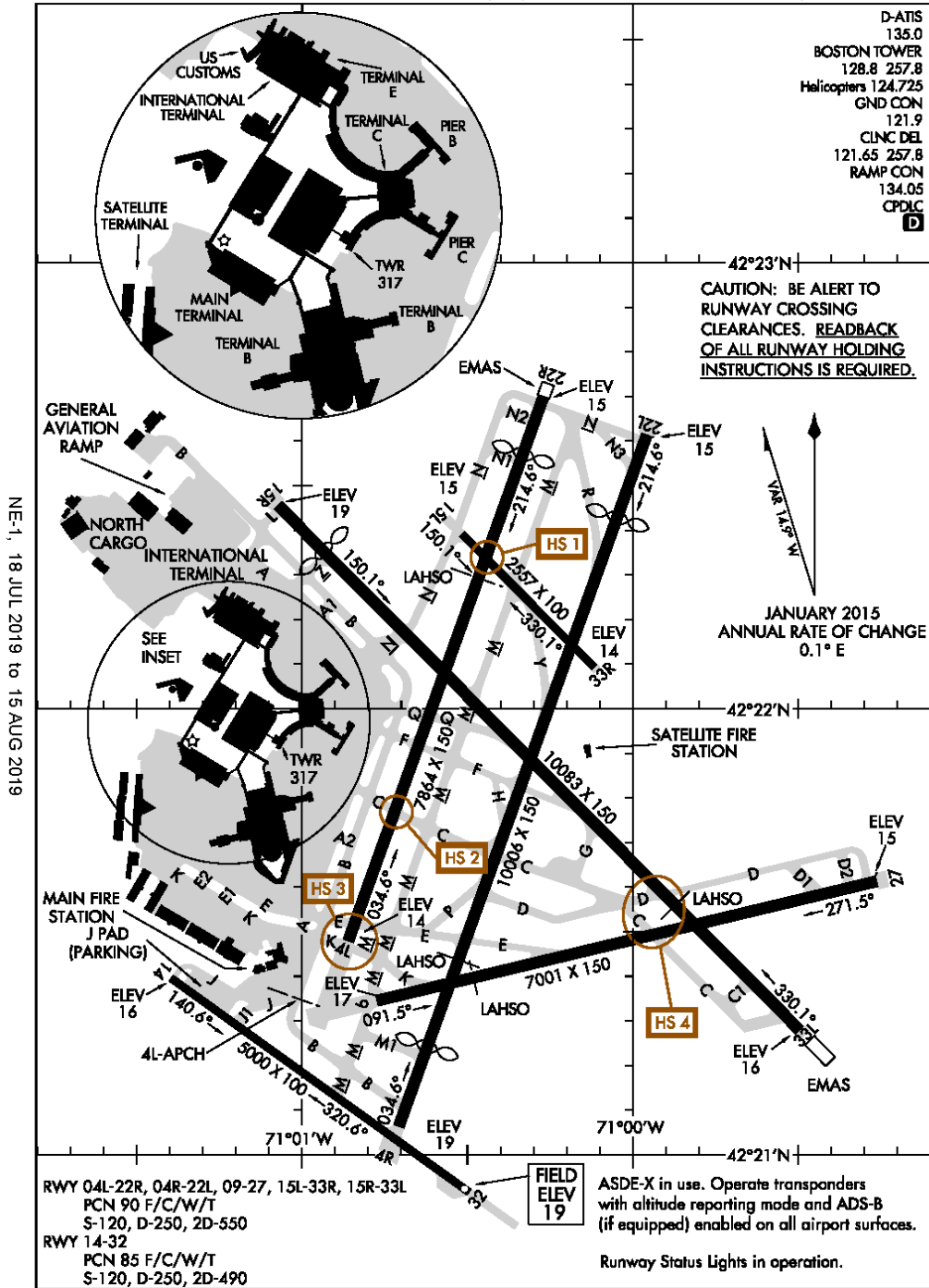
Figure 1-1 shows the airport diagram for BOS, which provides the runway layout and the airport's field elevation. Table 1-1 shows the procedure name, type and publication date. Figure 1-2 through Figure 1-10 show the locations of the procedures (See *Methods* for an explanation of track assignment). For the figures below, the depicted range ring has a radius of 25 nautical miles.

Table 1-1: Proposed Procedures Modeled for BOS

Procedure Name	Procedure Type
BLZZER	SID
BRUWN	SID
CELTK	SID
CGURL	RNAV STAR
HYLND	SID
LBSTA	SID
PATSS	SID
REVSS	SID
SSOXS	SID

19115
AIRPORT DIAGRAM

GENERAL EDWARD LAWRENCE LOGAN INTL (BOS)
AL-58 (FAA)
BOSTON, MASSACHUSETTS



NE-1, 18 JUL 2019 to 15 AUG 2019

NE-1, 18 JUL 2019 to 15 AUG 2019

19115
AIRPORT DIAGRAM

GENERAL EDWARD LAWRENCE LOGAN INTL (BOS)
BOSTON, MASSACHUSETTS

Figure 1-1: Airport Diagram of BOS

BOS Noise Screening Analysis Report *For Official Internal Use Only*

This Noise Screening Report was prepared by the FAA to assess noise exposure from the proposed project under consideration. Even though the data and results contained in the report are accurate, the report is a preliminary document, potentially subject to revision, until the FAA makes a final environmental decision related to the proposed project.

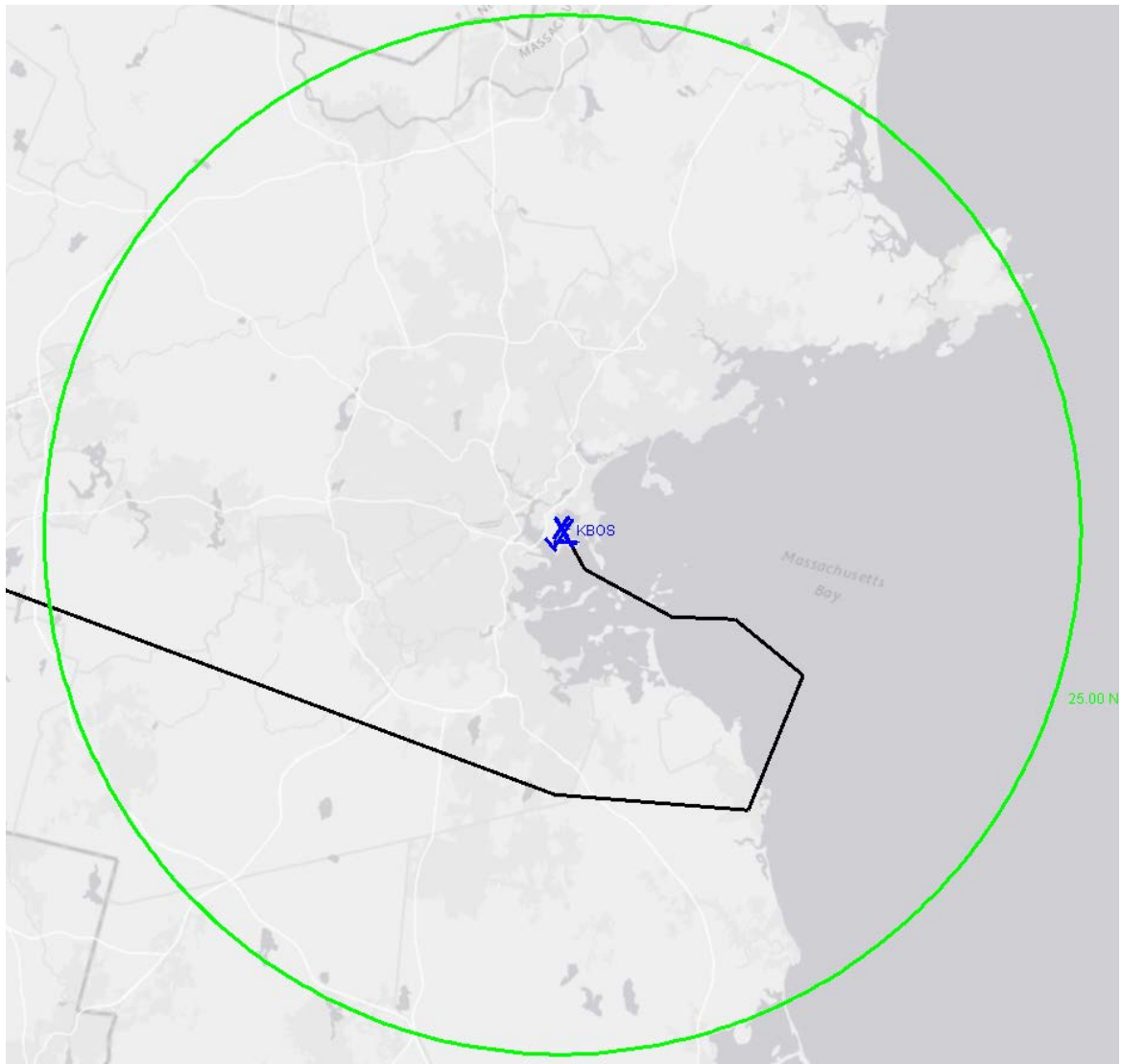


Figure 1-2: BOS BLZZER RNAV SID

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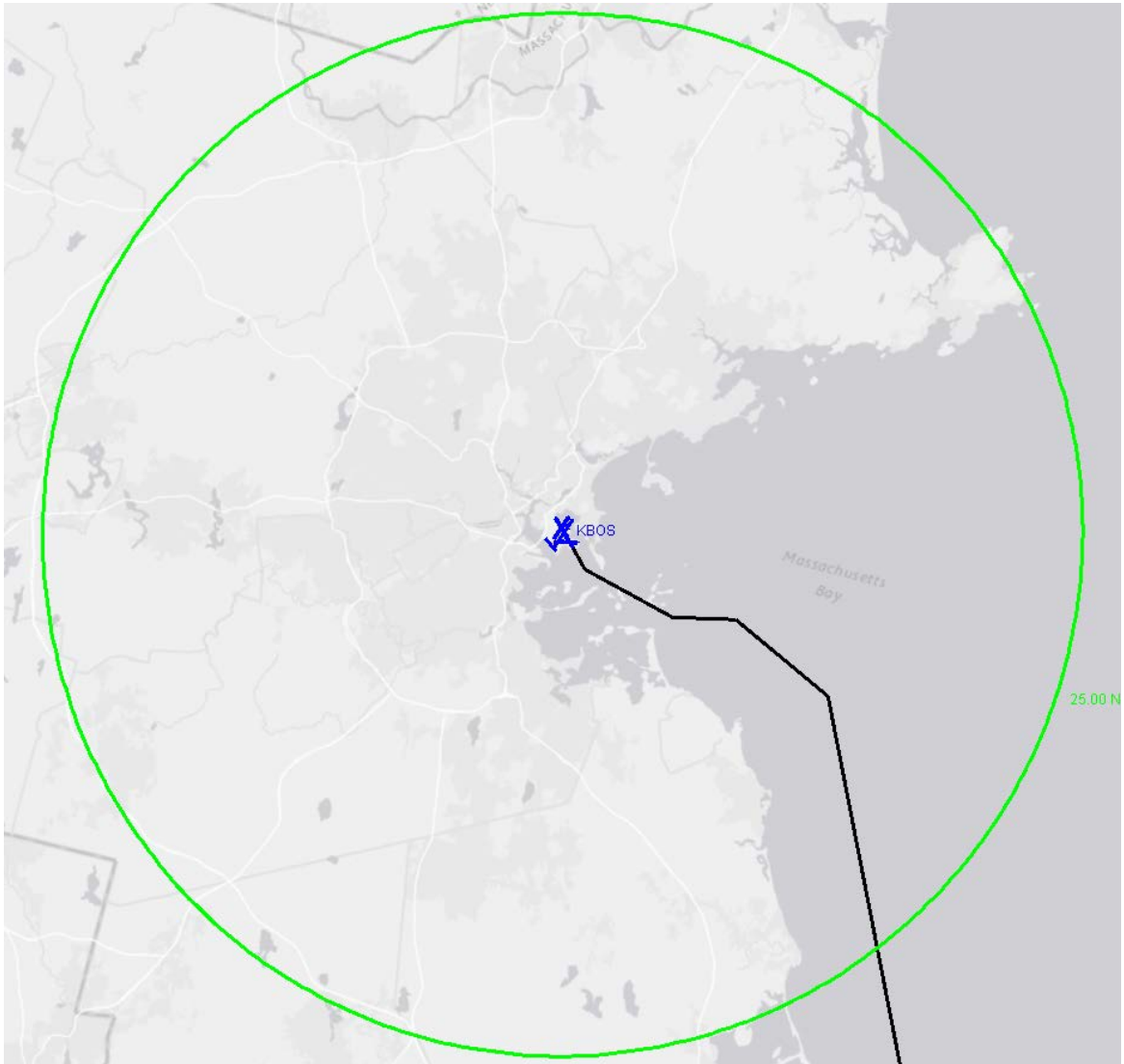


Figure 1-3: BOS BRUNN RNAV SID

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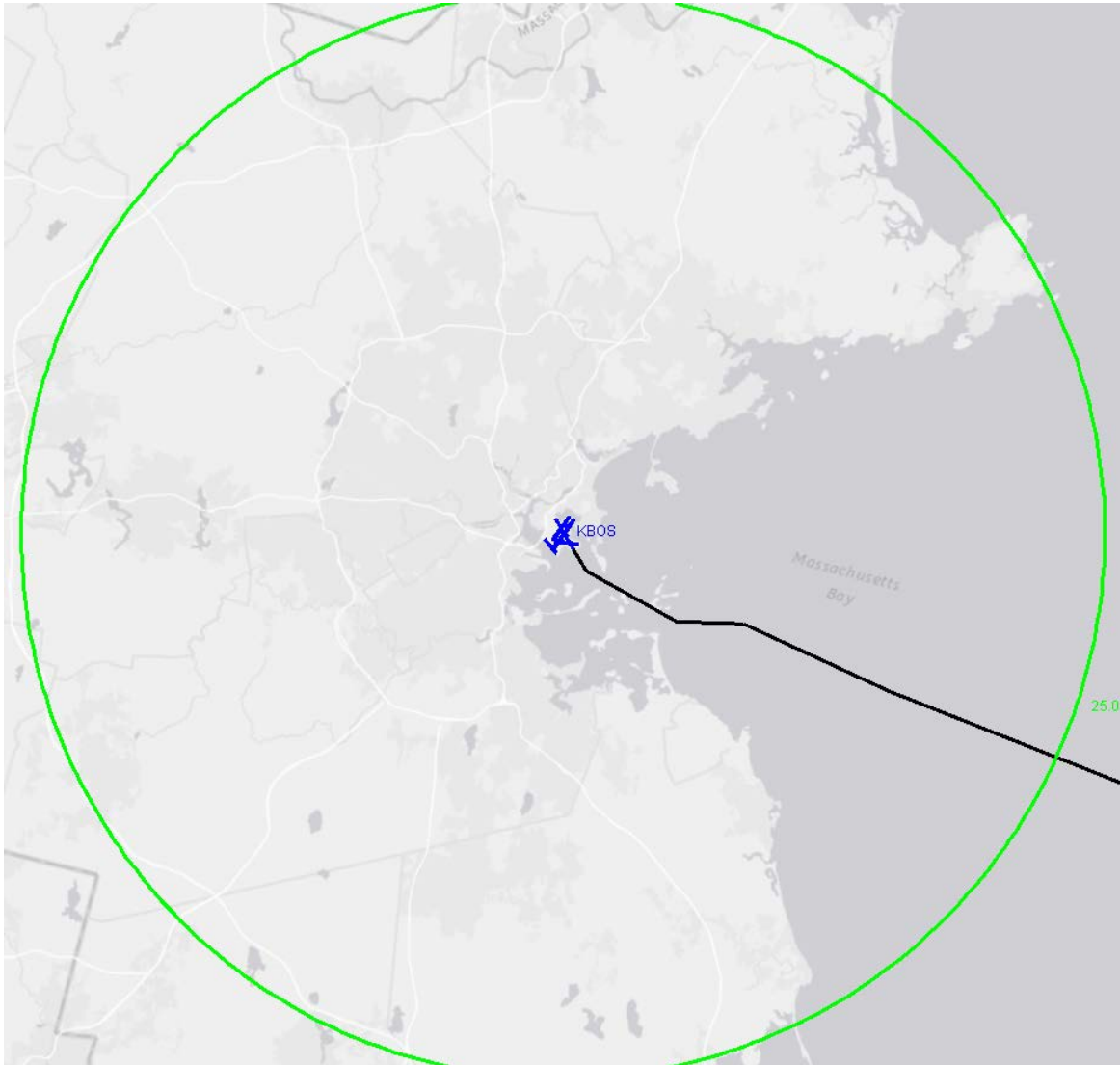


Figure 1-4: BOS CELTK RNAV SID

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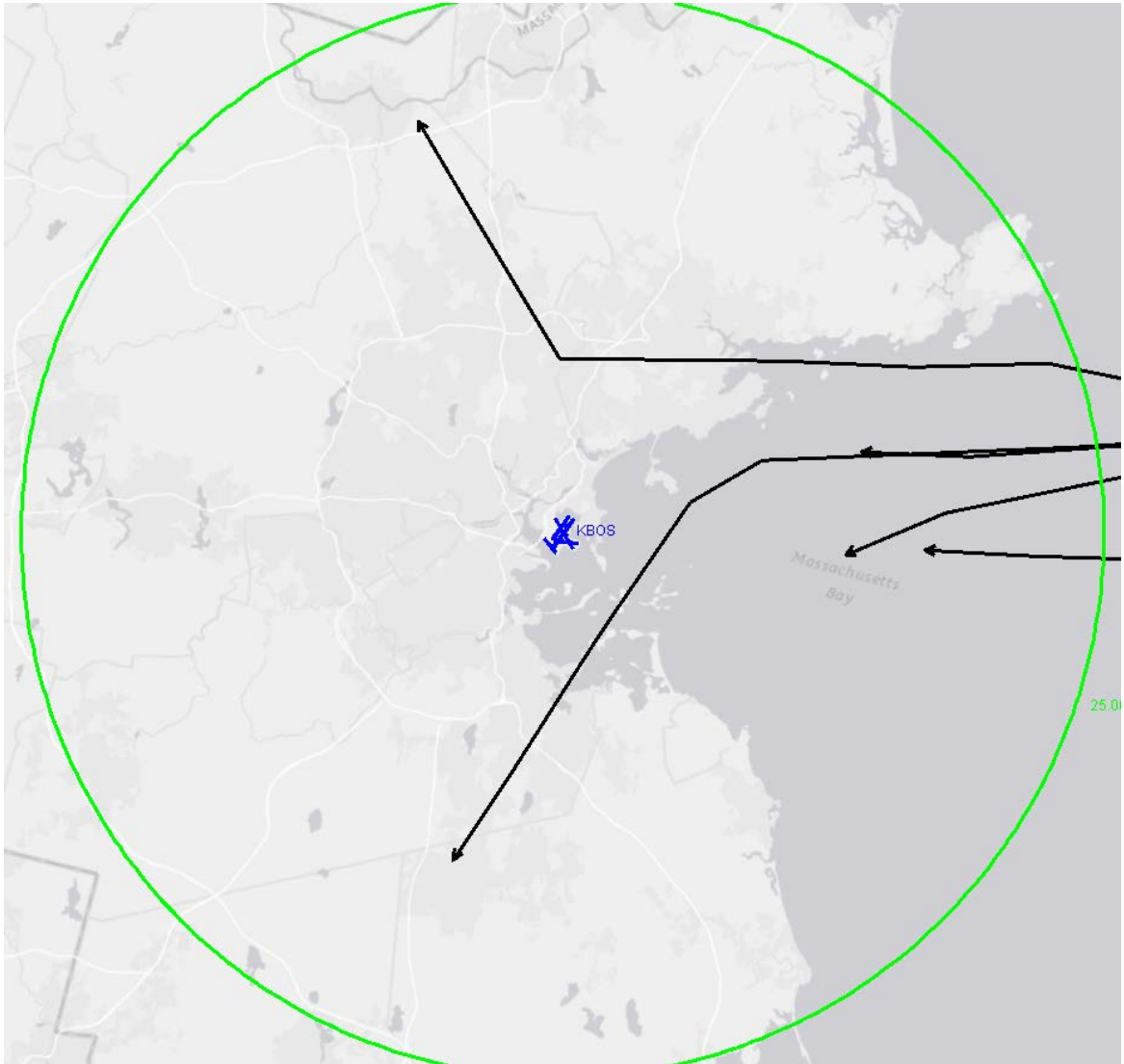


Figure 1-5: BOS CGURL RNAV STAR

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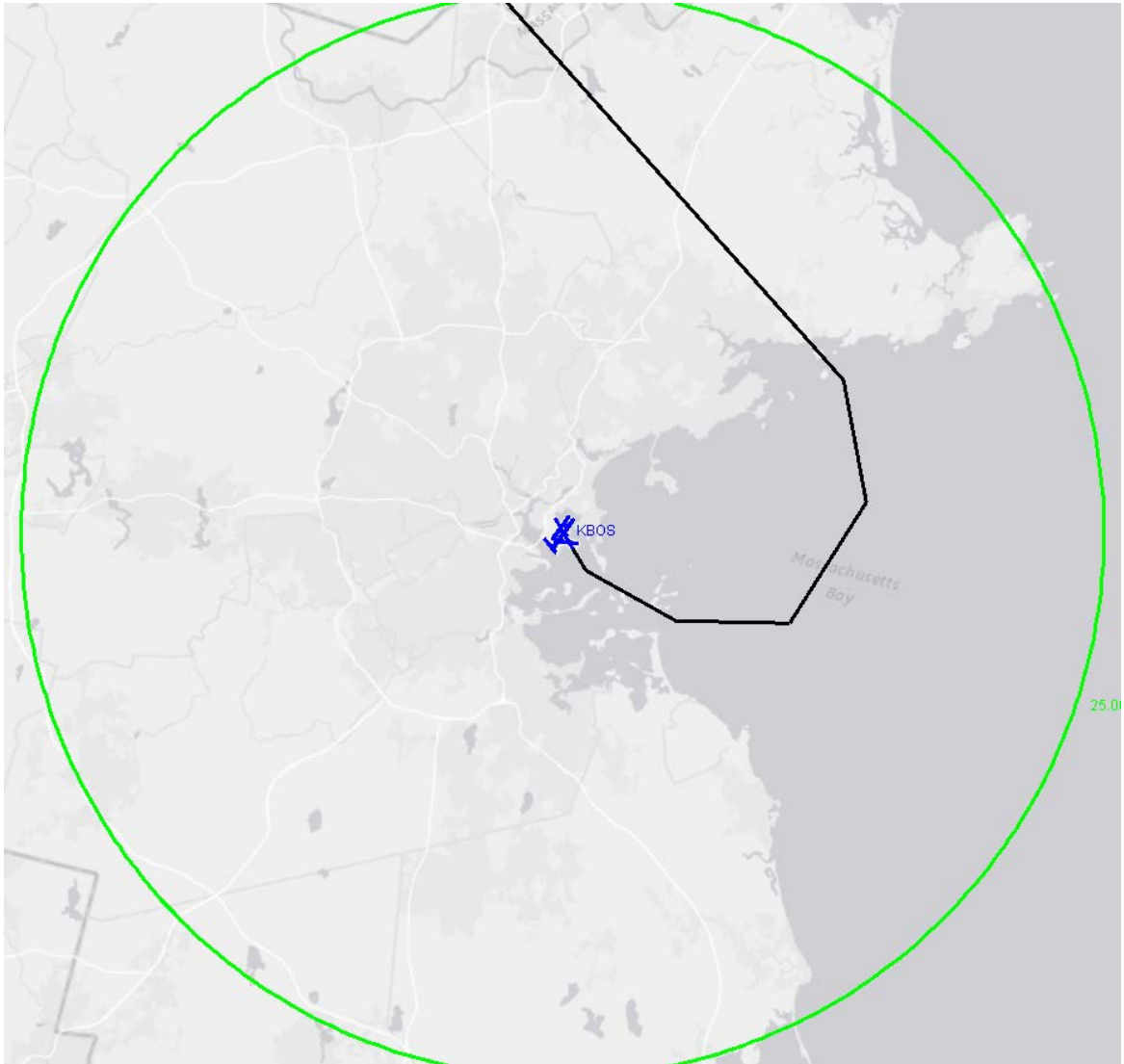


Figure 1-6: BOS HYLND RNAV SID

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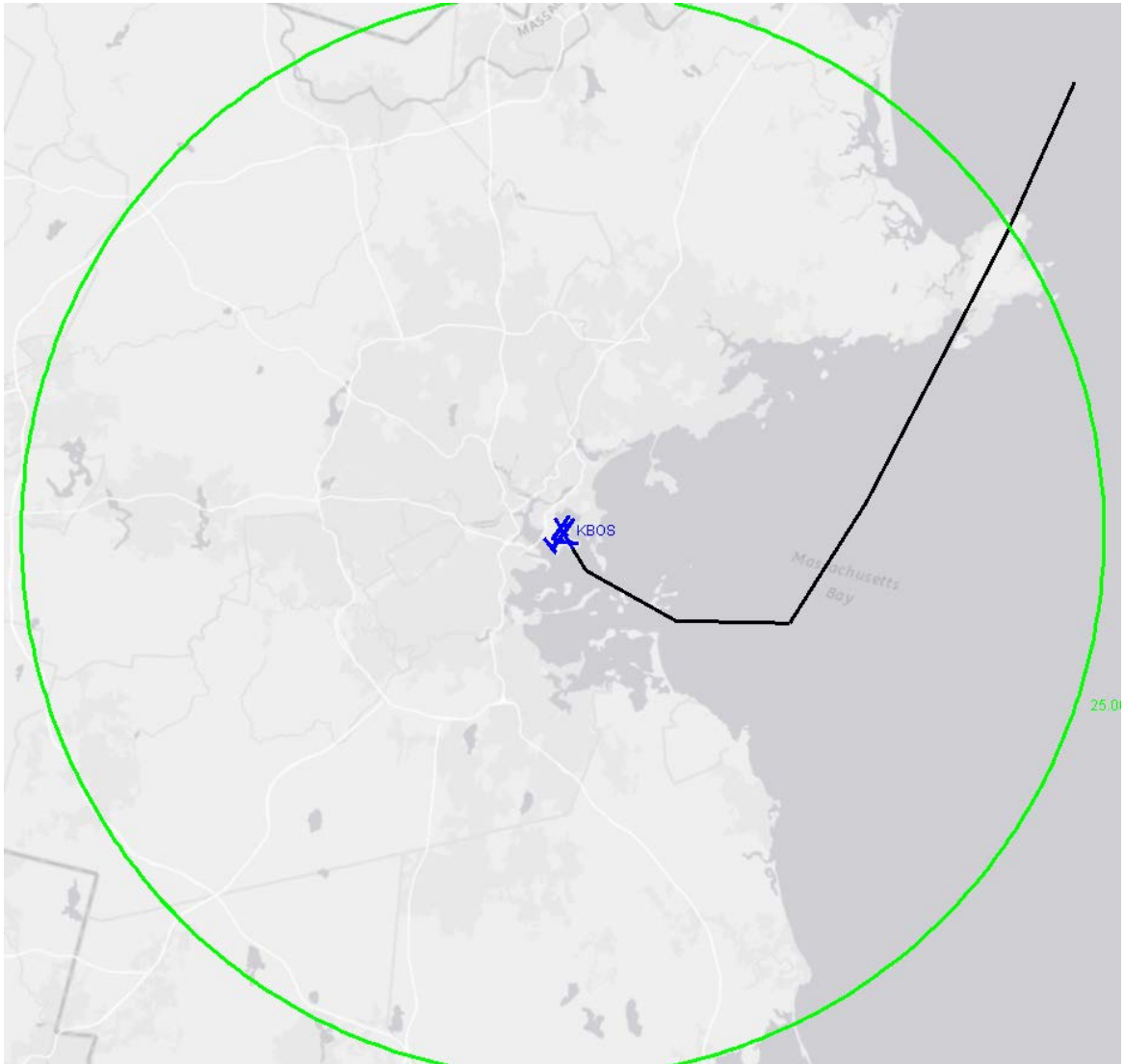


Figure 1-7: BOS LBSTA RNAV SID

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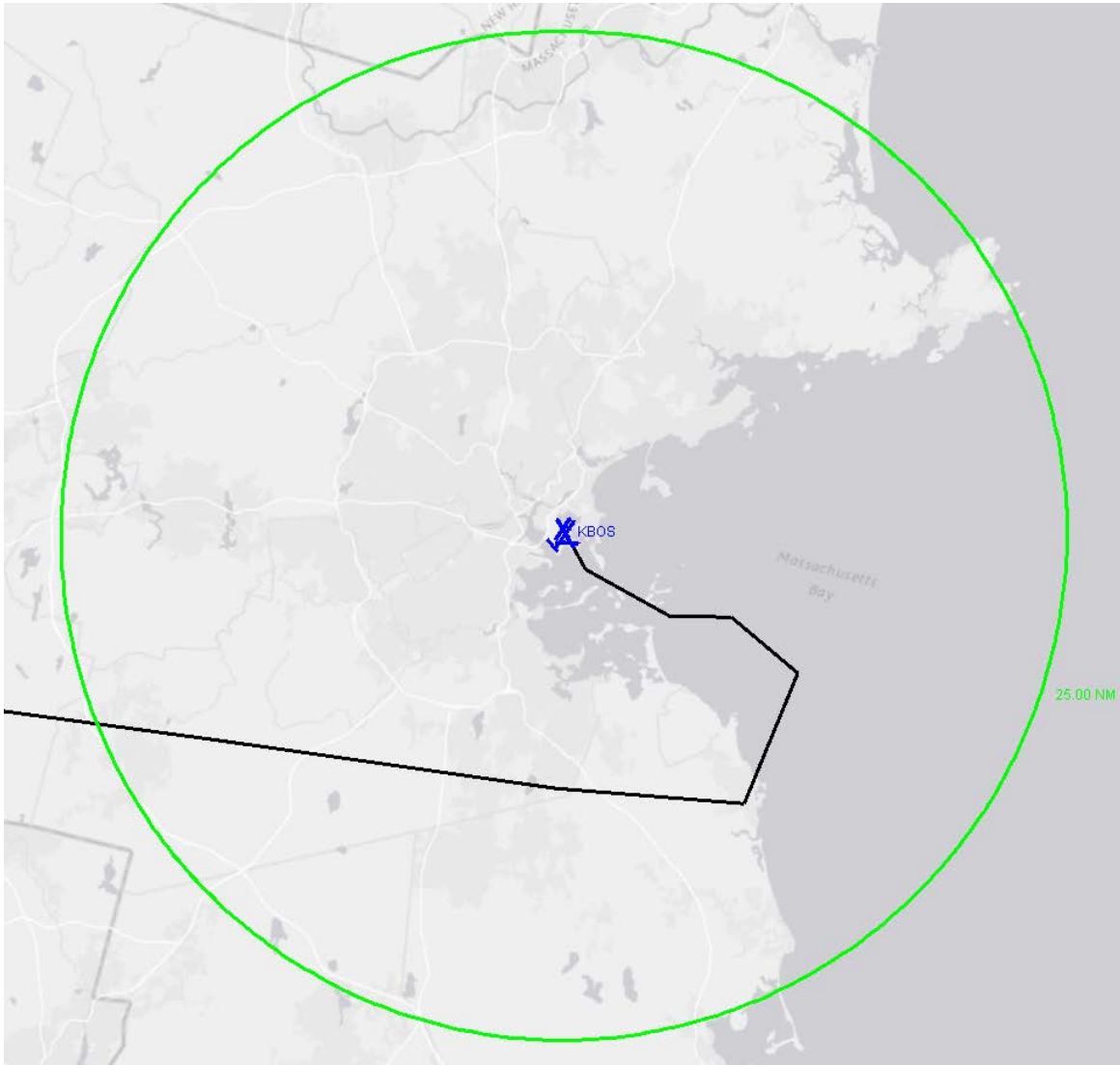


Figure 1-8: BOS PATSS RNAV SID

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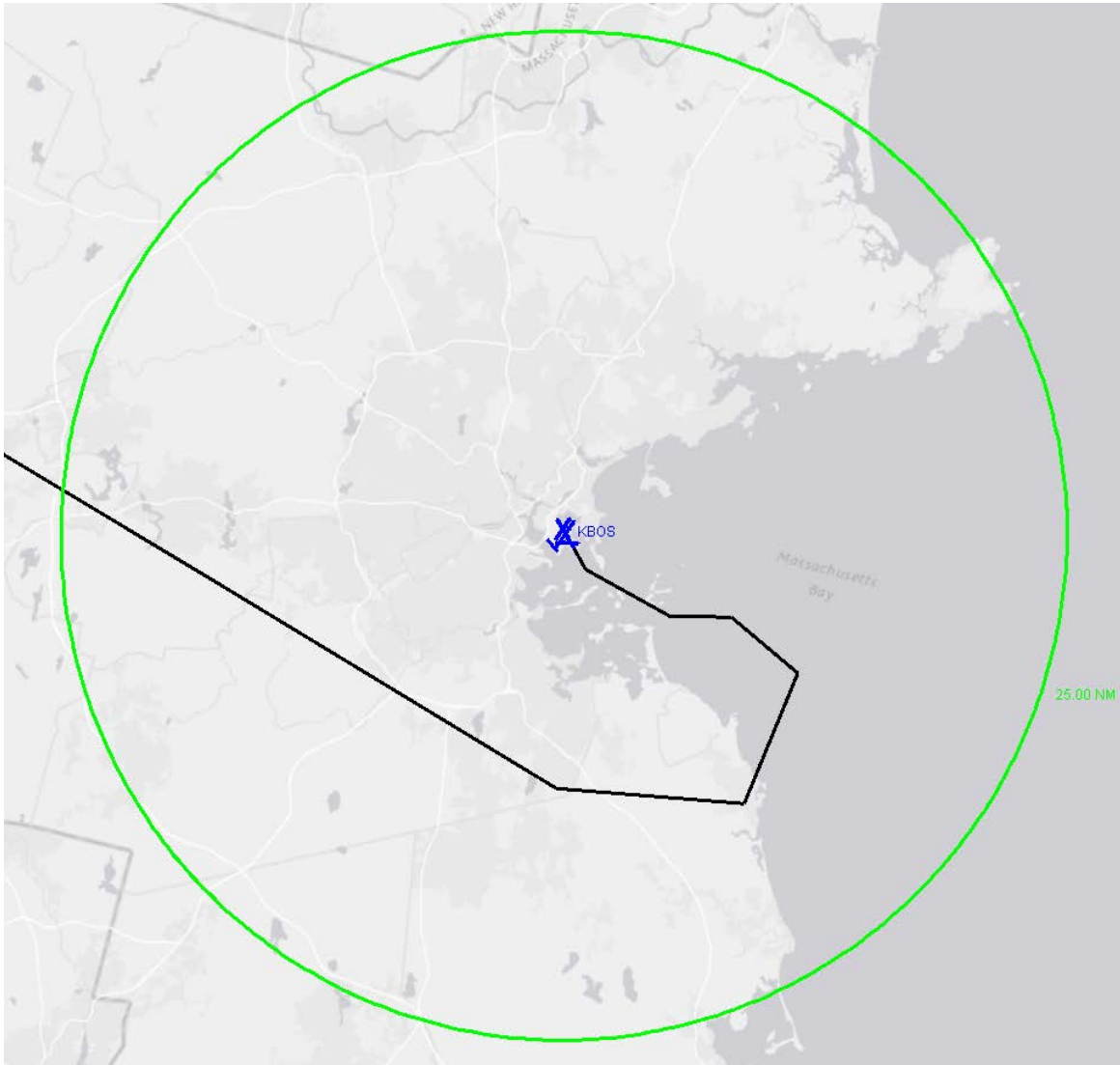


Figure 1-9: BOS REVSS RNAV SID

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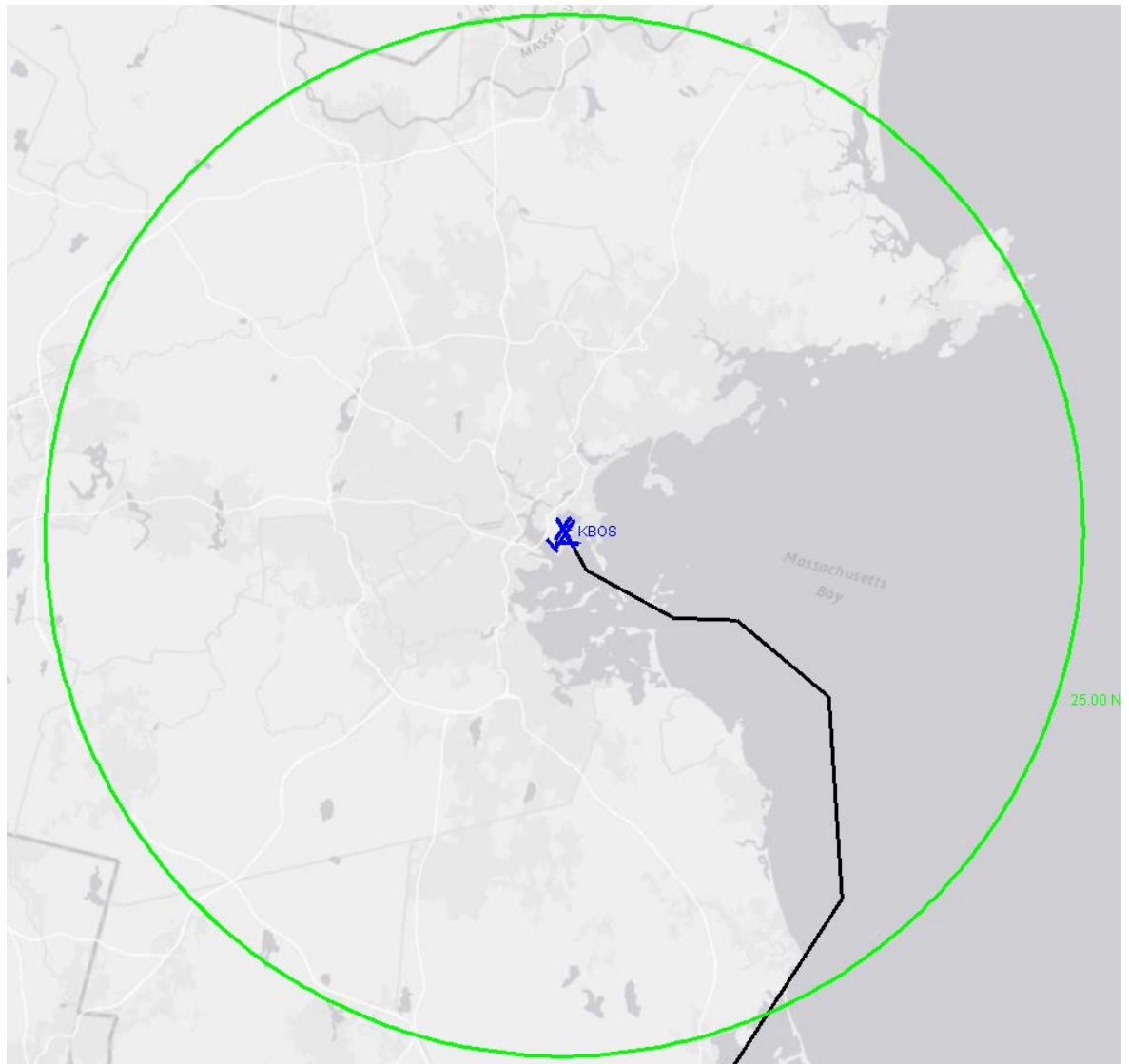


Figure 1-10: BOS SSOXS RNAV SID

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2. Methods

Noise screening was completed using the TARGETS Environmental Plug-in tool to calculate Day-Night Average Sound Levels (DNL) from existing operations (baseline) and modeled operations to replicate the proposed action (alternative). Historical radar track data for BOS was obtained from the FAA's National Offload Program (NOP)¹ after concurrence of the dates to be used by the environmental specialist and air traffic facility. 45 days of random radar track data were selected for the BOS analysis representing a range of temperature and wind conditions as well as being representative of the average runway usage.

After the removal of overflights, incomplete track segments, and other irrelevant and/or unusable tracks, 47,712 tracks were used for the analysis. The altitude of the historical tracks was considered and a range ring was set to contain the area where most of the tracks reached above 10,000 feet above ground level (AGL). This established the study area and the tracks outside of the study area were removed from the analysis. In the case of BOS, the study area is a circle with a radius of 25 nautical miles centered over the airport.

The random dates are assumed to represent average traffic counts and traffic flows through various seasons for BOS. There were no significant runway outages or significant conditions that would otherwise result in abnormal traffic counts or traffic flows. In order to calculate the Average Annual Day (AAD) impacts, traffic counts for average daily departures and arrivals used for annualization in this analysis were obtained through the FAA's AFS Data Analytics Runway Usage Module.

Historical radar track data (shown in Figure 2-1 and Figure 2-2) was used to create a baseline noise exposure, which provides lateral path definition, aircraft fleet mix, departure/arrival stream proportions for each runway, and day/night traffic ratios. A legend (Table 2-1) shows, by color, the altitudes of the track data.

The alternative scenario was built by taking aircraft operations and assigning them to the proposed procedure instead of their historical tracks. RNAV capable aircraft were assigned to the procedure based on their historical tracks, proximity to other procedures, and any additional usage information from the Environmental Specialist. Examples of these assignments are shown in the figures above.

The analysis does not take into account terrain. All calculations were made in reference to the airport's field elevation. Aircraft altitudes were based on AEDT standard profiles. With respect to lateral distribution, a 0.5 nautical mile dispersion for RNAV procedures was used and a 0.3 nautical mile dispersion for RNP procedures was used based the methods described in *Guidance for Noise Screening of Air Traffic Actions*.²

Once the baseline and alternative scenarios were built, the TARGETS Environmental Plug-in Tool was used to generate noise outputs for both scenarios. The Environmental Plug-in Tool uses the Aviation Environmental Design Tool version 2d (AEDT 2d) to calculate noise. The noise output files from AEDT 2d for both the baseline and alternative noise exposures consist of a series of equally spaced grid points, each showing the DNL value. The noise grid (receptor set) is a square grid extending 20 nautical miles (nm) in each direction of the airport with grid points (receptors) spaced 0.25 nm apart. The noise results of the baseline and alternative scenarios were then compared to test for noise impacts.

The noise impact is a comparison between the baseline and the alternative noise exposure that depicts reportable and significant noise changes at all affected locations per the criteria indicated in FAA Order 1050.1F and Chapter 32 of FAA Order 7400.2K. The reportable and significant noise increases and decreases (if any) are then depicted on an aerial photograph.

¹All traffic data was obtained using the Boston Center (BOS) as the radar source facility.

²Guidance for Noise Screening of Air Traffic Actions. Revision 2. December 2012.

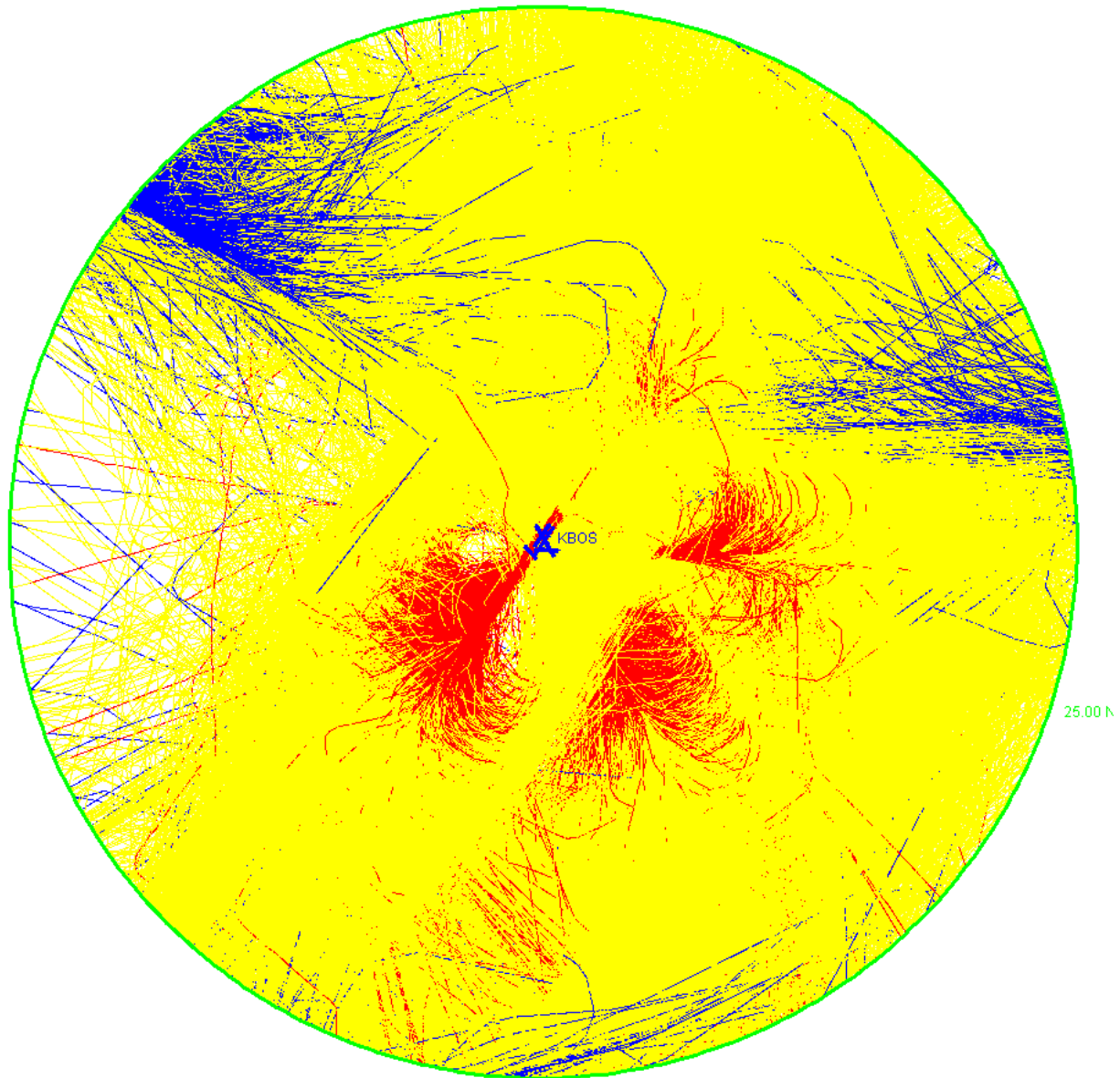


Figure 2-1: BOS Arrival Traffic Used in Analysis

BOS Noise Screening Analysis Report *For Official Internal Use Only*

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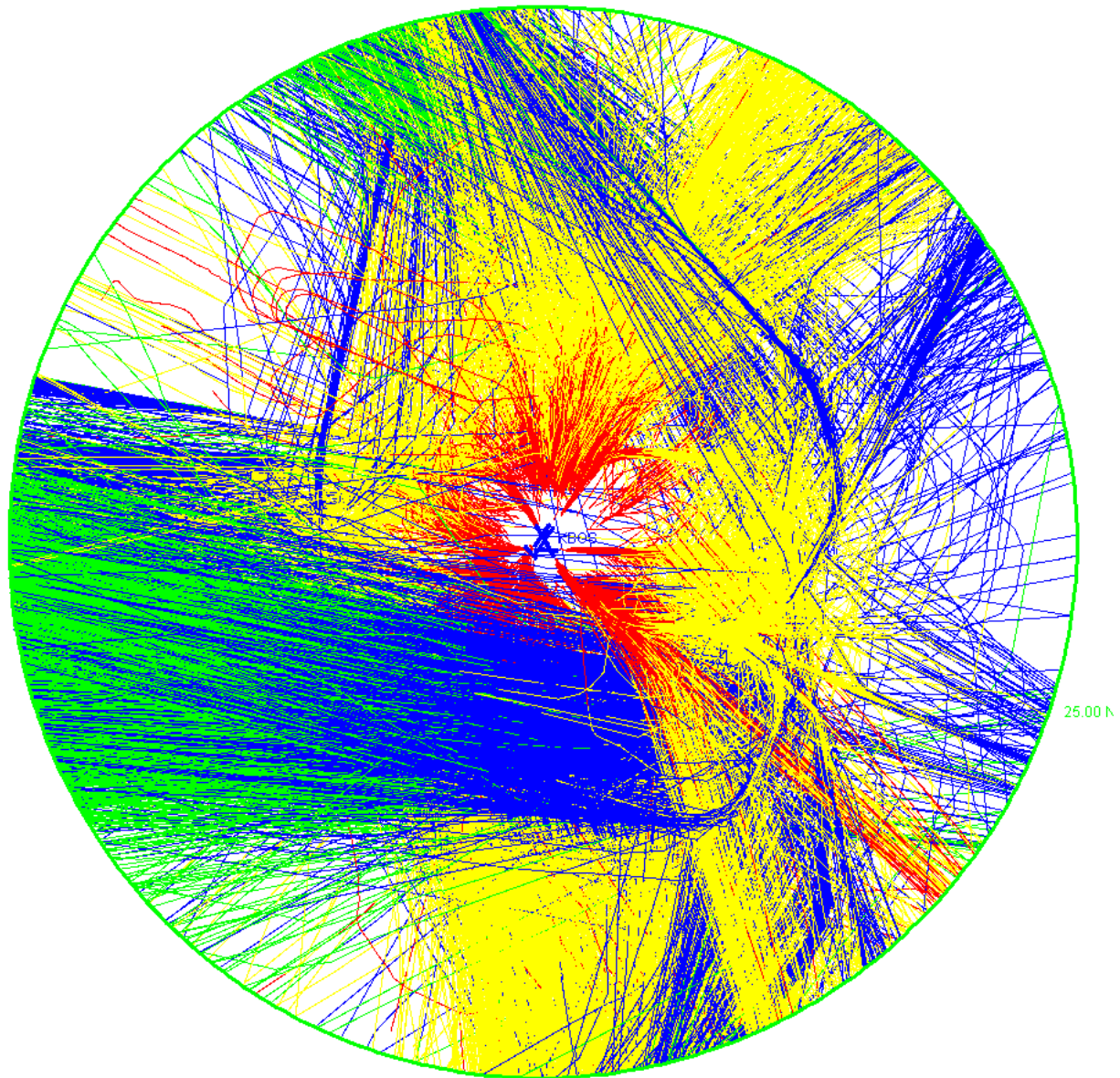


Figure 2-2: BOS Departure Traffic Used in Analysis

BOS Noise Screening Analysis Report *For Official Internal Use Only*

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Table 2-1: Track Data Legend with Above Field Elevation (AFE) and Mean Sea Level (MSL) Altitudes

<i>Airport: BOS</i>		<i>Field Elevation: 19</i>
AFE Altitudes (ft.)	MSL Altitudes (ft.)	Legend Colors
1000 - 2999	1019 - 3018	Red
3000 - 9999	3019 - 10018	Yellow
10000 - 17999	10019 - 18018	Blue
18000 - Above	18019 - Above	Green

BOS Noise Screening Analysis Report *For Official Internal Use Only*

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3. Baseline Noise Exposure

The baseline noise exposure is shown in Figure 3-1, which depicts the levels and locations of the noise produced by the historical radar track data for arrivals and departures. Table 3-1 is the legend for the baseline noise exposure figures.

Table 3-1: Legend for Noise Exposure

Geometric Shape	Color	DNL Value
SQUARE	PURPLE	45–50 dB
SQUARE	BLUE	50–55 dB
SQUARE	GREEN	55–60 dB
SQUARE	YELLOW	60–65 dB
SQUARE	ORANGE	65–70 dB
SQUARE	RED	70 dB OR MORE

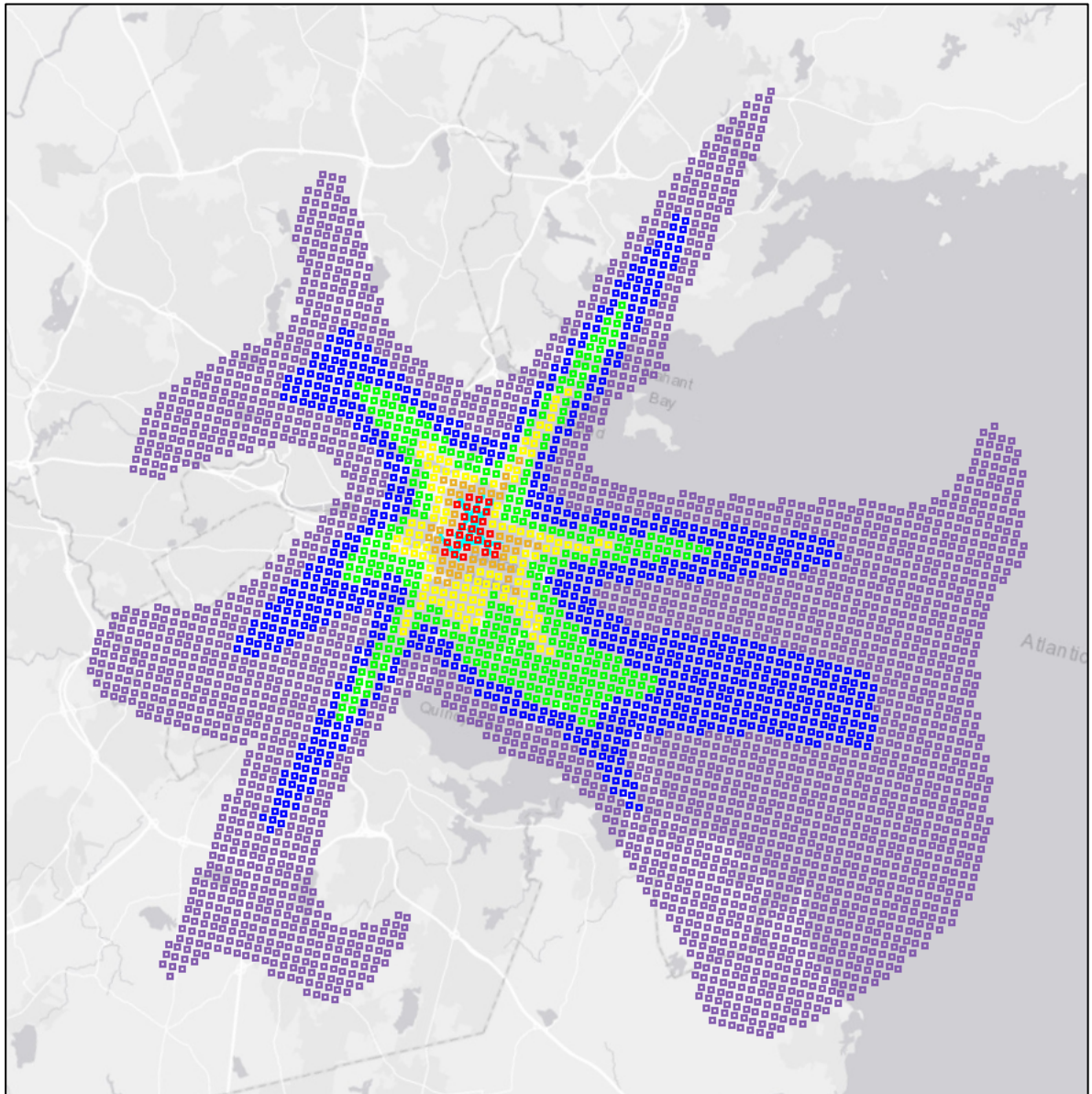


Figure 3-1: Baseline Noise Exposure in TARGETS

BOS Noise Screening Analysis Report *For Official Internal Use Only*

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4. Alternative Noise Exposure

The alternative noise exposure is shown in Figure 4-1, which depicts the levels and locations of the noise exposure output from the model of the proposed action.

Table 4-1 is the legend for the alternative noise exposure figures.

Table 4-1: Legend for Noise Exposure

Geometric Shape	Color	DNL Value
SQUARE	PURPLE	45–50 dB
SQUARE	BLUE	50–55 dB
SQUARE	GREEN	55–60 dB
SQUARE	YELLOW	60–65 dB
SQUARE	ORANGE	65–70 dB
SQUARE	RED	70 dB OR MORE

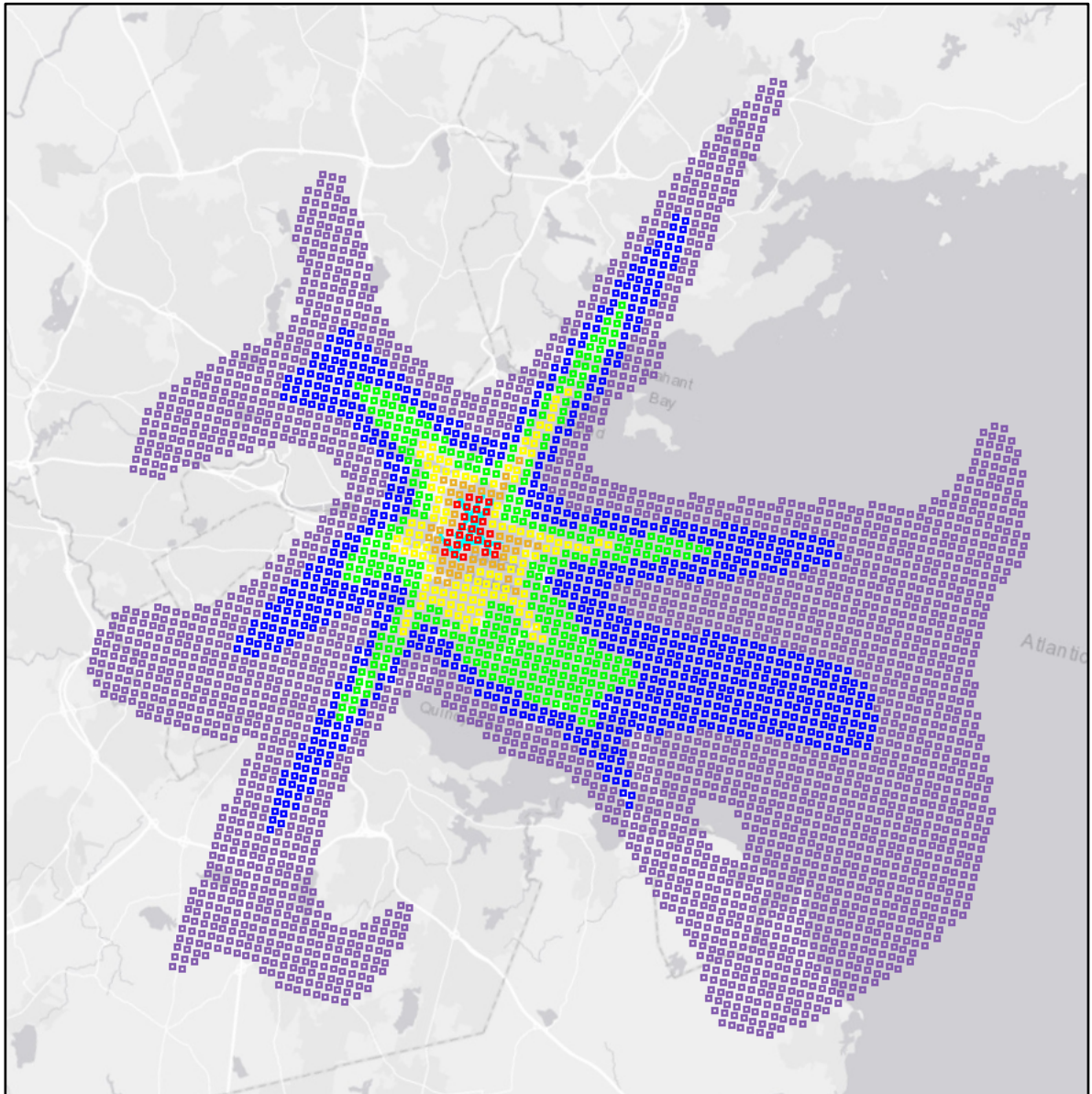


Figure 4-1: Alternative Noise Exposure for the Proposed Procedures in TARGETS

5. Noise Impacts

A comparison of the baseline and alternative scenarios by the TARGETS Environmental plug-in determines the noise impacts of the proposed action. Significance of noise impacts is defined by FAA Order 1050.1F³ which establishes the threshold for significant increases in noise exposure. Where the proposed action results in a noise impact, TARGETS graphically displays a noise impact layer that indicates the locations of reportable and significant changes. When applicable, these impacts are shown overlaying a map view of the area surrounding the airport. In the case of BOS, there was **no significant or reportable increase in noise** resulting from the proposed action.

³ According to Exhibit 4-1 of FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, a noise impact is significant if “*The action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.*”

BOS Noise Screening Analysis Report *For Official Internal Use Only*

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U.S. Department
of Transportation
**Federal Aviation
Administration**

July 31, 2019

Ms. Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

RE: Massachusetts Historical Commission (MHC) Project Notification Form for Block 1
Procedures at Boston-Logan International Airport

Dear Ms. Simon,

Please find enclosed a completed Project Notification Form (PNF) for the proposed Federal Aviation Administration (FAA) air traffic control arrival procedure at Boston-Logan International Airport (BOS).

A Memorandum of Understanding was signed between Massport and FAA September, 2016, which resulted in the formation of a Full Working Group that consists of Industry, Air Traffic Facilities, and Massport/MIT. The BOS BLOCK 1 recommendations are operational feasible. The following Block 1 designed procedures mitigates concerns and addresses FAA procedural requirements, which includes five-letter names of each waypoint:

- BOS Area Navigation (RNAV) Global Position System (GPS) Runway 33Left - RNAV Standard Terminal Arrival (STAR) (BOS RNAV (GPS) RWY 13L)
- BOS Required Navigation Performance (RNP) RWY 33L - RNP Approach
- BLZZER – Standard Instrument Departure (SID)
- BRUWN - SID
- BUNNT - RNAV STAR
- CELTK - SID
- CGURL - RNAV STAR
- HYLND - SID
- LBSTA - SID
- LUNAA - SID
- PATSS - SID
- REVSS - SID
- SSOXS - SID

The FAA has identified and reviewed a list of historic properties known to exist within the area of potential effect (APE) from the National Register of Historic Places (NRHP) and National Historic Landmarks. In addition, the FAA has considered potential impacts on those properties that may be eligible for listing in the NRHP, including those with a quiet setting as an attribute. The FAA conducted a noise analysis for the procedures, which resulted in no reportable or significant noise impacts. Based on our analysis of potential effects from the new procedures, the FAA proposes to make a finding of “No Adverse Effect” on historic properties under 36 C.F.R. 800.5. Information supporting FAA’s finding, is contained in the enclosed PNF.

If you should need any further information or wish to discuss the project, please contact me as soon as possible at veronda.johnson@faa.gov or 404-305-5598.

Sincerely,

Veronda Johnson

Ms. Veronda Johnson
Eastern Service Center
Operations Support Group
1701 Columbia Avenue
College Park, Georgia 30337

cc: F. Leo, Massachusetts Port Authority
Enclosure: MHC PNF w/attachments

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: Boston Logan International Airport (BOS) Block 1 Procedures

Location / Address: Boston Logan International Airport

City / Town: Boston, Massachusetts

Project Proponent

Name: Mr. Coleman Hartigan
Air Traffic Manager
Boston Consolidated Terminal Radar Approach Control (TRACON)
Federal Aviation Administration

Address: 25 Robert Milligan Parkway

City/Town/Zip/Telephone: Merrimack, NH 03054
(603) 594-5502
coleman.hartigan@faa.gov

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name

Type of License or funding (specify)

Federal Aviation Administration (FAA)	The FAA is the federal agency that would approve and implement the new Block 1 procedures to at Boston-Logan Airport.
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Project Description (narrative):

The proposed project includes the implementation of the BOS Block 1 procedures which resulted in the formation of a Full Working Group that consists of Industry, Air Traffic Facilities, and Massport/MIT. The BOS BLOCK 1 recommendations are operational feasible. The following Block 1 designed procedures mitigates concerns and addresses FAA procedural requirements, which includes five-letter names of each waypoint:

- BOS Area Navigation (RNAV) Global Position System (GPS) Runway 33Left - RNAV Standard Terminal Arrival (STAR) (BOS RNAV (GPS) RWY 13L)
- BOS Required Navigation Performance (RNP) RWY 33L - RNP Approach
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- CGURL - RNAV STAR
- HYLND - SID
- LBSTA - SID
- LUNAA - SID
- PATSS - SID
- REVSS - SID
- SSOXS - SID

See **Figures 2-12: BOS Block 1 Recommended Procedures, July 31, 2019**

The primary purpose of this project was to identify potential modifications to approach and departure procedures at Boston Logan International Airport (BOS) which would reduce community noise impact in areas which experience flight track concentration. Potential procedure modifications were separated into two sequential “Blocks”. Block 1 procedures were characterized by clear predicted noise benefits, limited operational/technical barriers and a lack of equity issues. This project presents recommendations for Block 1 procedures.

Does the project include demolition? If so, specify nature of demolition and describe the building(s), which are proposed for demolition.

No land acquisition, construction, or other ground disturbance would occur with implementation of the Proposed Action Alternative.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s), which are proposed for rehabilitation.

No land acquisition, construction, or other ground disturbance would occur with implementation of the Proposed Action Alternative.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

No land acquisition, construction, or other ground disturbance would occur with implementation of the

Proposed Action Alternative.

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

Since the implementation of the Block I recommended procedures results in no physical alterations, for the purposes of identifying an area of potential effect (APE), the FAA considered potential indirect audible (aircraft noise) and visual effects of the proposed Block 1 procedures on historic or archaeological properties. See **Figures 2-12: Area of Potential Effect**, and the more detailed information below on how FAA determined the APE for noise and visual purposes.

Noise

The FAA conducted a comprehensive noise analysis using the FAA's Aviation Environmental Design Tool (AEDT). The AEDT calculates changes in noise exposure using the FAA's Day-Night Average Sound Level (DNL) metric at numerous grid points within any given study area when comparing the No Action Alternative to the Proposed Action. For the Proposed Action, DNL used ninety days of radar track data for 47,712 flight tracks. See **Additional Information on FAA Aircraft Noise Analyses** at the end of the PNF for a description of the FAA's DNL metric and noise increase thresholds. Based on FAA thresholds, the FAA determined that the APE includes those areas that would experience any noise increases within areas located at and above the DNL 45 decibel (dB) range from the implementation of the Block 1 procedures.

FAA analyzed noise for all population centroids from the U.S. Census blocks throughout the APE as well as at specific locations such as natural resources and for all properties listed in the National Register of Historic Places (NRHP) and National Historic Landmarks. The historic properties data was obtained from the National Park Service¹ for all data in Massachusetts as a Google Earth .KML file. The data was then clipped in a Geographic Information System (GIS) to the APE boundary, for which noise exposure was modeled in areas above 45 DNL. **Table 1: FAA Block 1 Procedures - DNL Changes on Historic Properties, July 31, 2019** includes a list of the historic properties within the APE (noise and visual). Noise modeling results showed a range of noise changes from DNL -0.3 dB (decreases) to +0.1 dB (increases). Note: there are also DNL noise decreases outside of the APE associated with the implementation of the Block 1 procedures. In addition, since not all properties that are eligible for the NRHP may be included in the list, FAA was able to determine potential adverse effects to potentially eligible properties by reviewing the changes in noise exposure at all population centroids and natural resource areas within the APE. This ranged from DNL -0.3 dB (decreases) to +0.1 dB (increases) as well.

Based on the results of the noise modeling, the FAA determined that the implementation of the Block 1 procedures would not cause adverse noise effects to historic properties either listed or eligible for listing on the NRHP. DNL noise increases are substantially below the FAA threshold for significant noise impacts per FAA Order 1050.1F *Environmental Impacts: Policies and Procedures* and substantially below the non-significant DNL levels required to be disclosed per FAA Order 1050.1F. Noise levels that must be disclosed include a +/- 3.0 dB change in the DNL 60-65 dB range and +/-5.0 dB change in the DNL 45-60 dB range. Significant impact by federal standards is an increase of DNL 1.5 dB in an area exposed to DNL 65 dB. Per FAA's DNL metric, the noise increases from the Block I procedures throughout the entire APE are negligible and would not be perceptible. As a result, in addition there would be no adverse effect or

constructive use of any properties in the APE protected under Section 4(f) of the Department of Transportation Act, where a quiet setting is a generally recognized feature or attribute of the sites significance. ¹ NPS Focus page at <http://nrhp.focus.nps.gov/natreg/docs/Download.html>

Visual

The FAA determined the APE should also include the more concentrated Block 1 procedures flight corridor as modeled in the AEDT, which is 0.25 nautical miles (NM) on either side of the proposed procedure and extending from the ground to the altitude of aircraft on the proposed procedure. **Table 1** also includes the historic properties within the APE as defined by the flight corridor regardless of DNL noise increases.

Cumulative APE

The FAA also considered the cumulative effects of the Block 1 procedures. The Block 1 procedures may be implemented after the environmental review process has been completed and after the procedure is published which is currently scheduled for December 5, 2019 – see **Figure 3: Cumulative APE: BOs Block 1 Procedures, July 31, 2019**. Historic properties were identified within the cumulative APE as described above under Noise and are listed in **Table 2: Cumulative Noise Effects on Historic Properties for Block 1 Procedures**

Cumulative noise impacts ranges from DNL -0.3 dB (decreases) to +0.1 dB (increases) which are substantially below FAA thresholds of significant and substantially below the non-significant DNL levels required to be disclosed per FAA Order 1050.1F and are not expected to have any adverse effects on historic properties listed or eligible for listing in NRHP. Per FAA's DNL metric, the noise increases from the Block 1 procedures are negligible and would not be perceptible. As a result, there would no adverse effect or constructive use of any properties in the APE protected under Section 4(f) of the Department of Transportation Act, where a quiet setting is a generally recognized feature or attribute of the sites significance.

What is the total acreage of the project area?

There is no construction associated with the project, however, APE for the Block 1 procedures cover approximately 20NM, and the cumulative APE covers approximately 35 NM.

What is the acreage of the proposed new construction?

N/A

What is the present land use of the project area?

N/A

Please attach a copy of the section of the USGS quadrangle map, which clearly marks the project location. See attachments as referenced above.

Additional Information on FAA Aircraft Noise Analyses

DNL is the standard Federal metric for determining cumulative exposure of individuals to noise. In 1981, FAA formally adopted DNL as its primary metric to evaluate cumulative noise effects on people due to aviation activities. DNL is the 24-hour average sound level in decibels. This average is logarithmically

derived from all aircraft operations during a 24-hour period that represents an airport's average annual operational day. In 1992, the Federal Interagency Committee on Noise technical subgroup concluded that no other metrics are of sufficient scientific standing to replace DNL.

FAA relies on FAA Order 1050.1F to determine if DNL increases in noise exposure will have an adverse effect on historic properties in accordance with 36 CFR 800.5(a)(20) (v) – *Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.*

In accordance with 14 Code of Federal Regulations, Part 150 Airport Noise Planning, Land Use Compatibility Guidelines included in the Desk Reference of FAA Order 1050.1F, most all land uses are considered compatible below DNL 65 dB including residential areas (see attached **Exhibit 11-3 from FAA Order 1050.1F Desk Reference**). As stated above, a DNL increase of 1.5 dB or more at or above DNL 65 dB is considered significant; however, FAA Order 1050.1F states that special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges, and historic sites, including traditional properties. As a result, FAA evaluated if DNL increases of 3 dB or more between DNL 60 dB and 65 dB or DNL increases of 5 dB or more between DNL 45 dB and 60 dB existed for further consideration. In general, the reportable levels represent perceptible DNL changes in noise outside of the 65 DNL noise contour.

The FAA compares the No Action and Proposed Action in the same time frame to determine changes in noise. The 2017 calendar year was used for this project, and was consistent with the 2017 Boston Logan Airport Noise Study (BLANS).

Note, that the AEDT analysis within the APE provides a specific DNL value for US Census centroid and other locations in addition to those specific historic properties as listed in **Tables 1 and 2** and does not develop an average sound level throughout the APE. This level of detail allows FAA to appropriately consider potential project impacts.

This Project Notification Form has been submitted to the Massachusetts Historical Commission (MHC) in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: _____

Name: Ms. Veronda Johnson, Environmental Protection Specialist, Operations Support Group, Eastern Service Center, Federal Aviation Administration

Address: 1701 Columbia Avenue

City/Town/Zip: College Park, Georgia 30337

Telephone: (404) 305-5598

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

**Table 1: Boston Logan International Airport Block 1
Procedures DNL Changes on Historic Properties
July 31, 2019**

Ref. #	Description	Latitude	Longitude	DNL Change FAA RNAV IAP
HI	Scituate Light	42.20177	-70.71476	0.0
HI	Minot's Ledge Light	42.26773	-70.76019	0.0
HI	Point Allerton Lifesaving Station	42.30557	-70.8998	0.0
HI	Boston Light	42.32788	-70.89027	0.0
HI	Fort Warren	42.31961	-70.92825	0.0
HI	Nix's Mate Daybeacon	42.33211	-70.94453	0.0
HI	Long Island Head Light	42.32759	-70.95605	0.0
HI	Graves Light Station	42.36488	-70.86929	0.0
HI	Spencer-Pierce-Little House	42.38937	-70.84154	0.0
HI	Lodge, Henry Cabot, House	42.42133	-70.91061	0.0
HI	Nahant Civic Historic District	42.42408	-70.91374	0.0
HI	Greenlawn Cemetary	42.42698	-70.92765	0.0
HI	Nahant Beach Blvd-Metro Park	42.43652	-70.937	0.0

13 Items

**Table 2: Boston Logan International Airport Block 1
Procedures Cumulative DNL Changes on Historic
Properties
July 31, 2019**

Ref. #	Description	Latitude	Longitude	DNL Change Cumulative
HI	Scituate Light	42.20177	-70.71476	0.0
HI	Minot's Ledge Light	42.26773	-70.76019	0.0
HI	Point Allerton Lifesaving Station	42.30557	-70.8998	0.0
HI	Boston Light	42.32788	-70.89027	0.0
HI	Fort Warren	42.31961	-70.92825	0.0
HI	Nix's Mate Daybeacon	42.33211	-70.94453	0.0
HI	Long Island Head Light	42.32759	-70.95605	0.0
HI	Graves Light Station	42.36488	-70.86929	0.0
HI	Spencer-Pierce-Little House	42.38937	-70.84154	0.0
HI	Lodge, Henry Cabot, House	42.42133	-70.91061	0.0
HI	Nahant Civic Historic District	42.42408	-70.91374	0.0
HI	Greenlawn Cemetary	42.42698	-70.92765	0.0
HI	Nahant Beach Blvd-Metro Park	42.43652	-70.937	0.0

13 Items

Legend


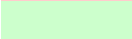
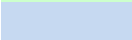
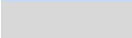
	DNL Increased to Level Equal or Greater than 45.0 dB
	In Visual APE, DNL Decreased to Level Equal or Greater than 45.0 dB
	In Visual APE, DNL Unchanged at More Than 45.0 dB
	In Visual APE, DNL Less Than 45.0 dB

Exhibit 11-3. Land-Use Compatibility* with Yearly Day-Night Average Sound Levels

Land Use	Yearly DNL Sound Level (decibels)					
	<65	65-70	70-75	75-80	80-85	>80
Residential						
Residential, other than mobile homes and transient lodgings	Y	N (1)	N (1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N (1)	N (1)	N (1)	N	N
Public Use						
Schools	Y	N (1)	N (1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y (2)	Y (3)	Y (4)	Y (4)
Parking	Y	Y	Y (2)	Y (3)	Y (4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail – building materials, hardware, and farm equipment	Y	Y	Y (2)	Y (3)	Y (4)	N
Retail trade, general	Y	Y	25	30	N	N
Utilities	Y	Y	Y (2)	Y (3)	Y (4)	N
Communication	Y	Y	25	30	N	N

Land Use	Yearly DNL Sound Level (decibels)					
	<65	65-70	70-75	75-80	80-85	>80
Manufacturing and Production						
Manufacturing, general	Y	Y	Y (2)	Y (3)	Y (4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y (6)	Y (7)	Y (8)	Y (8)	Y (8)
Livestock farming and breeding	Y	Y (6)	Y (7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y (5)	Y (5)	N	N	N
Outdoor music shells, amphitheatres	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

Source: 14 CFR part 150, Appendix A, Table 1

Note: Numbers in parentheses refer to the notes at end of the exhibit.

* The designations contained in this exhibit do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. The FAA determinations under 14 CFR part 150 are not intended to substitute Federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Y = Land use and related structures compatible without restrictions

N = Land use and related structures are not compatible and should be prohibited

25 or 30 = Land use and related structures generally compatible; measures to achieve Noise Level Reduction of 25 or 30 dBA (i.e. a weighted sound level) must be incorporated into design and construction of structure. Noise Level Reduction is the amount of noise reduction in decibels achieved through incorporation of building sound insulation treatments (between outdoor and indoor levels) in the design and construction of a structure (14 CFR § 150.7). Building sound insulation treatments typically consist of acoustical replacement windows and doors.

- (1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor noise level reduction of at least 25 dBA and 30 dBA should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a noise level reduction of 20 dBA, thus, the reduction requirements are often stated as 5, 10 or 15 dBA over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of noise level reduction criteria will not eliminate outdoor noise problems.
- (2) Measures to achieve noise level reduction of 25 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (3) Measures to achieve noise level reduction of 30 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (4) Measures to achieve noise level reduction of 35 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (5) Land use compatible provided special sound reinforcement systems are installed.
- (6) Residential buildings require noise level reduction of 25 dBA.
- (7) Residential buildings require noise level reduction of 30 dBA.
- (8) Residential buildings not permitted.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

July 31, 2019

Consultation Code: 05E1NE00-2019-SLI-2443

Event Code: 05E1NE00-2019-E-06323

Project Name: BOS Block 1 Recommended Procedures

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-2443

Event Code: 05E1NE00-2019-E-06323

Project Name: BOS Block 1 Recommended Procedures

Project Type: TRANSPORTATION

Project Description: The proposed project includes the implementation of the BOS Block 1 procedures which resulted in the formation of a Full Working Group that consists of Industry, Air Traffic Facilities, and Massport/MIT. The BOS BLOCK 1 recommendations are operational feasible. The following Block 1 designed procedures mitigates concerns and addresses FAA procedural requirements, which includes five-letter names of each waypoint:

1. BOS Area Navigation (RNAV) Global Position System (GPS) Runway 33Left - RNAV Standard Terminal Arrival (STAR) (BOS RNAV (GPS) RWY 13L)
2. BOS Required Navigation Performance (RNP) RWY 33L - RNP Approach
3. BLZZER – Standard Instrument Departure (SID)
4. BRUWN - SID
5. BUNNT - RNAV STAR
6. CELTK - SID
7. CGURL - RNAV STAR
8. HYLND - SID
9. LBSTA - SID
10. LUNAA - SID
11. PATSS - SID
12. REVSS - SID
13. SSOXS - SID

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.3628423266411N71.03122325473882W>



Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.
