

RNAV Study Update

Presentation to Belmont Board of Selectmen

December 17, 2018

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Timeline

- June 2013 - 33L RNAV SID procedure implemented
- Sept. 2013 – Belmont joins Logan CAC
- 2014 – work with Legislators, Congresswoman Clark, coalition with Arlington, Cambridge and Watertown. Letters and request for relief from FAA and Massport.
- Jan. 2015 – Motion by Logan CAC to request re-evaluation of 33L RNAV SID
- October 2015 – First meeting of 33L Municipal Working Group in Belmont
- July 2016 – Second meeting of 33L Municipal Working Group at Statehouse
- October 2016 – Massport/FAA/MIT announce RNAV Study
- November 2016 – 33L Municipal Working Group meeting with FAA Deputy Administrator in Burlington
- Feb & November 2017 – Massport RNAV Study Public Meetings (Boston, Mass DOT Transportation Building)
- April 2018 – MCAC Aviation Subcommittee meeting on initial Block 2 analysis.
- October 2018 – Block 2 update and presentation of Dispersion Concepts

33L Municipal Working Group

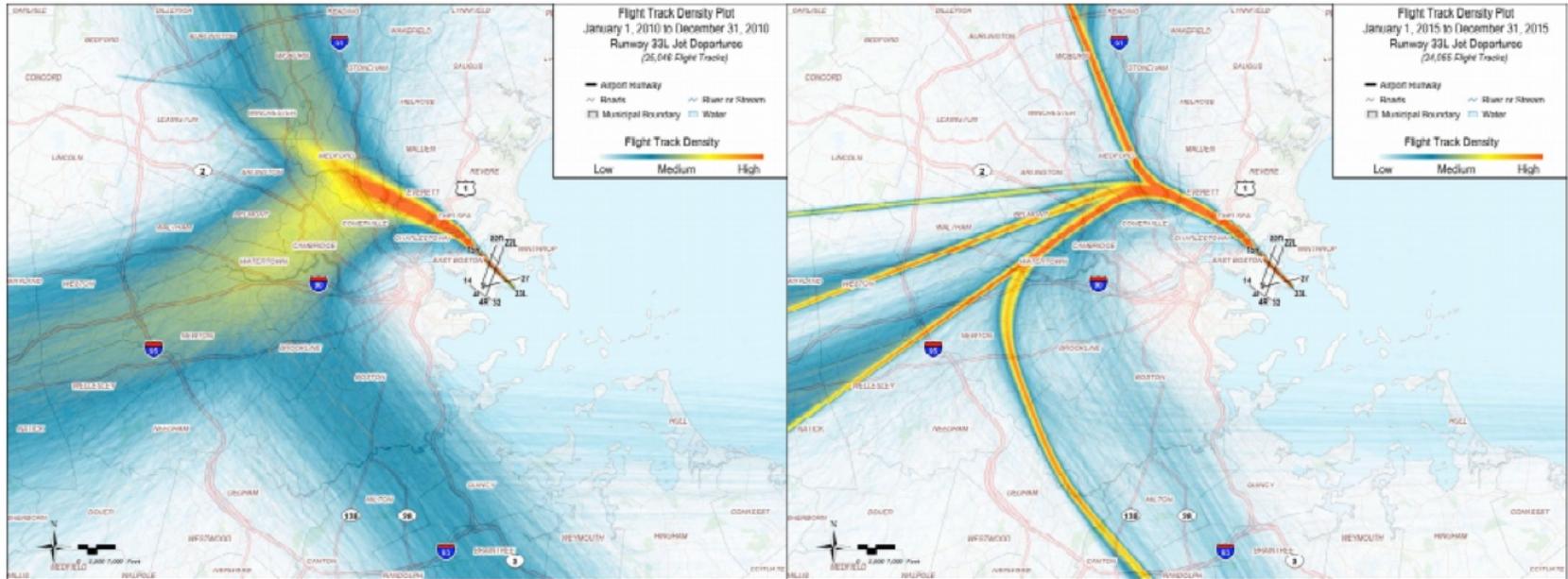
- Initiated by Arlington, Belmont, Cambridge and Watertown Logan CAC Reps. All 33L Logan CAC communities were invited (Medford & Somerville). Both are now participating.
- Objective: to communicate to our Congressional Delegation and Legislators with one voice as communities negatively impacted by the 2013 33L RNAV SID procedure and to ask for help in getting a re-examination of the procedure to reduce the effects of RNAV concentration.
- What we asked for:
 - Decrease in the concentrated noise burden on specific neighborhoods under the 33L flight paths though dispersion akin to that of the pre-RNAV Logan Six procedure.
 - Planes cleared to higher altitudes faster.
- The RNAV Study is evaluating these options

RNAV Study Design

- Block 1: possible procedure modifications that have a clear noise benefit, no equity issues and limited operational/technical barriers. These candidate procedure modifications are looking at waypoint adjustments for several over-harbor procedures as well as speed modulation for departures
- Block 2: possible procedure modifications are focused on both dispersion and alternative flight paths and are considered more complex due to potential operational/technical barriers or equity issues (moving noise impact).

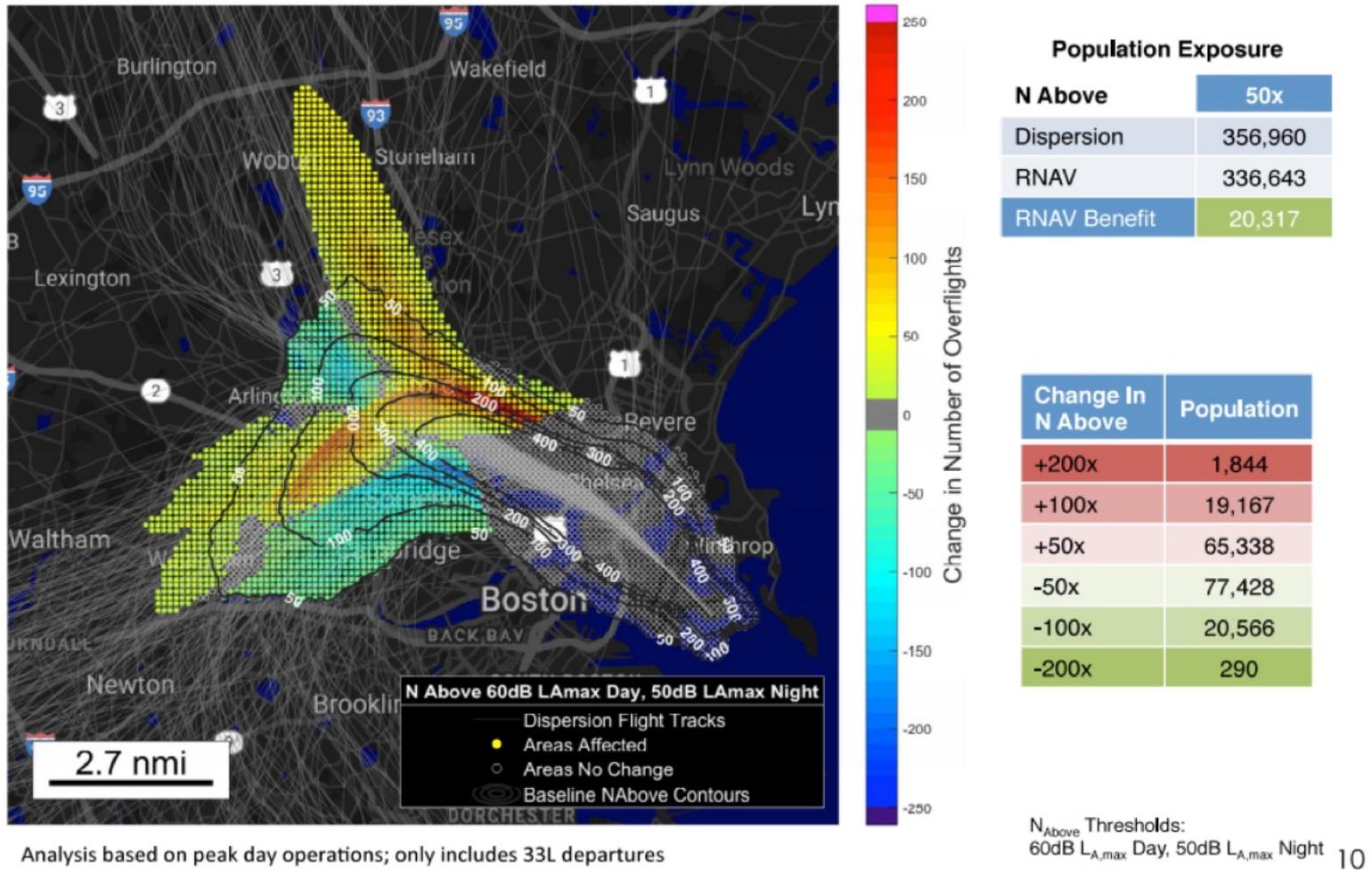
2010

2017



MIT invested significant time and effort to develop an alternative metric that was more appropriate for assessing the impacts of concentration. The result is a new Integrated Exposure Metric that looks at a peak day's use on a specific runway and then calculates Peak Day N_{above} at both 60dB $L_{A,\text{max}}$ and 50dB $L_{A,\text{max}}$. They validated this approach by correlating it to noise complaints and running analysis of pre-RNAV and post-RNAV peak days and settled on using an N threshold of 50 flights.

Effect of RNAV on 33 Departures 2010 to 2017

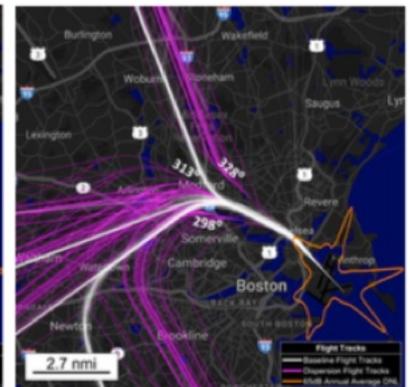
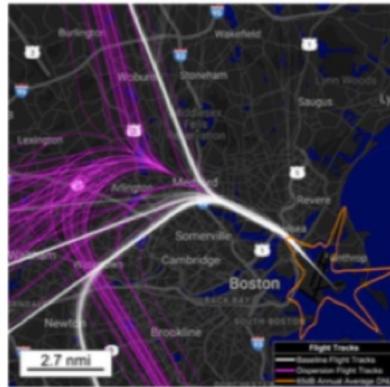
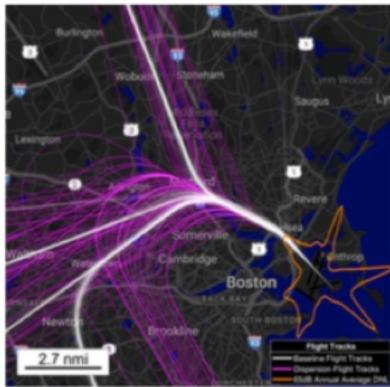


Illustrations from MIT



Dispersion Concepts

33L Departures



Altitude-Based 3000ft

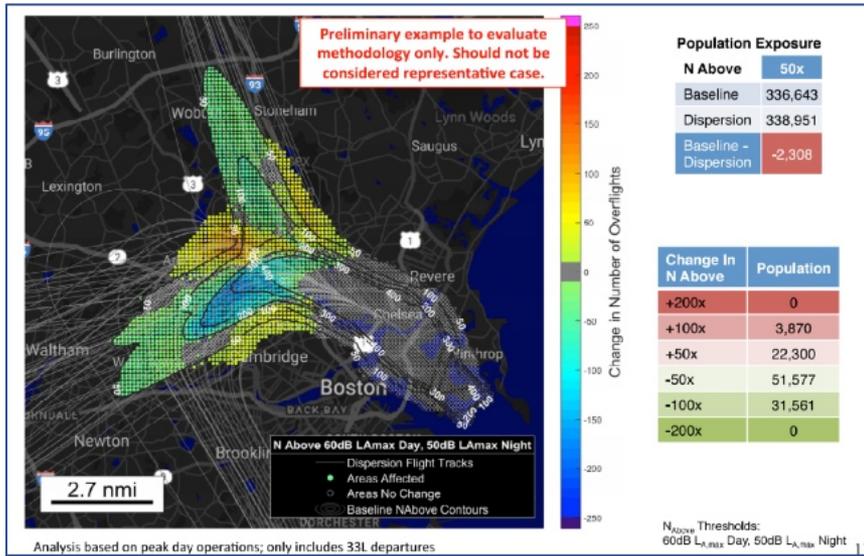
Altitude-Based 4000ft

Controller-Based

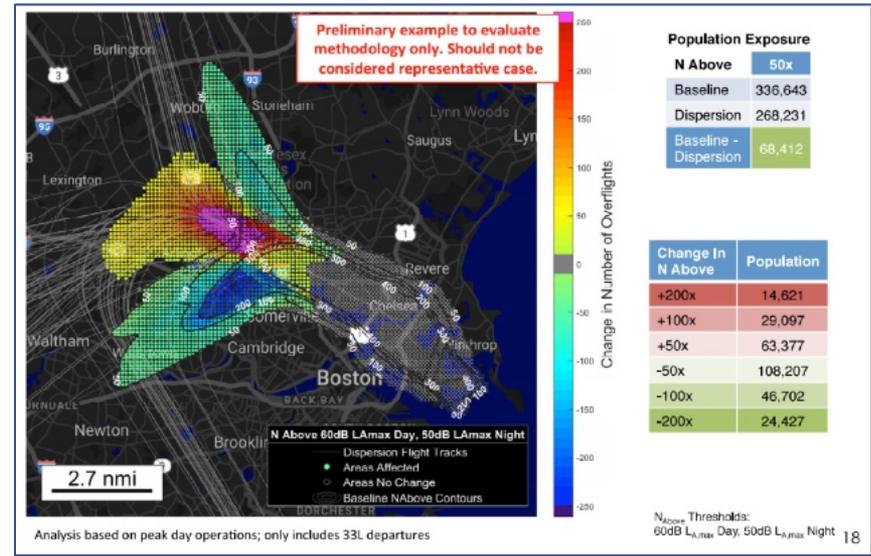
Divergent Headings

Preliminary examples to evaluate methodology only. Should not be considered representative case.

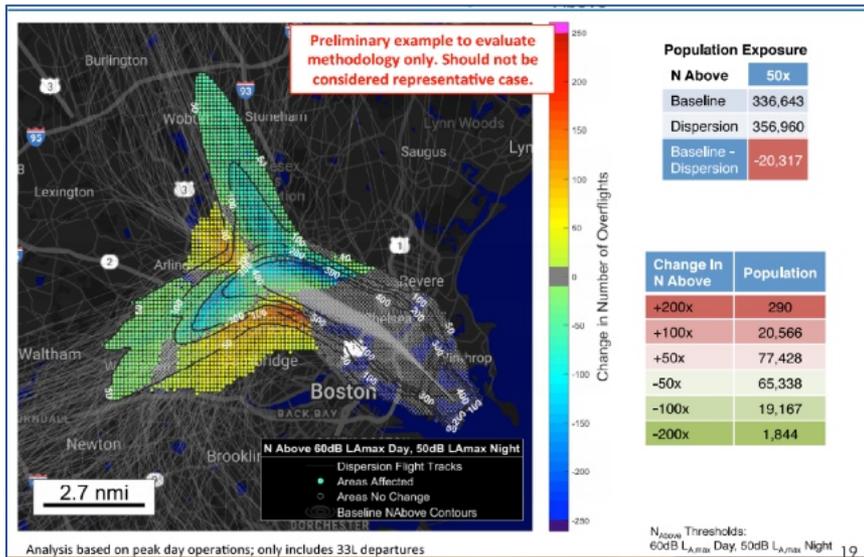
Analysis of Change in N_{above} for Dispersion Concepts



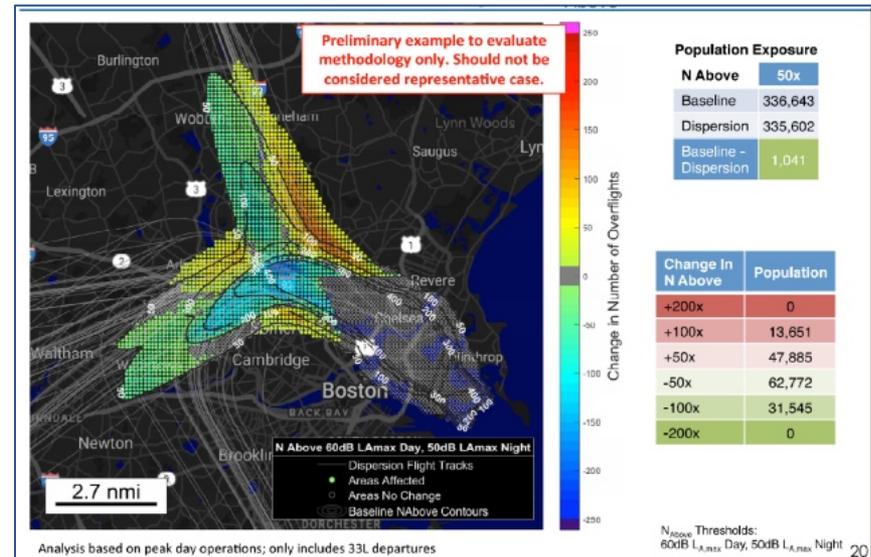
Altitude-Based 3000 ft.



Altitude-Based 4000 ft.



Controller-Based



Divergent Headings

Assessment

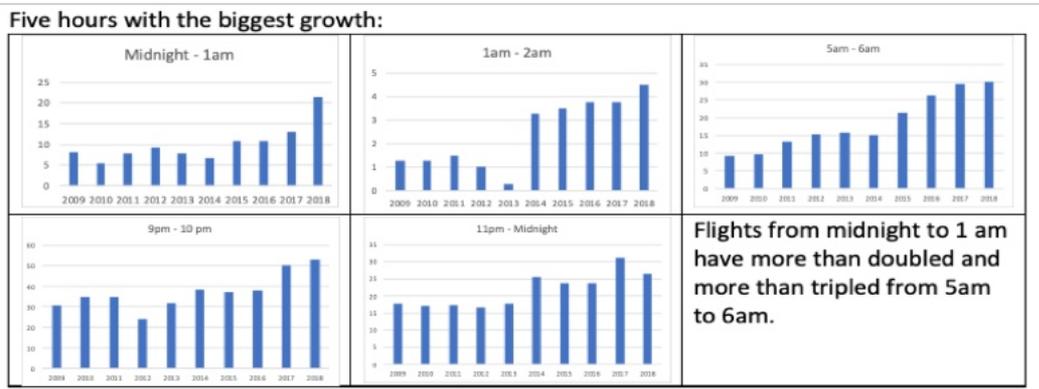
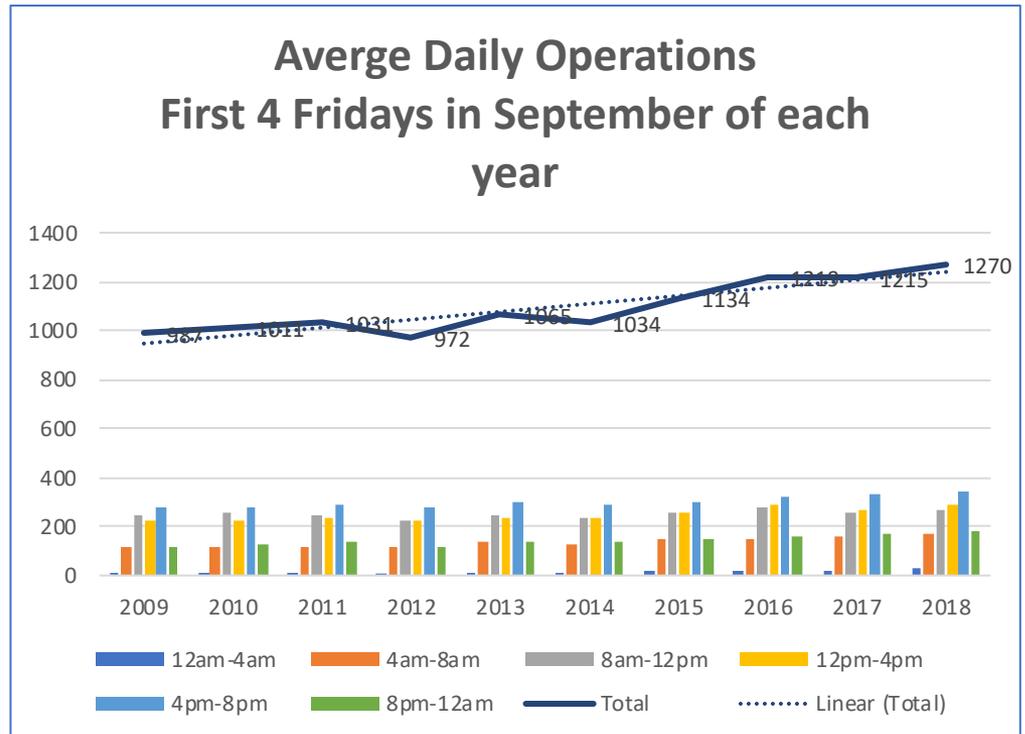
- Results to-date are illustrative of dispersion concepts and analysis is of “examples” – this is not complete or sufficient for community evaluation and dialog.
- Illustrations compare dispersion concepts to current conditions.
- We have been asking for 5+ years for dispersion options that would reduce concentration and mimic the pre-RNAV flight paths and neighborhood impact. A comparison of concepts to pre-RNAV conditions is required and has been requested.
- Analysis needs to be done by community to compare impacts (number of flights & noise by census block or .1 nm) between pre-RNAV, current and dispersion concept.

Process

- ✓ Presentation to MCAC General Membership (10/18/18)
- ✓ Briefing to Congressional Delegation
- ✓ Statehouse briefing to Legislators (12/10/18) – Attended by Rep. Dave Rogers and Senator Brownsberger
- 33L Municipal Working Group has requested a briefing (Rep. Jon Hecht coordinating). Waiting for release of additional analysis.
- Public meeting in Belmont (TBD)
- Summit with 33L communities (TBD)
- Vote by Massport CAC (General Membership meetings in March and June)
- Massport makes official request to FAA and it starts .41 process

Not just RNAV

- The Boston economy is booming and so is Logan.
- We have been doing some preliminary analysis of volume and when planes are flying.
- Many more flights now early morning and late evening causing greater annoyance and sleep disturbance.
- Increased volume often precludes use of overnight noise abatement procedure over the harbor.



Date source: FAA's Operations & Performance website (<https://aspm.faa.gov/>).

Thank You
Questions?