

July 9, 2021

*To: John Hansman, MIT
% Flavio Leo, Massport
and David Carlon, CAC*

*From: Thomas Dougherty
MCAC member, Milton*

INTRODUCTION

This submission follows-up on the June 24, 2021 presentation of MIT's Dr. Hansman and statements at the MCAC General Meeting that members' comments and requests may be provided via the MCAC Chair to Mr. Leo to be forwarded to the MIT Team.

MIT's June 24 Report itself acknowledges that the Town of Milton, one of the communities most heavily impacted RNAV overflights, gets no relief from the June 24 Study recommendations.

Perhaps, Congressman Stephen Lynch's June 24, 2021 letter to the FAA Regional Administrator and the MCAC Chair said it best:

“I believe the FAA’s goal should be to distribute both arrivals and departures at Logan Airport as widely and safely as possible so that no single community should be severely overburdened. Under the current system there are a number of municipalities, especially the Town of Milton, who are overwhelmed by overflights, while other areas remain unaffected. This situation is unhealthy and unfair.” [The full letter is appended hereto.]

In this submission, we reiterate our request that MIT specify means of flightpath dispersion via rotation of one or more added, alternative, 4R RNAV and RNP arrival paths. Set out below are prior requests that remain unanswered.

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- 1. The MOU Purpose and the Inequitable Premise of a No-Action 4R RNAV Proposal***
- 2. Reiteration of Requests for Analyses and Presentation of Overflight Dispersion via One or More Alternative, Rotated 4R Arrival Paths***
- 3. Engagement with FAA, ATC and Airline Representatives***

1. The MOU Purpose and the Inequitable Premise of a No-Action 4R RNAV Proposal

The MOU objective is reduction of overflight noise impacts affecting communities surrounding Boston Logan International Airport that result from FAA's implementation of NexGen precision-based navigation procedures (PBN) including RNAV.

We appreciate the hard work of the MIT team over the past several years, including its visit to Milton to observe the 4R RNAV overflight arrival path in use, and its virtual meeting in July 2020 to discuss its preliminary analyses.

We do not agree with the equity premise of the June 24 presentation which results in a no-change recommendation by MIT for this reason: To state it as clearly as possible, the present 4R RNAV arrival path is deemed equitable because those residents who were and are involuntarily burdened by hundreds of overflights a day being shifted onto them by FAA's RNAV procedure from previously dispersed paths are to continue to be harmed in favor of residents of other locales who were benefitted by the shift to RNAV because those others outnumber those harmed.

Yet harming one group because it constitutes a numeric minority in order to preserve an imposed status quo benefiting a larger group is discriminatory and inequitable

in this instance and bad precedent for overflight analyses nationally.

It is an inappropriate equity premise for assessment of proposed change to central government-imposed baseline conditions. Experts on economic justice from Kenneth Arrow to John Rawls, among others, have established that.

We, therefore, ask that that inapposite premise be put aside for purposes of assessing how to reduce overflight noise impacts that result from FAA's implementation of NexGen precision-based navigation procedures (PBN) including RNAV for Logan 4R arrivals.

2. Reiteration of Requests for Analyses and Presentation of Overflight Dispersion via One or More Alternative, Rotated 4R Arrival Paths

Several related dispersion enabling technical requests that we made following the July 2020 preliminary review have not been addressed.

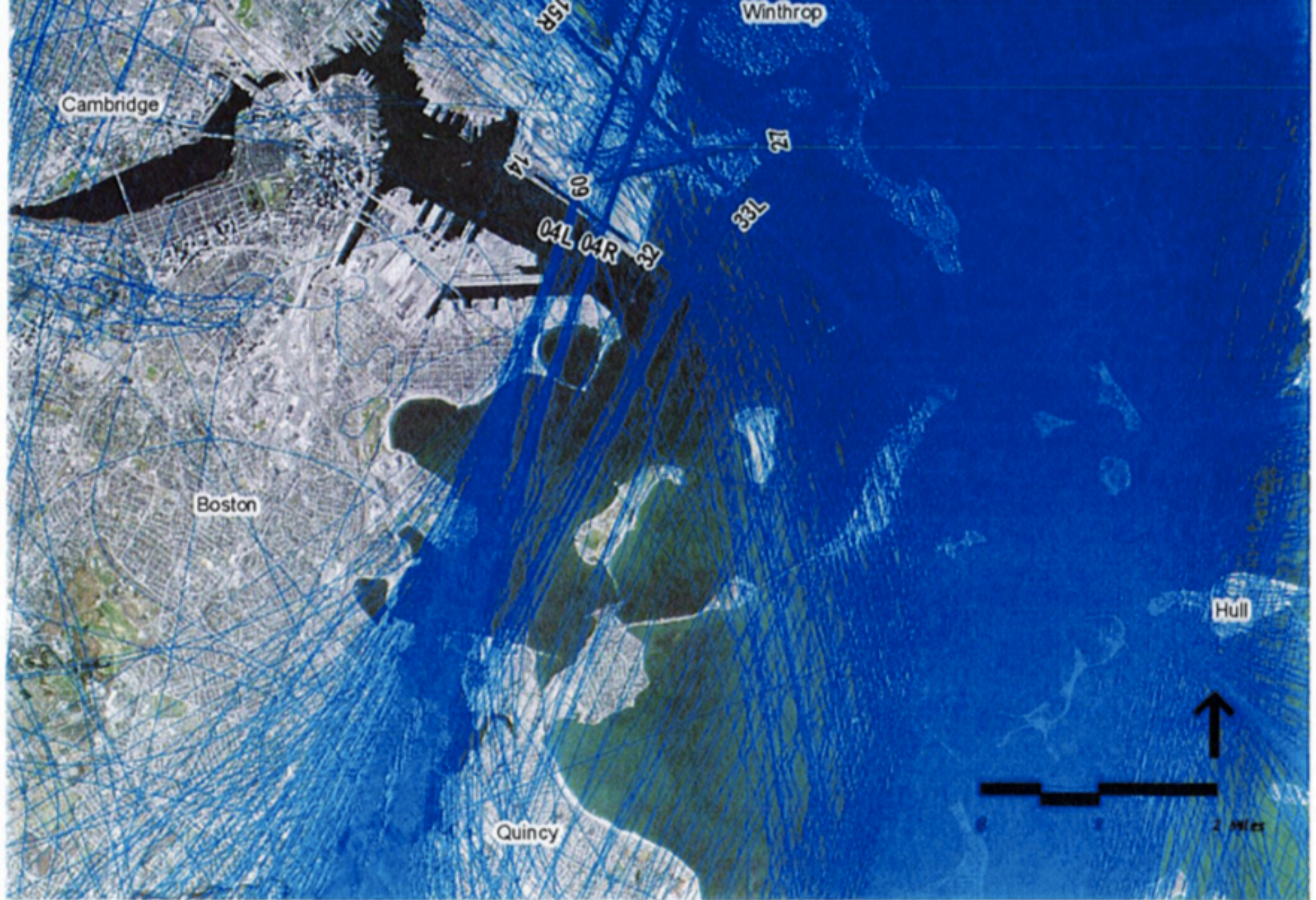
We believe that equitable relief here requires dispersion of 4R arrival paths based upon rotation of their use.

We have pointed out that the slides used in the MIT June 24 Report to illustrate the pre-RNAV 4R arrival flight tracks are imaged at much too far-removed a height to fully

depict the pre-RNAV baseline reality. We previously provided the following slide to the MIT team, and present it here. It was developed at our request by Massport using RealContours Air Carrier Arrival Tracks for October 2009 drawing upon the three Massachusetts Agency sources stated in the slide.

It vividly shows the pre-RNAV flight tracks to the east of Milton over much of Quincy that were collapsed into the RNAV sky-rail over Milton.

Massports' EDR for 2015 itself shows that 78% of Quincy census blocks had a decrease in noise between 2009 and 2015 despite increases in the number of overflights, while 60% of Milton census blocks experienced noise increase.



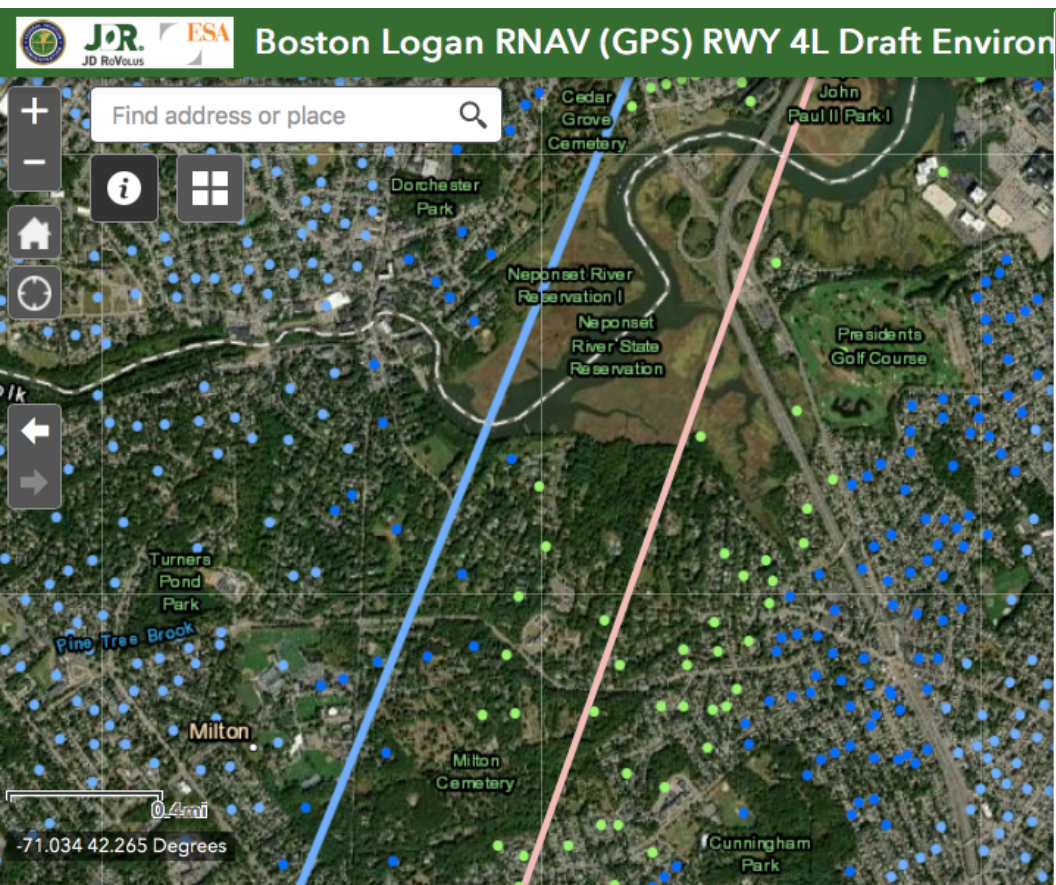
Source: Massport NOMS/ERA Multi-Lat, Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs

**RealContours™ Air Carrier Arrival Tracks
(October 2009)**

Figure 6-8

— Arrival Flight Tracks

Next, we asked MIT to include the FAA's own slide of the location of the 4R (and proposed 4L) RNAV approach paths, which we asked FAA to prepare in connection with its pending Runway 4L Environmental Assessment. Because it was not included in MIT's presentation, we renew that request and present it here. It vividly shows the narrow 4R sky-rail concentrated over Milton, well to the west of even West Quincy.



Layer List

Layers

- ☒ General Study Area (GSA)
- ☒ Boston Logan RNAV (GPS) RWY 4L (Proposed Action)
- ☒ Noise Levels at Population Centroids
- ☐ DOT Act, Section 4(f) Properties - Noise Levels
- ☐ DOT Act, Section 4(f) Properties - Point
- ☐ DOT Act, Section 4(f) Properties - Area
- ☐ Historic and Cultural Resources - Noise Levels
- ☐ Historic and Cultural Resources - Point
- ☐ Historic and Cultural Resources - Area
- ☒ Boston Logan RNAV (GPS) RWY 4R (Existing Procedure)



Based on those realities we ask the following:

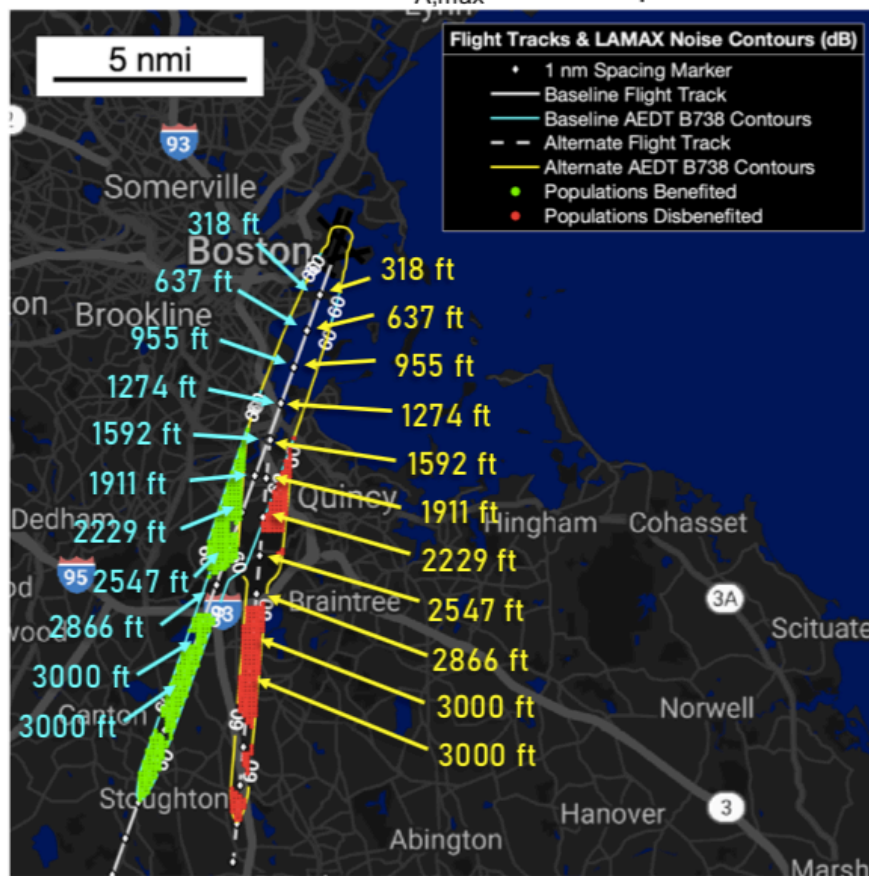
Consider the RNAV 15-degree Final Approach Intercept

MIT's June 24 Report states:

- The procedure evaluated here was set up to “mirror” a Jetblue-proposed RNAV Visual approach into Runway 4L, which intercepts the final approach of Runway 4L at an angle of approximately 20 degrees and approximately 4 NM from the runway. Under RNAV design criteria, this procedure to Runway 4R includes an intercept of the final approach at 4.6 NM, at an angle of 15 degrees which is the maximum angle change allowed at the final approach fix for an RNAV approach. The intercept distance of 4.6 NM is the closest RNAV final intercept point for Runway 4L due to ground obstacles on the approach path, which require a longer final approach under RNAV criteria. Community support for the procedure has remained unclear during the Block 2 process, as it relocates noise to communities southeast of the airport and increases the overall population noise exposure to the $L_{A,MAX}$ 60dB threshold by 5892 as can be seen in Figure 21.

4R RNAV Approach 15° Final Approach Intercept

B737-800 60dB $L_{A,max}$ Noise Exposure



B737-800
Population Exposure ($L_{A,max}$)

	60 dB
Straight In	34,567
RNAV	40,459
Difference	-5,892

4.6 NM final segment
15° turn to final

- Procedure within RNAV criteria.
- Air traffic control concerns with merging with straight-in flight track.

We requested a JetBlue mirrored path, given that its 15-degree intercept would likely be practicable because the JetBlue 4L path was analogous. MIT's comment is that for this path to merge with the existing 4R RNAV path there could be technical difficulties. We are not at all aeronautics experts. But that is not the procedure we asked be analyzed in our follow-up to the April General Meeting. Instead, this RNAV 15-degree Final Approach Intercept should be analyzed as an alternative path used in rotation with the extant RNAV 4R path—not as a path merging into it during a concurrent use mode. Rather, this path is flyable and could be used in rotation with the extant 4R path to provide dispersion over a course of days or weeks by use of the extant 4R RNAV on some days, and this 4R 15-Degree Final Approach Intercept path on other days.

The frequency of rotation could be tested and measured so that the residents under the extant path receive a proportion of flights that takes into account the 5892 higher resident exposure when the 15-degree final approach intercept path is in use. Equal balancing could put that at 14.4% higher—not 100% higher as the present single 4R RNAV imposes on its underlying residents.

That percentage is to be determined. This Study needs to include such analyses to facilitate its determination.

Sharing of the RNAV burdens via rotation is equitable in contrast to the shifting of overflight burdens onto one set of residents.

Moreover, MIT's recommendation for 22L arrivals itself involves a rotation of use of a new RNAV path with the extant 22L approach path. The ATC activity associated with that is considered acceptable it appears. So too should this 4R associated ATC rotation activity be.

In this regard, the 4R and 33L proposals in MIT's June 24 Report are objectionable because they would simply impose sky-rail RNAV overflight burdens onto a new set of residents based on the permanent shift of the extant RNAV to the new one.

*Next, Consider these **RNP 4R Approach Procedures**:*

MIT's RNP Minimal Population from the South (Figure 19)

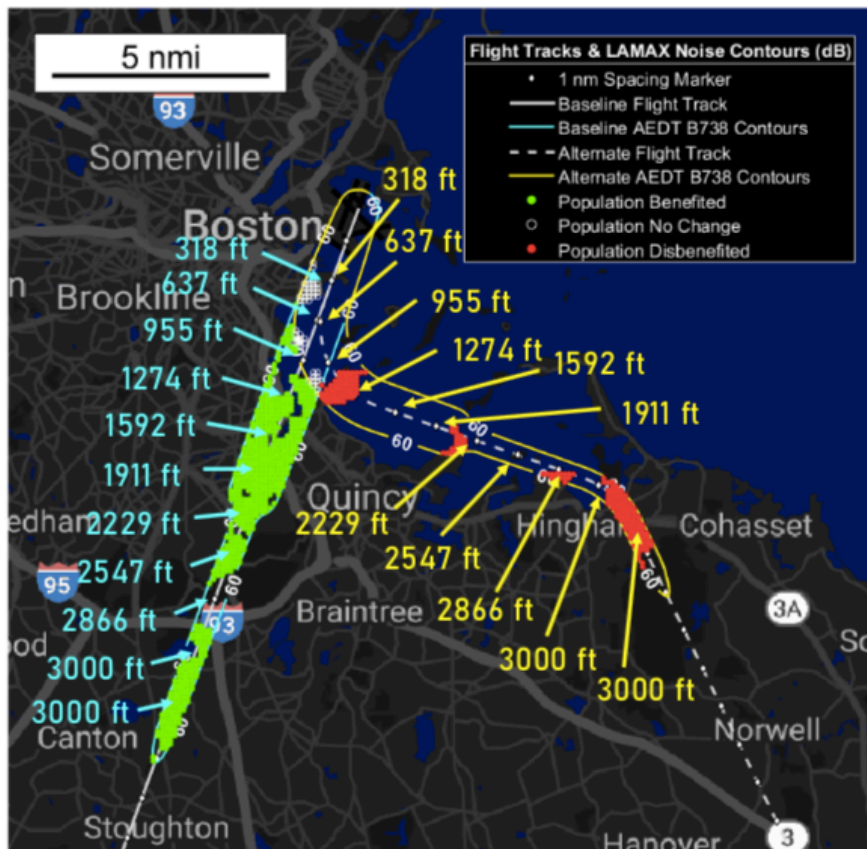
MIT's RNP 24-degree Final Approach Intercept (Figure 23)

MIT's RNP 4-mile Initial Offset (Figure 24)

4R RNP Approach

Minimum Population Exposure from South

B737-800 60dB $L_{A,max}$ Noise Exposure



B737-800
Population Exposure ($L_{A,max}$)

	60 dB
Straight In	32,232
RNP	11,682
Difference	20,550

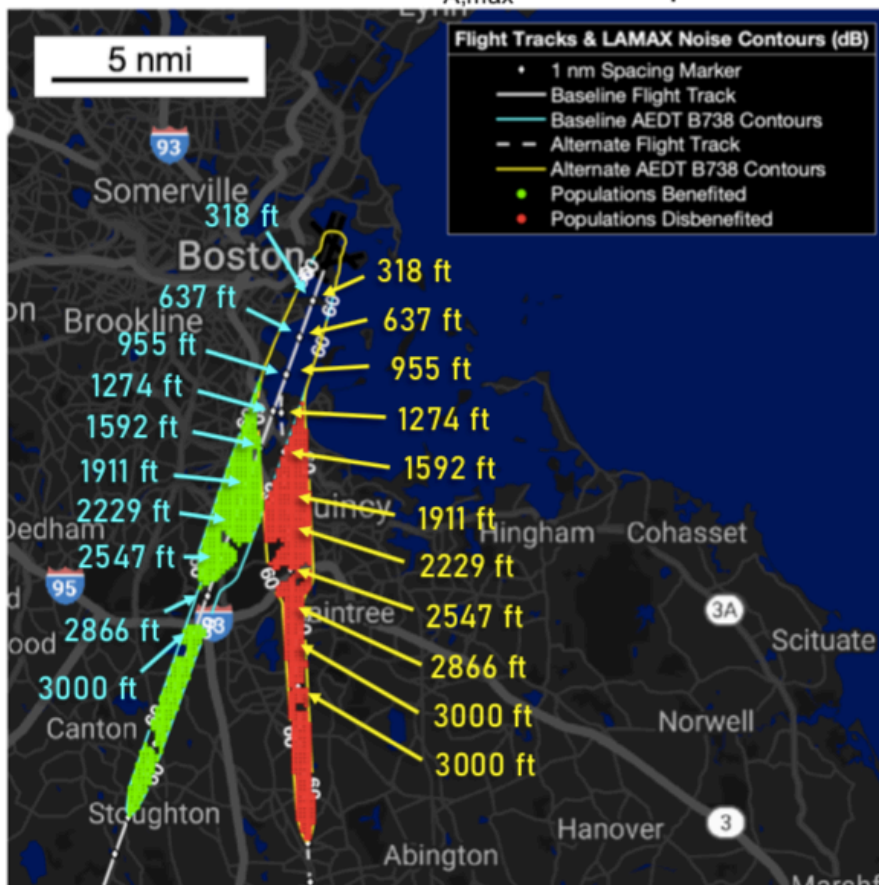
1.5 NM final segment
90° 2 NM radius-to-fix turn
5 NM straight segment
45° 2 NM radius-to-fix turn

- Procedure within RNP criteria.
- Potential airline concerns with short final approach.
- Air traffic control concerns with merging with straight-in flight track.
- Current RNP equipage lower than RNAV equipage.

4R RNP Approach

24° Final Approach Intercept

B737-800 60dB $L_{A,max}$ Noise Exposure



B737-800
Population Exposure ($L_{A,max}$)

	60 dB
Straight In	34,567
RNP	53,271
Difference	-18,704

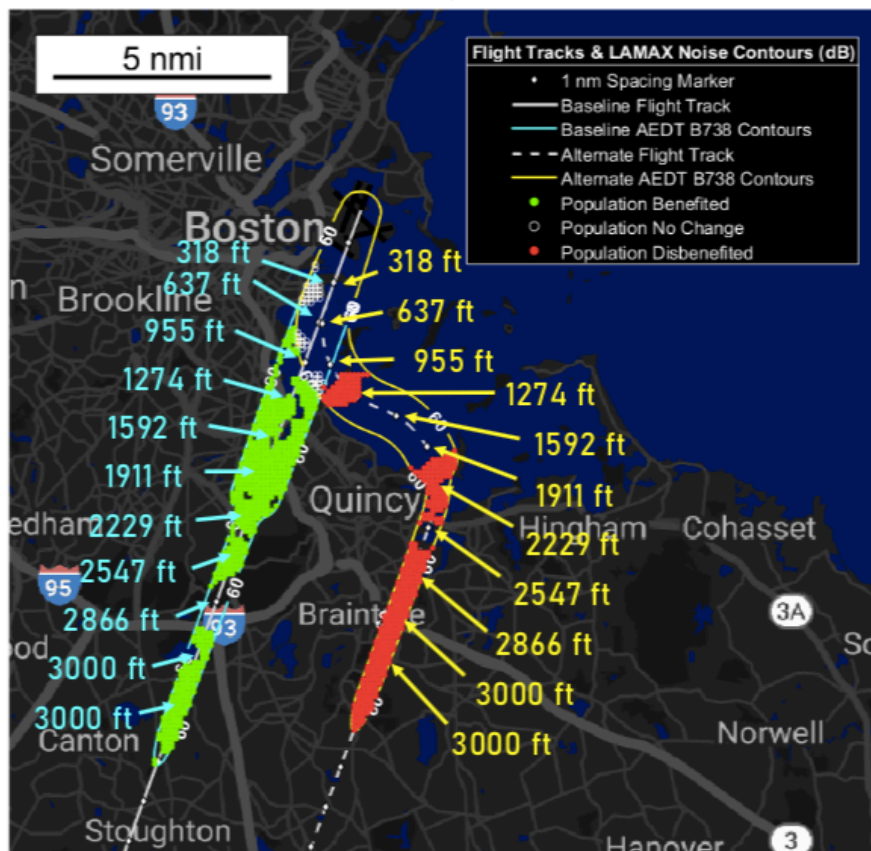
3 NM final segment
24° turn to final

- Procedure within RNP criteria.
- Community support unclear.
- Potential airline concerns with short final approach.
- Air traffic control concerns with merging with straight-in flight track.
- Current RNP equipage lower than RNAV equipage.

4R RNP Approach

4-Mile Initial Offset

B737-800 60dB $L_{A,max}$ Noise Exposure



B737-800
Population Exposure ($L_{A,max}$)

	60dB
Straight In	32,232
RNP	25,106
Difference	7,126

1.5 NM final segment
90° 2 NM radius-to-fix turn
90° 2 NM radius-to-fix turn

- Procedure within RNP criteria.
- Community support unclear.
- Potential airline concerns with short final approach.
- Air traffic control concerns with merging with straight-in flight track.
- Current RNP equipage lower than RNAV equipage.

Again, for each of those procedures, we asked that they be evaluated as complementary to the existing 4R RNAV to be used concurrently with the existing RNAV not in substitution for it. That would disperse overflight burdens.

MIT preliminarily reported in July 2020 that there are concerns about merging and sequencing aircraft on modeled 4R RNP with the existing RNAV. We asked, and we ask again, that MIT address the existing precedents at Reagan National, Atlanta, Chicago, Houston and other airports to show what the percentage of RNAV to RNP use is, what the rotation process is, at what nautical mile from touchdown merging occurs, and what the safety experience is.

MIT's presentation mentioned that JFK has the best analogous merge procedure, but that special pilot training is required. As J.F.K's home state, we in Massachusetts ask for the same training if needed.

To address the merger question, we also asked that MIT consider how the 2017 FAA approved use of a side-step procedure onto 4L for aircraft arriving on the 4R RNAV path during 4R runway reconstruction could be used, if necessary to address merging and sequencing of the RNP paths with the 4R RNAV. In 2017, the side-step was used safely on 4R approaches and stated by FAA to be "a typical procedure used at airports throughout the National Airspace System (NAS) that provides both air traffic controllers and pilots an additional option in landing aircraft (FAA CATEX Announcement March 2017)

A side-step would also allow RNP planes to stabilize earlier. MIT's Figure 19 shows 955 foot altitude near 3 nautical miles from the airport (1000 feet and 3NM being the norm stated by MIT). So that procedure should be modeled.

3. Engagement with FAA, ATC and Airline Representatives

Missing from this MOU process is engagement of the FAA itself and ATC and airline representatives with the communities. MIT has reported its interactions with those entities, but that process over five years has led repeatedly to push-back without progress.

Dispersion via rotation is our request, our goal. To the extent that the RNP Minimum Population procedure is used, 20,500 fewer residents are overflowed that day, and 7000 fewer a day with the RNP 4-mile initial offset. The RNAV mirrored approach, as discussed above, would overfly 5892 more residents in a day of use—but in each case the goal of dispersion can be met by an appropriate degree of shared overflight burden. We are not aeronautic specialists. We are residents who seek the engagement, after five years of MIT work, with the FAA, the air traffic controllers and airline representatives.

We ask MIT for responses to this set of follow-up requests, and we ask for engagement of all four participants, not MIT alone, in reaching an equitable solution here.

Thank you.

Copies to:

Congressman Stephen F. Lynch

Milton Select Board Members

State Senator Walter F. Timilty

State Representative William J Driscoll

STEPHEN F. LYNCH
8TH DISTRICT, MASSACHUSETTS

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Ms. Colleen D'Alessandro, Regional Administrator
New England Region Federal Aviation Administration
1200 District Avenue
Burlington, MA 01803-5299

Mr. David Carlon, Chair Massport Community Advisory Committee
c/o Law Office of Robert Allen, Jr., LLP
300 Washington Street
Brookline, MA 02445

Dear Ms. D'Alessandro and Mr. Carlon,

It is with continued concern that I write regarding the ongoing damaging impact that the implementation of the RNAV/NextGen guidance of aircraft arrivals to and departures from Logan Airport is having on surrounding communities. As the United States Representative for the Massachusetts Eighth District, I represent several municipalities that are severely impacted by the current configuration of the RNAV/NEXTGEN program.

As I have made clear in previous meetings with the FAA and the Quiet Skies Caucus and in my personal address to FAA officials during my visit to FAA headquarters in New Jersey, it remains my objective to achieve a fair and widely distributed pattern of air traffic in and out of Logan Airport. I believe the FAA's goal should be to distribute both arrivals and departures at Logan Airport as widely and safely as possible so that no single community should be severely overburdened. Under the current system there are a number of municipalities, especially the Town of Milton, who are overwhelmed by overflights, while other areas remain unaffected. This situation is unhealthy and unfair.

I have repeatedly urged the FAA to make adjustments to flight patterns in order to maximize the number of "over-the-water" arrivals and departures to avoid the overflight of heavily populated areas. While I am thankful that the FAA and some Carriers have made progress in increasing the number of over-the-water diversions of flights, I believe more can be done.

I fully understand that it is difficult to create a perfect dispersal of flights in and out of Logan Airport, however every effort must be made to reduce the number of flights over heavily burdened municipalities. There remain serious health and safety concerns, especially noise and air pollution that must be addressed.

STEPHEN F. LYNCH
8TH DISTRICT, MASSACHUSETTS

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As a member of the Aviation Subcommittee on the Transportation and Infrastructure Committee and as Vice Chair of the Quiet Skies Caucus, I am working for longer term solutions to this situation nationally. This is a very serious issue, and we need to resolve it. I will continue to work toward solutions that will mitigate the negative impacts on all Logan Airport communities.

Sincerely,



Stephen F. Lynch
Member of Congress
8th Congressional District of Massachusetts