Questions submitted during presentation, via Q&A

	Question	Answer
1	**Are MIT's "Block 2" receommendations available for public review?**	Yes, they are available on the Massport CAC website. http://massportcac.org/library/mit-block-2-procedure-recommendations-boston-logan-06-2021/
2	**Why concentrate the flight paths like that to begin with? What drove the change between 2010 and 2017?**	Answered live
3	**How is the Thresholds determined by address if you dont have someone measuring it?**	Expected noise levels for current and potential procedures are determined using an aircraft noise modeling tool (AEDT). The thresholds used were determined in previous studies which included examining self-reported noise reports from the community and did include address information.
4	**In addition to DNL criteria, what level of weighting does FAA assign to locating waypoints directly over public schools when FAA designs procedures? If a school falls outside the 65DNL footprint then is it treated the same as any other overflown parcel? I ask because TEKKK was sited nearly directly above the large public school complex in Medford. Nearly 2500 students attend the three schools on the parcel directly below TEKKK. Prior to TEKKK, aircraft were on a 314 heading. After TEKKK, that heading changed to 316 and brought EVERY jet directly over the school complex. Please, how do the locations of schools factor into flight path design in the particular case of the 33L SID?**	Each location was given equal weight. FAA procedure design and review includes an environmental checklist under NEPA. For example, the existing RNAV SID for R33L underwent an FAA Environmental Assessment process and included land use analysis, DNL results down to 45-50 DNL which includes the area of Medford as well as extensive public outreach.
5	**about the new approch 22l and 22r why isn't nahant taken into account when you talk about the the planes will go over tha causeway they fly over nahant more often than not NAHNT IS NOT FOR THIS CHANGE!! we have enough noise from runway 4!already is ther any way i can speak about this or is this the only way to communicate thankyou george**	Answered live
6	**The Block 2 report mentioned is 123 pages long and in complex English. If equity is a concern, how are affected residents who don't have the time, English proficiency, and/or education to make sense of what's happening?**	This is a challenge, but the report required detailed analysis and explanation. MIT also provided a comprehensive PowerPoint presentation along with Prof. Hansman briefing and answering questions including this Q&A.
7	**Will you be showing the impact on Nahant?**	The full Block 2 report includes the local impact calculated for every city where a change is observed with the new procedure, which includes Nahant.
8	**Is all these topographical/air studies related to the bigger issue of air noise in the Greater Boston area?**	The scope of the study is only on the modification of RNAV procedures to reduce noise. The most likely areas for potential changes are for standard departure procedures between approximately 1-10 miles from the airport, and arrival procedures between 4-10 miles from the airport. The study is primarily focused on turbojet aircraft only.
9	**What is the reason for not altering the path a bit southward to avoid flying over as much land as possible? Is it a fuel savings decision?**	The location of the approach segment was set as to minimize net exposure to communities on the shoreline as well as Nahant. If the procedure is recommended to the FAA, detailed design could move the approach segment further south if a net benefit is identified with this change.
10	**Why cant you push the flight path further off the coast of Swampscott? How much fuel will this save the Airlines? Why did we not study the impact to public health in greater detail?**	Answered live
11	**I would like clarification on the fuel savings comparing the current 22L procedure vs. the proposed arrival to 22l.**	Answered live
12	**Can you show a similar map for Nahant?**	The full Block 2 report includes the local impact calculated for every city where a change is observed with the new procedure, which includes Nahant. For the sake of time today, not every city will be shown in the presentation.

13	**Is there a plan to invite perspectives on the health implications of the procedural changes from Tufts Environmental Engineering experts? Neelakshi Hudda and John Durant have written extensively on the outdoor and indoor impacts of aviation emissions and concluded that further due dilignce is required on a neighborhood basis.**	The analysis focused on noise and did not directly evaluate emissions.
14	**Dan Skrip, Nahant Town Counsel, is asking if MIT has considered the exacerbation of noise already caused approaches already flying over Nahant: Cape Air's C402, JB E-190s and the occasional heavy?**	The study included consideration of the impact for all jets, including JB E-190s and heavy aircraft. Non-jet aircraft, such as C402s, were not considered, since they generally do not fly RNAV procedures. As a result, non-jet aircraft would not be directly affected by any changes to these RNAV procedures and would continue to fly in a similar way to their current operations.
15	**does this process mov the flights closer to wi throp?jerry falbo**	Re: 22L approach. There is no change in the number of overflights above the 60 dB threshold observed in Winthrop. You can find the local impacts for additional cities and towns in the full MIT Block 2 Report.
16	**Will you please show the difference in what this will mean to Nahant? It appears as though Nahant will be adversely effected moreso than other areas, especially by percentage of people impacted.**	The full Block 2 report includes the local impact calculated for every city where a change is observed with the new procedure, which includes Nahant. For the sake of time today, not every city will be shown in the presentation.
17	**Did your study contimplate the number of impacts that these flights will have on recreational resourse areas like Kings Beach and Nahant Beach?**	While population impact numbers shown are based on the 2010 census data, consideration for impact on recreational resources can be included as part of the community discussion for whether the community will decide to forward these procedures to Massport and the FAA
18	**from Tom Dougherty, MCAC member for Milton** **At Slide page 11 it shows that MIT's evaluation uses a 2017 baseline—which is the existing 4R RNAV noise eposure versus each alternaive. But with Massport's help we provided MIT with the 2009 flight tracks. We ask that the baseline popyulation exposure PRE-RNAV be compared with the exiating RNAV and each alternative. That will show a basis for equitable noise exposure restoration.**	Answered live
19	**Can MIT provide context and decision in selecting N above 50 and the 60dB day and 50dB at night? Was this determined by complaints?**	The N60 metric was chosen based on a previous MIT study that found strong correlation between the location of noise complaints and the number of overflights above the 60 dB noise threshold. A night threshold that is 10 dB lower (i.e. 50 dB) is used to capture the lower noise tolerance at night time.
20	**Will this proposal to Runway 4R have an effect on departures off Runway 9?**	Answered live
21	**I don't understand why Nahant's information can not be presented by Mr. Hansman. Several attendees have asked to see this information.**	The full Block 2 report includes the local impact calculated for every city where a change is observed with the new procedure, which includes Nahant.
22	**How would this RNP procedure affect the ROBUC? Now, there is no vectoring from the ROBUC to the ILS 04R, the RNP would require ATC to vector planes (inconsistantly) to the East before turning back toward Boston, still overflying residential areas.**	Answered live
23	**What studies have been done that show the percentage of a town's population being affected?**	Answered live
24	**Take off over medford, outbound, why cant you alternate a little right, then a little left every half hour so we dont have planes continuing straight over the same route, and noise?**	Procedures that change periodically have been rejected by air traffic control stakeholders due to the possibility of human error arising from the potential assignment of a procedure at the wrong time. This type of error could result in a loss of aircraft separation.
25	**Jerry Falbo Re. the 22l approach move flights closer to any part of winthrop?**	Re: 22L approach. There is no change in the number of overflights above the 60 dB threshold observed in Winthrop. You can find the local impacts for additional cities and towns in the full MIT Block 2 Report.
26	**These Nabove counts seem to be considered for a specific type of aircraft. How were counts determined for the actual aircraft flown into Logan.**	Answered live

27	**Where is the physical address of the MIT Aero Study office located?**	There is no specific MIT Aero Study office. The MIT International Center for Air Transportation is located on the MIT campus.
28	**Did you consider dispersion to the west of 4R?**	Alternatives that would have aircraft approaching 4R from the west were not evaluated in detail in this study due to known intereference with runway 4L approaches and a high population density to the west.
29	**Dr Hansman: We have asked that MIT compare 4R Pre-RNAV peak day population exposure baselien compared to the existing RNAV populatiuon exposure and each alternative' population exposure.**	The 4R arrival flight track data shows a similar geographical distribution of flight tracks (aside from changes in the fleet) for pre-RNAV and post-RNAV. This can be seen when plotting flight tracks for both pre and post RNAV using similar line weights/opacity. As a result, the population impact with the pre-RNAV baseline reflects the population impact with the post-RNAV baseline
30	**What helps us understand that what you are proposing is the "least environmentally impactful" ? I plan to suggest a special meeting for communities that are disaffected and that MASSPORT take time to help the communities understand the public health impact that will result in the additional flights, PRIOR to advancing the recommendations from the MIT report to the CAC or FAA.**	Answered live
31	**What about the Airbus A380, are those creating more noise than others? Is that taken into account**	Larger aircraft do tend to create more noise. This is accounted for by modeling different categories of aircraft, including larger and smaller aircraft.
32	**Could you also point out the City of Everett and Encore Casino location by Boston Harbor?**	The Block 2 Report includes city-by-city data for every city which would experience a change. Impacts to Everett caused by changes to the proposed Runway 33L departure are included and shown in Appendix D.
33	**Is anything being done for Orient Heights (and East Boston) or is this only for towns previously mentioned, like Medford and Swampscott?**	These procedures have a minimum leg length after takeoff and prior to maneuvering, which means that making changes very close-in to the airport are not feasible for the scope of this study
34	**Rumor is that the FAA is not a big fan of moving 22R slightly further north.... why is that?**	Answered live
35	**who are the stakeholders? airlines or communities?**	Answered live
36	**If you move that path, will (and how) will it impact communities further out….20 miles?**	Answered live
37	**What role has the airline industry (non-community) stakeholders play in this study?**	Airlines were operational stakeholders that helped inform the feasibility of procedures from a safety and technical implementation standpoint (e.g. compatibility with navigation computer of aircraft).
38	**Is it true that reducing the pace of flights, restricting rates, would allow these to pass the .41 process? And solve some operator concerns?**	Answered live
39	**Does minimizing population exposure mean that some neighborhoods will be sacrificed to keep the number of individuals impaced lower - basically asserting that it's better to expose 2,000 people to CONSTANT noise and polution than to expose 10,000 to occasional noise and pollution?**	The Block 2 Report shows the change data for the procedures analyzed.
40	**Is there any way to move the early morning flights out further because there are no incoming flights so the 3 mile separation rule would not be relevant. Before COVID the flights started at 5:07 am over hull off 22. They still run at 6 am on and sometimes still they are in the 5 am range**	A procedure that could be used when no traffic was landing on runway 27 was initially considered. Ultimately, there were safety concerns on the part of the operational stakeholders associated with the possibility of that procedure being mistakenly used by pilots or ATC at times when runway 27 was in fact being used for landings.
41	**Is there any way to move the early morning flights out further because there are no incoming flights so the 3 mile separation rule would not be relevant. Before COVID the flights started at 5:07 am over hull off 22. They still run at 6 am on and sometimes still they are in the 5 am range**	A procedure that could be used when no traffic was landing on runway 27 was initially considered. Ultimately, there were safety concerns on the part of the operational stakeholders associated with the possibility of that procedure being mistakenly used by pilots or ATC at times when runway 27 was in fact being used for landings.

42	**Why is there zero traffic between HYLND and REVSS departures? Are these commuities fu;lly excluded from any of the impact of 33L? why? Why is there no traffic to the eastern end of cambridge?**	Answered live
43	**Wouldn't a restriction on the frequency of departures at Logan allow controller-based dispersion? What about adding ATC personnel? Controller-based was favored by many 33L communities affected by RNAV**	Answered live
44	**Please explain in as much detail as you can why a controller-based procedure was used safely for 33L departures for many years but is not an option now.**	Answered live
45	**With this new procedure alomost all of the traffic still goes to TEKKK- which is located at Medford's middle school complex.**	Answered live
46	**what is the nature of the ATC sector in red on slide 45? is it the departure lane for prop-jobs?**	Since aircraft require 3 NMI of separation, and air traffic controllers organize areas of responsibility by areas called sectors, a 1.5 NMI-wide boundary is used to ensure separation between aircraft in different ATC sectors
47	**Which communities are in teh 200 to 250 band of N60 on slide 48?**	Answered live
48	**What causes the increase in flights over West Cambridge shown in yellow/orange on slide 47?**	The shorter path length for the southernmost branches mean that aircraft are slightly lower, which results in some increased noise
49	**And how is proposal 2-D2 anything other than moving concentrated flight paths around?**	Answered live
50	**For those who are currently exposed to 300 overflights a day, what will the number of overflights look like for them with this new procedure?**	The before and after values of N60 (number of overflights above the 60 dB threshold) for specific communities can be found in Appendix D of the Block 2 Final report.
51	**Why can't we just go back to the 2010 distribution? The flights seemed spread enough that no one area had all the flights all the time.**	Answered live
52	**What is the expected reduction in elevation of planes flying over West Cambridge due to the shorter flight path length of the recommended procedure?**	Answered live
53	**Will folks being newly 'disbenefited' be given warning? How and by whom?**	That is the goal of this process.
54	**Sandro Salgado mentioned that aircraft approaching 4R from the west weren't considered partly because of the high density population in the west e.g. Brookline?**	Procedures that would have aircraft approaching runway 4R from the west were not considered in detail due to the known issue that they would conflict with approaches to runway 4L, as well as due to the high population density to the west.
55	**Would this change move the waypoint from over the the Medford school campus?**	The waypoint TEKKK remains used for westbound and northbound aircraft, although southbound aircraft (~48% of departures) would no longer overfly TEKKK.
56	**How will these changes to 33L departures affect the Medford Hillside next to Tufts University?**	The before and after values of N60 (number of overflights above the 60 dB threshold) for specific communities can be found in Appendix D of the Block 2 Final report.
57	**Why would controller-based dispersion be OK before and not now?**	Vector-based procedures are no longer standard at major airports such as BOS.
58	**Could you be more specific on what exactly those safety concerns are that have been consistently referenced?**	Answered live
59	**If controllers and pilots "haven't been doing it", then can't this be resolved with more training? If the cost is the problem, why can't this be passed on to flyers?**	The concern is related to safety, not cost.
60	**Do your noise metrics take account at all of impact of persistent noise, which is totally different than occasional? i.e. many hours in a row? Ditto for time of day/night. In W Somerville we get constant noise past midnight and starts again by 5 a.m sometimes.**	These particular noise metrics shown do not account for persistence, just the number of events that occur over a peak day.
61	**When you say "operational stakeholders" do you mean airlines and their revenue?**	Operational stakeholders include airlines and air traffic control.
62	**What is that red blocked zone to the right over Melrose area and why is it blocked from flight paths**	Answered live

63	**There are often 300 flights a day over our home in Medford. Would this shift decrease that number?**	The change plots can be found in the Block 2 report, or on these slides (which will be posted at the end of the meeting). You can find your home in the plots to see whether this would decrease the number of flights over your home.
64	**Could you please explain why divergent headings is not possible?**	Re: 33L. The concept of divergent headings was to get aircraft going in different directions to fly on divergent trajectories soon after leaving the runway. The initial concept was not feasible to implement because right-hand turns after takeoff violated an airspace used by propeller aircraft. It was, however, possible to add an early left turn for southbound aircraft, which was used as part of the final solution being recommended for 33L.
65	**Is the full report published yet?**	Yes, the full report is available at https://ascent.aero/publication/block-2-procedure-recommendations-for-boston-logan-airport-community-noise-reduction/
66	**MEPA was mentioned as part of the procedure to make recommendations to FAA, to take into consideration environmental impacts. MEPA recently declined to do a review of the Enbridge natural gas compressor in Weymouth, which was recently shut down due to operational concerns and is built over an environmental justice site. MEPA director Tori Kim can be reached at 857-207-2996.**	That will be a NEPA (National Environmental Protection Act) process.
67	**How much lower will flights be at, for example, fresh pond or alewife as a result of this proposed change?**	Aircraft on the southern procedure branches are expected to be approximately 270 ft lower.
68	**Why can't the safety concerns be addressed for controller-based? It worked through 2013.**	Vector-based procedures are no longer standard at major airports such as BOS.
69	**Can Mr. Hansmen return to the slides that impact Swampscott and Nahant, before closing this session? There seems to be a need to ask these kind of specific questions related to that presentation.**	Answered live
70	**Why is it safe for planes to fly almost the exact same flight path over Medford when the wind is from the North, Northwest, West, Westnortwest? Shouldn't the flight path have to change with the wind direction?**	The wind only determines the runway configuration at the airport (i.e. which runways are used for takeoffs and landings). Aircraft can safely fly in any direction once airborne.
71	**Are most of the revenue-earning "stakeholders" mostly complaining because these other options for 33L are simply inconvenient or require more work, training, or fuel costs, or a departure frequency reduction?**	The concern is related to safety, not cost.
72	**Why is the ATC Sector boundary where it is, and can it be moved?**	Answered live
73	**Wouldn't limiting frequency of departures -- reducing it -- solve frequency congestion and aircraft dispatch concerns?**	Not necessarily.
74	**Wouldn't limiting frequency of departures also reduce the "risk of errors" cited by stakeholder objection to controller-based dispersion for R27?**	Answered live
75	**Are we looking to change arrival red area to more quality disperse. If not why**	Answered live
76	**Did the developement of the South Boston Warerfront have anything to do with changes regarding the Runway 27 departure heading?**	Answered live
77	**Can you expand your study map to show communities 20 miles from Logan? Communities that did not have air traffic that now will? Will these communities be notified? They are not part of MCAC.**	Answered live
78	**Can you specify who you refer to when you say “stakeholder opposition”?**	Operational stakeholders included air traffic control, airlines, and FAA safety representatives.
79	**Why is Brookline excluded from any air traffic?**	With regard to 27 departures, there is a 1996 environmental Record of Decision that defines a corridor within which a certain percentage of aircraft must be. This can be seen on Slide 55
80	**If that is the criteria, Point Shirley in Winthrop should be an addended to the study.**	Unclear what criteria are being referred to.

81	**Question Concerning 22L/R - The current flight path already appears to be "slightly" north of the Hull peninsula when reviewing these charts. Still, planes consistently fly directly over population centers like Allerton Hill. How much farther off the coast could residents expect if your recommended change is accepted? Will the aircraft actually end up over the water, even if there is normal variance in each aircraft's approach?**	We expect the flights to be about 500 meters farther north. That's the distance the flight track is moved, at the tip of Hull. As you noted, there does exist some variance in the actual track flown due to wind and individual aircraft behavior
82	**Will you measure Db levels under new procedures? And did you say 60Db for one flight? Assuming that's 50Db for night…correct?** **Trolley dilemma and we're the one to save the 5.**	The threshold noise level in the N60 criteria is 60 dB Lmax during the day, and 50 dB Lmax during the night.
83	**Please see my 6:28 pm follow-up question. That population exposure comparison is important for assessing relative burdens pre-RNAV, under the existing 4R RNAV and under each of the MIT fesible alternatives.**	I think there's an answer to your 6:28 question. Please feel free to submit another question though, if that response didn't answer your question
84	**Why can't pilots be trained on non-RNAV procedures, if this is needed to implement a controller-based dispersion system?**	The issue with implementing a controller-based system is actually with air traffic controller training and workload, rather than pilots
85	**In addition to changing flight paths, are you also changing how the aircraft fly. Specifically, rapid descents and speed drops at the 20miles mark then miles of level off?** **Also, altitudes lowered at 20 miles out in order to accommodate the miles of level off?** **Assuming the answer is YES, are you measuring the Db levels for each flight in the communities that prior did NOT have jets overhead all night.**	The procedures identified assume standard flight trajectories and did not include rapid descents and speed drops.
86	**Sorry- my question is why is there no traffic over Brookline newton? Sorry if I missed that !**	This question was answered by Dr. Hansman during the meeting. The graphics presented capture only the information for a specific procedure and runway. Other runways and procedures are not presented and don't capture the full view of overflight and communities.
87	**Why are arrivals on 15R and 33L (same runway differant approach ends) flying over Nahant on their entering their downwind approach to both runways when Nahant is surrounded by watr and improvements could be made without resulting in any impact to any other community?**	Answered live
88	**But you can change things in other areas? Why not winthrop?**	Winthrop is so close to the runway threshold that flight paths cannot be modified due to safety reasons.
89	**How would changes to departures on 27 manifest in Roslindale?**	The before and after values of N60 (number of overflights above the 60 dB threshold) for specific communities can be found in Appendix E of the Block 2 Final report.
90	**How many flights would need to fly over, say Braintree, in order to reach 65Db?**	Reaching the db threshold (such as 60 db or 65 db) is dependent on the aircraft type, thrust, and altitude, among other factors. For braintree, off the top of my head, you may experience 60 dB or more with wide-body aircraft. And the number of events over 60 dB (or a different threshold) depends on the frequency of these flights (numbers for the peak day of operations can be found in the Block 2 report)
91	**What will be the altitude of flights with 22L over Nahant? And how many flights will be flying over Nahant day and night?**	Answered live
92	**this is a naive question, but isn't current computer technology sufficent to create a dispersal pattern comparable to what controllers managed before RNAV?**	While this is theoretically possible with current technology, RNAV technology is limited to fairly narrow procedures, because of how it is designed to be used. The use of dispersed tracks would require a new concept of operations (for example, ensuring that dispersing two differnet procedures will not cause a conflict between two aircraft in a tight aispace). Hope that helps with the question
93	**What altitudes are required for aircraft 20 miles from runway? That's direct when the plane actually flies on a curve.**	Aircraft are typically 6000 feet or above when 20 miles from runway.

94	**Can you please explain how population exposure is measured? Does it take into account the number of times individuals are impacted on a daily basis by flights? Some homes have 300+ flights/day on high use days while others have almost none. It seems like numbers of exposure would be a more humane way to measure impact on quality of life.**	There are two metrics that we use to evaluate noise impacts on the population. The population exposure numbers measure the total population exposed to a "frequent" number of flights (> 50 events on a peak day). This, as you have noted, does not differentiate between someone with 51 and 300 flights. However, the change in N60 metric (dispersion plots) show the number of flights decreased based on a proposed procedure. Additionally, the block 2 report shows the distribution of people impacted by different numbers of flights (i.e. breaks down number of people impacted by 50, or 200, 250, 300, etc. flights)
95	**1. Do your noise metrics take account at all of impact of persistent noise, which is totally different than occasional? i.e. many hours in a row? Ditto for time of day/night. In W Somerville we get constant noise past midnight and starts again by 5 a.m sometimes.** **2. Re 33L - am I understnanding correctly that there would be a big decrease in people experiencing the most severe burden, along with a more moderate increase in noise for people newly experiencing noise? Please elaborate.**	1. These metrics do not directly account the time span over which the noise events occur, unfortunately. There may be some correlation with the N60 metric, as higher counts are likely to happen persistently, rather than occasionally. 2. The areas of greatest decrease in overflights for 33L do happen in the areas currently impacted by 300 or 400 flights (see dark blue areas on slide 47), while the largest increases in events happen in the areas experiencing 100-250 events right now (dark red areas)
96	**Any change to move more aircraft over the Nahant causeway will result in more aircraft actually flying over Nahant. They do now on a regular basis on departures when they're supposed to fly over the causeway. Why aren't Nahant residents taken into consideration when evaluating new routes? Why not make the 4R departure waypoint a FLYOVER instead of a FLYBY waypoint? This would help keep aircraft from flying over Nahant.**	Keeping trajectories over the causeway allow for the lowest total population exposure, taking both Nahant and shoreline communities into consideration. A flyover waypoint on departure from 4R would cause additional noise to densely populated areas on the shoreline and likely have a net negative impact.
97	**2019 data shows that 25% of arrivals used 22L across 24 hours. This would mean that nearly 14,000 flights will fly over Swampscott, Nahant and Lynn region if the new procedure is implemented. How does this impact noise in the region?**	Slide 15 of the Public Hearing presentation shows the expected change in impact for the peak day or worst case day scenario. This may give you a first order idea of the impact on the region
98	**If RNAV is "just GPS" then why not far more waypoints and disperse the flights this way?**	The system (from computer memory to pilot workload) is currently not able to handle such large amounts of different routes. Additionally there is the challenge of ensuring that aircraft remain separated. While this may be possible, there have been concerns brought up about ATC regarding workload (and thereby safety)
99	**Why is Swampscott disproportionately negatively impacted?**	The proposed procedure is designed to place aircraft over the causeway and not fly over Swampscott. Due to sideline noise, the the coastal area of Swampscott will receive some incremental noise from certain aircraft types and that is captured in the analysis. This area of Swampscott is on the water and closer to the overwater flight path than other communities.
100	**Did you consider fuel consumption in any of your reccomendation?**	Fuel consumption calculations were not part of the primary analysis for arriving at the recommended procedure for each runway. In the case of the proposed approach to runway 22L, expected fuel burn differences were computed after the design was completed in order to verify that the procedure would not require a significant amount of additional fuel burn.
101	**Do operational stakeholders do the dot 41 process with the noise analysis presented here?**	Yes.
102	**Can you explain why use of GPS, seemingly inevitably, leads to flightpath hyper-concentration?**	GPS allows the aircraft to determine its position much more precisely than previous navigation technology did. In a terminal airspace such as Boston's, a commercial aircraft equipped with GPS/RNAV has a rough position accuracy of 0.3 NM (with 95% confidence). This high level of precision ultimately enables aircraft to retrace repeatable trajectories when flying published flight procedures.

103	**The Nahant causeway is 1.5 miles why can't flights go over the center rather than hugging the coast**	The location of the approach segment was set as to minimize net exposure to communities on the shoreline as well as Nahant. If the procedure is recommended to the FAA, detailed design could move the approach segment further south if a net benefit is identified with this change.
104	**Asking agian……What will be the altitude of flights with 22L over Nahant? And specifically….how many flights will be flying over Nahant day and night?**	Altitude over the Nahant Causeway is expected to be 1600 ft. The proposed procedure would be usable only at times when RWY 22L is the only landing runway (i.e. RWY 27 is not being used). This is due to airspace constraints. In 2019, this allowable runway configuration was used at Logan for 25% of all arrivals over the year.
105	**what would happen if GPS were unavailable for a prolonged period? would commercial air travel cease for the entirety of that period?**	Aircraft would revert to ground-based navigation and radar vectors.
106	**Specific for arrivals to 33, have how planes fly (not only where) changed? I believe the answer is YES and is it in testing or how it is going to be going forward. For example, 20 miles out, less than 4000' altitudes, 2000fpm descent rates, 10-30mph speed drops. Trifecta of noise followed by 10-11miles of level off.**	Block 1 arrival to 33L has not been implemented at this time.
107	**Clarifying my earlier question - when operational stakeholders propose changes or new procedures, do they do the dot 41 process with noise analysis presented today?**	Yes.
108	**nahant is much closer to the airport planes are lower much noiser than the cities farther away why can,t they stay the same NAHANT HAS ENOUGH NOISE FROM 4R ,15L 33L just because we have a small populatulation it's not fair to dump more NOISE AND POLUTION ON NAHANT**	Using the existing procedure is one option.
109	**What is the incrimental increase in air traffic safety due to implementation of RNAV?**	It is difficult to separate RNAV impacts, but the overall level of safety has increased since RNAV implementation.
110	**Could you please reexplain why flights can't be directed over the ocean and not over residential land.**	The location of the approach segment was set as to minimize net exposure to communities on the shoreline as well as Nahant. If the procedure is recommended to the FAA, detailed design could move the approach segment further south if a net benefit is identified with this change.
111	**PLease answer part two of my question….how many flights each day and night will now fly over Nahant?**	The proposed procedure would be usable only at times when RWY 22L is the only landing runway (i.e. RWY 27 is not being used). This is due to airspace constraints. In 2019, this allowable runway configuration was used at Logan for 25% of all arrivals over the year.
112	**Thanks for the explanation of sector boundaries, but the second part of my question got lost. This seems like an overconstrained problem. Since the presence of the 1.5nm buffer so close to TEKKK focuses traffic in that zone, why aren't we considering adjusting the sector boundaries to make this problem slightly less constrained?**	Restructuring the airspace sectors was beyond the scope of this study.
113	**Please clarify impact on Somerville re: 33L. Does recommended proposal mean major reduction for people who are most severely burdened now, along with increase in number of people who experience much more moderate noise? Or does it just shift severe noise?**	Answered live
114	**Re: controller-based navigation, why those safety concerns after 2010? What changed?**	Vector-based procedures are no longer standard at major airports such as BOS.
115	**22L question: Please explain to me how flights would fly over Swampscott if the new recommendation were to be implemented ? The Nahant causeway is 1.5 miles long.. what part of Swampscott would be affected?**	The southern parts of Swampscott are affected by the 50 dB night contour. During the day, there is minimal impact from the 60 dB contour.
116	**Can you go into detail on what "significant safety concerns" actually means? In my industry, there are multiple ways to relieve safety concerns.**	Any issue raised by an operational stakeholder is considered significant.

117	**What cost benefit analysis was performed during development of the RNAV Procedures and did that analysis include the cost to residents living under the concentrated flight paths?**	Answered live
118	**Dr. Hansman. I appreciate that you and your team recognize that it is the number of aviation noise events that negatively affect people, something that DNL does not capture for people near and far from Logan. The Neighborhood Environment Survey Study results show that DNL is not a valid metric for assessing aviation noise. What, if anything, have or will you do to cause aviation noise policy change? Same question for Massport officials.**	Answered live
119	**Question Concerning 22R Departures - The current flight path already appears to be "slightly" north of the Hull peninsula when reviewing these charts. Still, planes consistently fly directly over population centers like Allerton Hill. How much farther off the coast could residents expect if your recommended change is accepted? Will the aircraft actually end up over the water, even if there is normal variance in each aircraft's approach?**	Answered live
120	**Please answer my question regarding altitudes 20 miles from runway…further if you call curve in flight path. Why are altitudes under 4000' 20 miles from the runway followed by miles of level off. Was how they arrive changed at the same time as the flight path?**	Arriving aircraft are typically 'vectored' by air traffic controllers through radio instructions as their flight paths merge onto the final approach (a long straight line that extends from the runway). This vectoring procedure for merging aircraft on the final approach has not changed with the implementation of RNAV. It is during this time that controllers may require aircraft to maintain particular altitudes in order to ensure separation between departing and arriving aircraft, as well as between aircraft that are arriving from different directions.
121	**Why can't RNAV technology be used to disperse flights? Can you give any specific reasons why RNAV only appears to be used for concentrated flight path procedures?**	Answered live
122	**Can you pLease answer part two of my question….how many flights each day and night will now fly over Nahant with 22L**	The proposed procedure would be usable only at times when RWY 22L is the only landing runway (i.e. RWY 27 is not being used). This is due to airspace constraints. In 2019, this allowable runway configuration was used at Logan for 25% of all arrivals over the year.
123	**Gina Cassetta (The 02152 Initiative) (You): 22L question: Please explain to me how flights would fly over Swampscott if the new recommendation were to be implemented ? The Nahant causeway is 1.5 miles long.. what part of Swampscott would be affected?**	The southern parts of Swampscott are affected by the 50 dB night contour. During the day, there is minimal impact from the 60 dB contour.
124	**Do the needs of the many really mean MORE..? I feel Nahant is being unfairly unrepresented.**	Nahant is represented on the MCAC.
125	**Why are noise level metric thresholds so high? Noise below the levels you mention are very detrimental.**	Answered live
126	**Is MIT conducting new aerial surveys over Massachusetts and will the data collected influence flight path dispersion?**	No.
127	**When will the FMS technology and fleet be capable of dynamic routing (AI, plane-2-plane communication) and is ths ultimately the answer that will reporduct prior dispersion?**	Answered live
128	**OK -- so if the "issue with implementing a controller-based system is actually with ATC training and workload" -- again the questions stands: why can't FAA/Massport add ATC's? And training?**	Answered live
129	**Why are there no flights over Newton and Brookline?**	This question was answered by Dr. Hansman during the meeting. The graphics presented capture only the information for a specific procedure and runway. Other runways and procedures are not presented and don't capture the full view of overflight and communities.

130	**Can you please explain how population exposure is measured? Does it take into account the number of times individuals are impacted on a daily basis by flights? Some homes have 300+ flights/day on high use days - while others have almost none. It seems like numbers of exposure would be a more humane way to measure impact on quality of life.**	Answered live
131	**When you mention increased risk, what is the risk increase? Air travel is very safe and has been for many years. What is the incremental increase in risk to using ATC based proceudres and the reduction in risk and increase in safety using RNAV Procedures?**	Answered live
132	**Why are the stakeholders not concerned with the safety risk to the people under the concentrated flight paths? We are being exposed to concentrated noise and pollution.**	Operational safety related to aircraft accidents is considered separately from environmental concerns.
133	**Is the percentage of visual approaches increasing/decreasing with RNAV availability? Also, is it common to fly a visual approach that still follows an instrument approach waypoints?**	Air traffic control will typically issue visual approaches when weather conditions permit. There has been no change to this operating practice with the introduction of RNAV. From an airline operations standpoint, pilots generally have an instrument approach loaded onto the aircraft's flight management computer even when flying a visual approach due to the improved situational awareness this provides.
134	**Why are there no flights over Eastern Cambridge, Harvard Sq area, Newton and Brookline?**	Answered live
135	**Prof. Hansman just mentioned they realized "early that averaging noise over a year makes no sense". Does that mean he can say that DNL makes no sense as a noise metric for assessing impact on population living under RNAV paths? Thanks.**	Answered live
136	**with the rvav system why can't we get the planes to fly over the causeway instead over the land in nahant call noise abbetment office their response is always planes on course thanhyou thiis will be an issue if 22l 22r approch goes into effect thank you george**	Answered live
137	**you simply won't answer questions directly...why is that? why can 33L depart to the south to eastern cambrige or brookline? there is no concurrent use/other runways...but they are not flown over?**	Procedural limitation is related to runway 27 departures, which is often used simultaneously with 33 departures.
138	**2019 data shows that 25% of arrivals used 22L (full day). This would mean that nearly 14,000 flights would fly over Swampscott, Nahant and Lynn region if the new procedure is implemented. What are the projected noise implications to the region?**	25% of arrivals are eligible for the procedure, but use will likely be lower due to operational ATC decisions.
139	**Decrease in risk and increase in safety is used as a justification for implementation of RNAV Procedures. However, as just described, the incrimental increase in safety is very very small. How is this tiny incrimental increase in safty weighed anainst the cost in quality of life due to the repetative noise exposures of the impacted residents?**	Increasing aviation safety is a major objective.
140	**Sandro Salug…. - thank you for responding. I understand vectoring. In Sept/Oct 2018, I believe when the block 1 for 33/Hull went into effect, the flight path shifted south and altitudes are below 4000' now. Why? Was that also trying to reduce burden over Hull?**	No Block 1 procedure has been implemented in operations yet. The Runway 33L approach that was recommended in Block 1 is still in the process of being implemented.
141	**Could you share that slide again that summarized Block 1 recommendation status?**	Slides can be found at: https://www.dropbox.com/s/pnmidy4ucqk6p16/September%202021%20Block%202%20Public%20Hearing%20%28For%20Release%29.pdf?dl=0
142	**Can you lower the noise thresholds used in your studies for the Boston area?**	The noise thresholds used were based on analysis of data from Boston/London/Charlotte/Minneapolis, and showed a strong correlation with noise complaints recorded at those locations.
143	**60 dB noise level is equal to a lawn mower. Are you saying that Nahant will have 100 lawn mower events each day and night?**	Answered live

144	**Are you telling me that nothing has changed in flight path 20 miles from runway end due to the block 1 implementation? Are you also saying that nothing has changed for arrival procedures (alt, speed, descent rate) around 20 miles (Hanson) from Logan for 33 arrivals?**	Block 1 recommended procedures have not yet been implemented, so any changes observed in current operations are not a result of those procedures.
145	**Regarding the complaint graphics 2010 vs 2017 what are the. Number of departing arrival flights per day to compare please**	The daily average number of flights for 2010 was 966/day, while the average for 2017 was 1099/day. These figures are based on a sample of 12 days from each year. The noise complaints (red dots shown in the graphic), on the other hand, represent complaints logged during an entire year.
146	**Please, how do the locations of schools factor into flight path design in the particular case of the 33L SID?**	Answered live
147	**Is anything actually going to be done to help the people currently direclty under the concentrated flight paths? Our health is at risk and does not seem to be taken into consideration.**	Identifying options is one of the goals of the study.
148	**Did you study how long a lawnmower "spike" last?**	No.
149	**The Block 2 report mentioned is 123 pages long and in complex English. The presentation is rather technical as well. If equity is a concern, how are affected residents who don't have the time, English proficiency, and/or education to make sense of what's happening? Does Massport have any plans for further and more accessible outreach?**	This is a challenge, but the report required detailed analysis and explanation.
150	**is this new 22l 22r approch change for ever why can' t they change these changes back and forth and let each community share the burden thank you george**	The 22L RNAV approach would only be used in certain conditions and the current procedure would remain in use otherwise, resulting in the suggested burden sharing.
151	**is there a phone number to call in on for audio**	13017158592 83410373790#
152	**Will this meeting address take-offs and landings happening way too late and way too early in the day?**	This quesiton is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study. For our information, Logan is opened 24 hours a day. If you are interested in learning more about how Logan operates please goto https://www.massport.com/logan-airport/about-logan/noise-abatement/
153	**This is Dave Matheu. Can you publish a list or at least a count of the attendees?**	There was roughly 250 attendees in total throughout the duration on the Virtual Information Session.
154	**Is there Closed Caption (CC) for the Hard of Hearing?**	Interpreter services were provided for the meeting and advance notice of accommodating any other interpretation needs, etc. would have to have been given at least 48 hours in advance.
155	**C. Anne Murray: Will the presentation be available after the meeting for those who could not attend??**	Yes, the presentation will be available. It will be posted on the Massport CAC website. http://massportcac.org/
156	**another question & important issue...with such major airlines as: 1. Spirit Airlines 2. Southwest Airlines... ...It is a shame that these airlines at Boston Logan Airport are not able to have a large public terminal space due to the size of their daily ticket volume**	Thank you for your feedback. This quesiton is not related to the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study.
157	**Why does appear that there is an acceptance that the rights of the airlines to fly is immutable, but the rights of the wider population are seen as debatable? There should be discussion about limiting traffic, not just location of the traffic.**	Thank you for your feedback. This quesiton is not related to the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study.

158	**Have studies have been done on the increased environmental impact to communities, noise induced hearing loss to individuals for planes that fly below or beyond the 60/50 db level, and property values?**	Thank you for your feedback. This quesiton is not related to the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study. If you are interested in learning more about ongoing research including on aircraft noise and emmissions please got to the FAA's Center of Excellence website: https://ascent.aero/.
159	**Question on the earlier procedure on 22 R/L from the north. I joined a bit late so may have missed it but, Proffessor Hansman said something to the effect the "communities could state whether they support the proposed changes". Can this process be explained? The proposed runway 22 approach from the north certainly has an adverse impact on Nahant. As chair of Nahant's Board of Selectmen, I can't support something that has adverse effect on the citizens of Nahant.**	The next step in the decision process is for the MCAC to vote to move any procedure forward. That would be the avenue for support/no-support to be expressed
160	**why does brookline receive no air traffic?**	This question was answered by Dr. Hansman during the meeting. The graphics presented capture only the information for a specific procedure and runway. Other runways and procedures are not presented and don't capture the full view of overflight and communties.
161	**could flavio answer bill's question?**	This question was answered by Dr. Hansman during the meeting. The graphics presented capture only the information for a specific procedure and runway. Other runways and procedures are not presented and don't capture the full view of overflight and communties.
162	**Since we are on the topic of noise reduction.. why does the FAA and Massport feel it is okay to increase the amount of residents in Winthrop to be exposed to 70+ DNL? Winthrop was the only community to have an increase of residential exposer.**	Because of Winthrop's close location to specific runway ends the implementation of RNAV procedures did not result in changes in flight concentrations. Ideas evalutaed by MIT do not impact close-in communities like WInthrop.
163	**You didn't answer the question regarding eastern end of cambridge? I will ask again. Why are there no flight over brookline and east cambrigde?**	This question was answered by Dr. Hansman during the meeting. The graphics presented capture only the information for a specific procedure and runway. Other runways and procedures are not presented and don't capture the full view of overflight and communties.
164	**And as a side note, why is 4R not being utilized more often to alleviate the burden of R9.**	This question is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study. For your information, Logan is opened 24 hours a day. If you are interested in learning more about how Logan operates please goto https://www.massport.com/logan-airport/about-logan/noise-abatement/
165	**Are there meeting minutes from these stakeholder meetings that the public can read?**	**T**he FAA early feasibility review on Block 2 can be found here: **http://massportcac.org/library/faa-block-2-early-feasibility-assessment-33l-and-22lr/**
166	**Should we anticipate this problem will worsen for Medford residents as years go on, based on Massport's plans for increased air traffic?**	Number of flights at Logan fluctuate year-to-year and is primarely driven by local demand for travel and economic conditions. Runway use also flcutuates year-to-year and is primaley driven by weather. If you are interested in learning more about how Logan operates please goto https://www.massport.com/logan-airport/about-logan/noise-abatement/
167	**You select which questions you want to answer and not others. Why is that?**	Bill, we are trying to answer the questions that arise during the specific procedure to control the flow of the presentation. We will attempt answer as many questions as possible following the presentation. Questions and comments can also be emailed to community@massport.com

168	**Why is Brookline excluded from any air traffic?**	This question was answered by Dr. Hansman during the meeting. The graphics presented capture only the information for a specific procedure and runway. Other runways and procedures are not presented and dont capture the full view of overflight and communties.
169	**Will questions & answers/comments & responses be compiled, published, and made available to the public?**	Yes.
170	**I ashy is there no traffic over Newton and Brookline**	This question was answered by Dr. Hansman during the meeting. The graphics presented capture only the information for a specific procedure and runway. Other runways and procedures are not presented and don't capture the full view of overflight and communties.
171	**When would these changes be implemented?**	If these procedures were to move forward, they would then undergo a few seperate processes at the federal level. These processes could take a few years to complete.
172	**To clarify my question, why was RNAV implemented?**	The Next Generation Air Transportation System (NextGen) is the FAA-led modernization of America's air transportation system to make flying even safer, more efficient, and more predictable. NextGen was mandated by Congress in December of 2003 with the Vision 100 – Century of Aviation Reauthorization Act. NextGen is not one technology, product, or goal. Rather, it is a series of interlinked programs, portfolios, systems, policies, and procedures. It implements advanced technologies and capabilities that dramatically improve the operation of the National Airspace System (NAS). With the implementation and use of NextGen, the FAA will use new technologies and procedures to increase the safety, efficiency, capacity, access, flexibility, predictability, and resilience of the National Airspace System (NAS) while reducing the environmental effect of aviation. A larger objective is a new way of managing air traffic through Trajectory Based Operations. The modernization of the NAS is one of the most ambitious infrastructure projects in U.S. history. Rather than simply making minor upgrades to aging infrastructure, the FAA and its partners are implementing major new technologies and capabilities. All of NextGen's upgrades are being implemented while the FAA and NextGen stakeholders continue to deliver on our shared top priorities: emphasizing safety, increasing efficiency, improving environmental performance, and enhancing the passenger experience in the busiest — and safest — airspace system in the world. Area Navigation (RNAV) enables aircraft to fly on any desired flight path within the coverage of ground- or space – based navigation aids, within the limits of the capability of aircraft self-contained systems, or a combination of both capabilities.

173	**Can you say what the specific efficiency benefits were that RNAV delivered to operators in and out of Logan? Did this provide higher frequency of traffic (flights/hour) compared to the 2013 ATC based system? Did it lower overall operating costs for Massport on a per-flight basis?**	RNAV and RNP provide for more efficient design of airspace and procedures which collectively result in improved safety, capacity, predictability, operational efficiency, and environmental impacts. Specifically, improved access and flexibility help to enhance reliability and reduce delays by defining more precise terminal area procedures. RNAV and RNP provide environmental benefits because aircraft are able to reduce emissions and fuel consumption. RNAV procedures can provide benefits in all phases of flight, including departure, en route, arrival, approach, and transitioning airspace. Performance-based navigation: • Increases safety through continuous descent procedures that reduce the risk of controlled flight into terrain and loss of control. • Improves airport and airspace access in all weather conditions. • Reduces delays at airports and in certain dense airspace through the application of new parallel routes; newly enabled ingress/egress points around busy terminal areas; improved flight re-routing capabilities, and making better use of closely spaced procedures and airspace; and de-conflicting adjacent to airport flows. • Increases efficiency through less circuitous routes and optimized airspace, especially in lower flight altitude stratums.
174	**This question is for MASSPORT: Will you take some additional time to work with the disaffected communities prior to advancing any reccomendations to the CAC or FAA? While I appreciate that we are stiving for the greater good, I just cant help but think that the public health impact of the all disaffected communities has not been the subject of a further discussion and analysys. Passing this off to the FAA seem to be an abdication of responcibility and to have this not included in the MIT Scope of work seems to be woefully inadequite.**	Sean, thank you for joining us tonight and your advocacy. Send me an email at Tbutler@massport.com and we can further discuss your request.
175	**C. Anne Murray: What is the Arrival Runway for flights going into Logan over the Hull / Cohasset Townline? In the past the flights circled wider and flew over and down the length of Straits Pond. We have noticed a significant increase in flights flying very low and directly over the Green Hill (Hull) neighborhood instead of over Straits Pond. Why has that changed??**	The primary runway operations that overfly Hull are R33L arrivals and R22R/L departures. Although aircraft altitude and location do vary depending on weather, wind, aircraft type and level of demand there has been no change to the procedures related to R33L and R22R/L.
176	**If aircrafts should be around 4000 when the cross Salem from Marblehead, why are they lower than 2000ft? What is the current DNL in South Salem since Salem does not have a noise monitor??**	The average altitude for arrivals to 22L in South Salem is about 2,500 feet. DNL level in South Salem are well below the FAA's threshold of 65 DNL.
177	**Is there a general undestandng from proponents of NextGen (in its current basic implementation) that concentrated flight paths will be reshaping neighbourhoods and creating "noise ghettos" long-term?**	The RNAV Study was the result of community input related to the rollout of new, advanced procedures by the FAA. This effort was designed to look for opportunities to reduce the impacts of flight cocentration as a result of the more precise technology.
178	**Why are the planes using the same runway if the wind is from a different direction?**	This question is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study. For your information, Logan is opened 24 hours a day. If you are interested in learning more about how Logan operates please goto https://www.massport.com/logan-airport/about-logan/noise-abatement/

179	**How is it that this GPS has resulted in so much noise and complaints?**	The RNAV Study was the result of community input related to the rollout of new, advanced procedures by the FAA. This effort was designed to look for opportunities to reduce the impacts of flight cocentration as a result of the more precise technology.
180	**Where can impacted residents voice their concerns to these recommended changes?**	Answered live
181	**Has any community benefited from less noise due to the intorduction of RNAV?**	Answered live
182	**Who funded these studies?**	Answered live
183	**Noise is pollution is probably the most immediate affect to quality of life with the low flying planes over my home but I also worry about air pollution. What can you say about this please?**	Thank you for your feedback. This quesiton is not related to the FAA's rollout of RNAV, flight concentration and noise, and the work done by the MIT team as part of the RNAV Study. If you are interested in learning more about ongoing research including on aircraft noise and emmissions please got to the FAA's Center of Excellence website: https://ascent.aero/.
184	**How is it possible that there is no noise monitor located in Salem when arrivals are crossing at approximately 2000ft.**	This question is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study. For your information, Logan is opened 24 hours a day. If you are interested in learning more about how Logan operates please goto https://www.massport.com/logan-airport/about-logan/noise-abatement/
185	**The Massport notice announcing this meeting states that representatives from Massport and the FAA will be available to answer questions. Will FAA respond to questions and comments?**	The FAA will be responding to questions that are submitted as part of the public informaion meeting and others submitted though the comment period.
186	**Will this presentation be available for replay or later viewing by those that could not attend tonight?**	The meeting was not recorded, however copies of the presentation and repsonses to comments/questions will be available to the public.
187	**Why has it taken the FAA four years to determine whether to implement Block 1 procedures?**	The Block 1 process, set forth by the MOU, had MIT making recommendations to Massport and the FAA. Upon receipt from the communities, Massport reviewed and transmitted to the FAA. The FAA's work began in January 2018 on the Block 1 recommendations and has been an iterative process throughout consisting of the federal review process and updates presented to the MCAC and Massport for consideration. Upon community confirmation in January 2020, the FAA proceeded towards publication of Block 1. Unfortunately, due to the COVID pandemic the FAA publication process has experienced significant impacts. MCAC was informed in mid-2020, that publication would slip to late 2021 due to the ongoing pandemic.
188	**Why was the AUTUM waypoint established in Ayer? MIT LL placed a beacon at the closed Moore Army Airfield. Is this beacon what directs the RNAV to our town? Does the beacon direct general aviation aircraft too?**	Thank you for your feedback. This quesiton is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study.
189	**With the proposal presented here for the 33L SID, can FAA, today, state whether implementation as proposed would require a CatEx, an Environmental Assessment (EA) or an EIS? Is the determination solely a function of the DNL changes within census blocks?**	Answered live
190	**Does the beacon at the closed Moore Army Airfield in Ayer direct air traffic on the JFUND2 approach to Logan?**	Thank you for your feedback. This quesiton is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study.

191	**In addition to DNL criteria, what level of weighting does FAA assign to locating waypoints directly over public schools when FAA designs procedures? If a school falls outside the 65DNL footprint then is it treated the same as any other overflown parcel? I ask because TEKKK was sited nearly directly above the large public school complex in Medford. Nearly 2500 students attend the three schools on the parcel directly below TEKKK. Prior to TEKKK, aircraft were on a 314 heading. After TEKKK, that heading changed to 316 and brought EVERY jet directly over the school complex. Please, how do the locations of schools factor into flight path design in the particular case of the 33L SID?**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E
192	**Nearly 2500 students attend the three schools on the parcel directly below TEKKK. Prior to TEKKK, aircraft were on a 314 heading. After TEKKK, that heading changed to 316 and brought EVERY jet directly over the school complex. Please, how do the locations of schools factor into flight path design in the particular case of the 33L SID?**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E
193	**Though it was skipped before moving off 33L. My question remains valid. Thus it is repasted.... Nearly 2500 students attend the three schools on the parcel directly below TEKKK. Prior to TEKKK, aircraft were on a 314 heading. After TEKKK, that heading changed to 316 and brought EVERY jet directly over the school complex. Please, how do the locations of schools factor into flight path design in the particular case of the 33L SID?**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E
194	**Could you please explain why a MIT LL beacon was installed at the closed Moore Army Airfield in Ayer?**	Thank you for your feedback. This quesiton is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study.
195	**Residual question right here: Nearly 2500 students attend the three schools on the parcel directly below TEKKK. Prior to TEKKK, aircraft were on a 314 heading. After TEKKK, that heading changed to 316 and brought EVERY jet directly over the school complex. Please, how do the locations of schools factor into flight path design in the particular case of the 33L SID?**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E
196	**The Massport notice announcing this meeting states that representatives from Massport and the FAA will be available to answer questions. Will FAA respond directly to questions and comments?**	As ANE RA Colleen D'Alessandro stated during opening remarks: "The focus of this [Massport hosted meeting] is to explain and out brief the results of the MIT study. While I and the FAA technical team will be listening in, questions should be focused on the study and directed to Dr Hansman and his [MIT] team."
197	**What is the altitude requirements for arrivals heading over from Marblehead to Salem? I've notice 1900ft. Why are they not higher?**	Depending on a variety of factors, it may or may not necessitate that aircraft be lined up straight-in to sequence them for approach; aircraft over your area, in good weather, are probably using visual approaches due to lower air traffic volume due to the pandemic. Further, in inclement weather certain runways have different approach criteria and altitudes. Runway selection is based on safety, efficiency, runway availability, and weather conditions which results in aircraft traffic patterns over different surrounding communities.
198	**The question regarding flight path design was specific to how the locations of schools factor into the design. Could you please explain how the locations of schools factor into flight path design in the particular case of the 33L SID, as nearly 2500 students attend the three schools directly below TEKKK in Medford?**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E
199	**My understanding is LOGAN-TWO and other non-GPS procedures are still valid (maybe undesirable from a workload perspective on high volume days). These are the same procedures that existing pre-RNAV and will always remain options because if GPS were unexpectedly compromised (solar storm, or satellite collision, etc) then in the "day without space", safe transit would require the old techniques and the ground stations. Can FAA confirm or correct that understanding?**	Air traffic control (ATC) across the United States, to include here at BOS Logan, utilize a variety of instrument approach procedures. Types of approaches can include visual approaches; charted visual flight procedures; RNAV approaches; ILS approaches; VOR, NDB, radar or localizer approaches.
200	**My questions are relative to all blocks regarding JFUND2.**	Thank you for your feedback. This quesiton is not related to the use of the FAA's rollout of RNAV and the work done by the MIT team as part of the RNAV Study.

201	**What was the change in the aircraft safety/near miss event record in the US since the introduction of RNAV? Since the claim has been made that RNAV was for safety.**	U.S. Air Carrier safety data can be found on the DOT Bureau of Transportation Statistics website (www.bts.gov/content/us-air-carrier-safety-data)
202	**the biggest problem with aircraft noise is not so much the RNAV flown, it is th frequency which aircraft fly those RNAVs. it's frequency that creates annoyance and noise fatigue. are there any plans, in the near future, to seek answers to this issue... or given the current nexgen system, is this an impossiblity?**	The FAA does not decide: the number of flights that will arrive and depart an airport in any given day; the time of day that flights will arrive or depart; the type of aircraft that will fly into or out of the airport; or, where to develop land around an airport.
203	**Why is the FAA rejecting the proposed alternatives? Are they really committed to fixing this problem?**	The FAA remains committed and willing to consider any new recommendations from the MCAC or Massport to revise approach or departure procedures at BOS Logan. The FAA takes community recommendations and intent of a request into consideration, but we cannot design routes according to community design preferences. We must design to FAA safety criteria. We will continue to work with the community roundtable (MCAC) should they wish to submit new consensus recommendations. If FAA safety criteria and new technologies evolve, we might be able to revisit certain requests in the future.
204	**to FAA: Please, how do the locations of schools factor into flight path design in the particular case of the 33L SID? Nearly 2500 students attend the three schools on the parcel directly below TEKKK. Prior to TEKKK, aircraft were on a 314 heading. After TEKKK, that heading changed to 316 and brought EVERY jet directly over the school complex. New heading brought EVERY jet to the school. Old heading would have placed them over the widest part of the Mystic River**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E
205	**Fwiw: Colleen D'Alessandro, FAA NE Regional Administrator was supposed to address my question about the concentration of flight paths in 2010-2017, but it was addressed by Prof Hansman, and we haven't heard from her.**	As ANE RA Colleen D'Alessandro stated during opening remarks: "The focus of this [Massport hosted meeting] is to explain and out brief the results of the MIT study. While I and the FAA technical team will be listening in, questions should be focused on the study and directed to Dr Hansman and his [MIT] team."
206	**How does FAA measure whether they are meeting the congressional mandate of finding ways to gain greater dispersion of planes and reduce noise to populations?**	The FAA remains committed and willing to consider any new recommendations from the MCAC or Massport to revise approach or departure procedures at BOS Logan. The FAA takes community recommendations and intent of a request into consideration, but we cannot design routes according to community design preferences. We must design to FAA safety criteria. We will continue to work with the community roundtable (MCAC) should they wish to submit new consensus recommendations. If FAA safety criteria and new technologies evolve, we might be able to revisit certain requests in the future.

Questions submitted via email

	Question	Answer
1	**Please summarize the resources and funds that were involved for the study (including resources that did not cost $ e.g. Hansman's time).** **Who did what and how much $/free and who paid.**	Over the duration of the FAA's ASCENT work with MIT, which started in 2014, FAA provided $1.36M to MIT. Massport has been an in-kind cost share partner for ASCENT. Massport also provided funds to support a gradute student at MIT and funds for HMMH, the acoustical consultant.
2	**It was difficult to hear Dr. Hansman's reference to where to get the data on the noise complaints data/study from Boston, MN, and Heathrow. Can the studies/information be shared?**	The full report is available at https://ascent.aero/publication/block-2-procedure-recommendations-for-boston-logan-airport-community-noise-reduction/
3	**Are these planes only going to affect little Nahant. if so why? Why not big Nahant? also little Nahant is bombarded by runway 4r planes on departure as early 5:30am and as late as 11:30pm sometimes all day .planes 30 seconds apart some times let big Nahant share some of the burden little Nahant also affected by by planes at landing from west to east over little Nahant to runway 33l 15l I think I got those runways correct thank you I believe the is to much noise for just little Nahant to absorb we have enough noise. We have nothing around here to absorb the noise the the big cities have only open ocean so noise is much louder!!! What about alternating the flight paths back and forth so one community is not stuck with the noise and pollution for long periods of time thank you George Mihovan**	This procedure was designed to "NOT" overfly Swampscott or Nahant. Aircraft that are currently flying over Nahant and Swampscott are doing so visually, not on the ILS or any RNAV procedure. Aircraft that are on the proposed RNAV procedure will not overfly Swampscott or Nahant.
4	**Why can't these planes fly over the water from swamscott and turn at the south end of big Nahant still over the water then make the turn to the air port missing Nahant alltogether thank you George Mihovan**	This procedure was designed to "NOT" overfly Swampscott or Nahant. Aircraft that are currently flying over Nahant and Swampscott are doing so visually, not on the ILS or any RNAV procedure. Aircraft that are on the proposed RNAV procedure will not overfly Swampscott or Nahant.
5	**Is there going to be a way point out in Nahant Bay to get these planes turn before they get to LITTLE NAHANT if not WHY? And can we add one? thank you George Mihovan**	Additional information can be found here: http://massportcac.org/library/rwy-22l-supplemental-study-analyses-06-18-2021/
6	**Could you please send me a copy of the RNAV22l study or info where I could find it .? Thank you George Mihovan**	Additional information can be found here: http://massportcac.org/library/rwy-22l-supplemental-study-analyses-06-18-2021/
7	**With southerly winds. the Logan flight path landing approach path fron the west cross over Winchester, Woburn, Lynnfield, Peabody, and Danvers affecting residents of these communitities at odd hours. Why doesn't Massport direct thes flights to go directly to the ocean side at high altitiude before turning south to approach Logan????**	BOS Logan does abut Boston Harbor on the east side. Whether an aircraft can be directed to fly established procedures over the water depends on the runways in use at the time. The FAA and MassPort have designed specific procedures to take advantage of over the water flights when possible. Note – aircraft may fly over Boston Harbor, but eventually will fly over communities to the North or South of the airport (i.e., shoreline crossings) when flying in the actual direction of its destination.
8	**Question 1: Evidence that implementation of RNAV procedures and concentrated flight** **paths at Boston's Logan Airport and airports throughout the US results in significant** **detrimental repetitive noise impacts to those living under those concentrated paths is** **overwhelming. The impacts are evident by:** **a) The consistent negative response of impacted residents here in the Boston area** **and throughout the country where RNAV procedures have been implemented** **b) The findings of the FAA's January 2021 "Analysis of Neighborhood Environmental Survey" (NES)** **c) The more than 4,000 comments submitted in response to the FAA's Request for** **Input on Research Activities to Inform Aircraft Noise Policy (FAA Docket No. FAA-2021-0037)**	Thank you for your statement.

9	**The significant noise impact is new information not taken into account in the EA FONSI. If there is significant new information relative to approved FAA actions FAA Order 1050.1F requires a supplemental EA. 1) What is the FAA position on the inconsistency between the FONSI and the reality of the significant noise impacts caused by implementation of RNAV Procedures? 2) What will the FAA do to address the inconsistency between the 2013 FONSI and the significant noise impacts experienced by communities living under the concentrated flight paths? 3) What will FAA do to provide relief to those impacted communities?**	The FAA is modernizing the National Airspace System (NAS) and is committed to moving to satellite based navigation, known as Performance Based Navigation or PBN. This is consistent with Congressional direction and necessitated by growth in the system, which by itself affects a community's perception of noise unrelated to airspace modernization. FAA is studying ways to use PBN technology to create systematic dispersal of flight tracks while maintaining safety and efficiency. It is important to understand however that it is not possible to replicate the kind of random dispersal that occurs when planes are flying using ground based navigation i.e. introducing systematic dispersal using satellite based routes does not achieve an outcome that would resemble "going back to the way it was." That type of dispersal is no longer possible. The options to disperse arrivals are especially limited based on what is required to line up planes for safe landing, and there are no applicable concepts for arrivals or departures that eliminate noise; in general, they only move noise.
10	**Question 2: The above referenced "Analysis of Neighborhood Environmental Survey" (NES) and its companion FAA Request for Input on Research Activities to Inform Aircraft Noise Policy (FAA Docket No. FAA-2021-0037) states "Under the FAA's Airport Noise Compatibility Planning Program, airports may voluntarily ……consider measures that reduce existing noncompatible land uses and prevent new noncompatible land uses in areas exposed to significant levels of aircraft noise." It is further stated that "…more than 250 airports have used this process to 'consider' changes to local land use". Contrary to the conclusion presented in the May 2013 Final EA for implementation of RNAV Procedures at Boston's Logan Airport, the introduction of RNAV/PBN immediately created long and narrow paths of noncompatible land that were quite compatible with the airport operations prior to implementation of RNAV. Therefore, implementation of RNAV Procedures at Logan Airport are in direct conflict with the intent of the FAA's Airport Noise Compatibility Planning Program. Please provide an explanation for this significant conflict in FAA's actions and its Noise Compatibility Program.**	The FAA has initiated a broad policy review at the Headquarters level. Building on our partnerships with academia, industry, and government, the FAA intends to more fully understand, manage, and reduce aviation's environmental impacts, which are not limited to noise. We are deeply aware of community concerns regarding aviation noise and believe the ongoing process with community engagement is the best strategy for all to be heard and reach consensus recommendations. That said, the policy review currently does not indicate any shift in FAA policy at this time, therefore all established policies remain in effect.
11	**Question 3: In development and implementation of the PBN/RNAV procedures in use at Boston's Logan Airport, was a cost-benefit analysis performed and, if so, please make it available for public review?**	NextGen was mandated by Congress in December of 2003 with the Vision 100 – Century of Aviation Reauthorization Act. NextGen is not one technology, product, or goal. Rather, it is a series of interlinked programs, portfolios, systems, policies, and procedures. It implements advanced technologies and capabilities that dramatically improve the operation of the National Airspace System (NAS). The modernization of the NAS is one of the most ambitious infrastructure projects in U.S. history. Rather than simply making minor upgrades to aging infrastructure, the FAA and its partners are implementing major new technologies and capabilities. All of NextGen's upgrades are being implemented while the FAA and NextGen stakeholders continue to deliver on our shared top priorities: emphasizing safety, increasing efficiency, improving environmental performance, and enhancing the passenger experience in the busiest — and safest — airspace system in the world.
12	**Question 4: How was the real cost to residents living under the concentrated flight paths, in terms of reduced quality of life, health, wellbeing and property values caused by the repetitive noise impacts factored into the justification for implementation of RNAV Procedures and selection of the specific flight paths now in use?**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E

13	**Question 5: The FAA states their mission is to provide the safest, most efficient aerospace system in the world. Please define the term safety in the context of FAA's mission and describe, in detail, the FAA's mission responsibility with respect to safety. FAA's responsibility to safety must take into account, if it does not already, the safety of not only people flying in planes or the safety of the aircraft themselves but also those living in the communities where airports are located. How can the FAA achieve their mission with the use of NextGen and PBN/RNAV procedures to create concentrated flight paths when those concentrated flight paths cause significant and detrimental impacts on the quality of life, health, and wellbeing of residents living under the resulting flight paths?**	The Federal Aviation Administration (i.e., Air Traffic Control) is responsible for the safe movement of aircraft both in the air and on the ground. Runway assignments, headings, altitudes and other directions to pilots are assigned only by FAA air traffic controllers. Safety is the number one consideration of the FAA. Overall, FAA's noise-related responsibilities include regulatory actions governing aircraft noise certification, aircraft operational restrictions, approval of noise abatement procedures, pilot and flight regulations, and noise compatibility studies. FAA has taken a host of actions in recent years to meaningfully engage communities. For example, the agency has hired community engagement officers across each region to expand the reach of Regional Administrators into communities. We have worked with airport authorities and their noise officers to address legacy community noise concerns. The agency also consistently engages with airport roundtables to provide information and expertise on airspace procedures and other issues related to aircraft noise. Additionally, we review air traffic procedures across the country to seek opportunities to reduce aircraft noise while consistently maintaining the highest level of safety. In the area of research, we have added projects to our portfolio to study airspace management concepts to determine if there are options that can reduce noise impacts while maintaining the highest level of safety.
14	**Question 6: One 33L departure flight path is directly over Fresh Pond in the City of Cambridge. Fresh Pond is the City of Cambridge drinking water supply as well as a vital wooded, open space resource for the densely populated City and surrounding communities. How were the potential health impacts of concentrated air traffic over the City's drinking water supply and the reduction in the recreational value and enjoyment opportunities of the Fresh Pond Reservation Area to local residents factored into the development of, and justification for, the PBN/RNAV Procedures and specific flight path currently used?**	Additional information can be found in FAA Order 1050.1F and Order 8260.3E
15	**Question 7: The FAA uses DNL as the primary metric for evaluating noise impacts from aircraft operations. It is clear from multiple reports (including those by the FAA), self reported noise complaint data, and personal experience that valid, appropriate, and comprehensive assessment of aircraft noise impacts must fully capture the issues of: a) number of noise events/day, b) frequency of events, c) time of day, d) overall duration of repeated noise disturbances (e.g., 16 hours/day for 3 days in a row) and e) proximity of individual/community to a concentrated RNAV flight path. The DNL metric used by FAA does not incorporate all these factors. Please explain why the FAA does not use valid, appropriate, and comprehensive assessment metrics of noise impacts from aircraft traffic under its jurisdiction.**	DNL is the standard noise metric used for all FAA studies of aviation noise exposure in airport communities. The day-night average sound level (DNL) noise metric is used to reflect a person's cumulative exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year on the basis of annual aircraft operations. The DNL noise metric provides a mechanism to describe the effects of environmental noise in a simple and uniform way. Over the last four decades, the number of Americans exposed to significant aviation noise, above DNL 65 dBA, near airports has been reduced by more than 94%. The FAA uses the DNL metric and the 65dB noise threshold to make policy assessments in three primary areas: a. Setting the FAA's noise goal for reducing the number of people exposed to significant noise around U.S. airports b. Establishing the level of aircraft noise exposure below which residential land use is compatible, as defined in the Aviation Safety and Noise Abatement Act of 1979 (ASNA) and 14 CFR Part 150 c. Establishing the level of aircraft noise exposure below which noise impacts of FAA actions in residential areas are not considered "significant" under The National Environmental Policy Act of 1969 (NEPA)

16	**Question 8: Air travel is very safe and has been for decades, well before implementation of PBN/RNAV procedures. What is the incremental reduction in risk and increase in safety using RNAV Procedures over pre-RNAV procedures? Also, the "Operational Stakeholders" that provided input to the MIT Study Team on the feasibility of alternative procedures developed in the Study cited increased risk or decreased safety as reasons to eliminate options from further consideration. Please provide, in detail, the magnitude of the risk and safety changes cited by the "Operational Stakeholders" so as to put these negative attributes of eliminated procedure options in perspective relative to other known industrial, public, transportation risks.**	RNAV and RNP provide for more efficient design of airspace and procedures which collectively result in improved safety, capacity, predictability, operational efficiency, and environmental impacts. Specifically, improved access and flexibility help to enhance reliability and reduce delays by defining more precise terminal area procedures. RNAV and RNP provide environmental benefits because aircraft are able to reduce emissions and fuel consumption. RNAV procedures can provide benefits in all phases of flight, including departure, en route, arrival, approach, and transitioning airspace. Performance-based navigation: • Increases safety through continuous descent procedures that reduce the risk of controlled flight into terrain and loss of control. • Improves airport and airspace access in all weather conditions. • Reduces delays at airports and in certain dense airspace through the application of new parallel routes; newly enabled ingress/egress points around busy terminal areas; improved flight re-routing capabilities, and making better use of closely spaced procedures and airspace; and de-conflicting adjacent to airport flows. • Increases efficiency through less circuitous routes and optimized airspace, especially in lower flight altitude stratums.
17	**Can the FAA spread the airplanes routes around other cities so it's not so heavy for one community, in this case Medford?**	Aircraft associated with BOS Logan tend to fly within broad airspace areas as the FAA directs aircraft to and from the airport. If you live within one of these areas, you will likely experience aircraft over flights. How and to what frequency any particular land area is overflown depends on: weather conditions, the runway being used, runways available, the type of aircraft, and its relative distance from the airport.
18	**Hi my name is George Mihovan I live in little Nahant ,with the causeway over a mile long, why do planes have to fly over little Nahant at all?**	This procedure was designed to "NOT" overfly Swampscott or Nahant. Aircraft that are currently flying over Nahant and Swampscott are doing so visually, not on the ILS or any RNAV procedure. Aircraft that are on the proposed RNAV procedure will not overfly Swampscott or Nahant.
19	**After listening to the Zoom meeting regarding the use of landings and departures over certain areas especially in Medford, I was truly baffled to hear the reasoning that " it does affect Medford but it will affect more people if it changes" ~ Seriously? I have lived in Medford in the same neighborhood for over 50 years and always heard and saw plane ,but for the last 6 years it has been unbearable,. If I wanted to hear the all day every 2-3 minutes of planes landing I would have bought a house in East Boston- at least they get abatements and incentives. I would like to ask the FAA, Massport and the folks from MIT that did the study- " if the same flight path and runways continue in its current use- Will these communities affected be granted the same courtesies and incentives that the other communities receive? Please consider spreading out the current runway usage**	Aircraft associated with BOS Logan tend to fly within broad airspace areas as the FAA directs aircraft to and from the airport. If you live within one of these areas, you will likely experience aircraft over flights. How and to what frequency any particular land area is overflown depends on: weather conditions, the runway being used, runways available, the type of aircraft, and its relative distance from the airport.
20	**Hell my name is George Mihovan I live in little Nahant is there going to be a QUALITY OF LIFE STUDY GOING DO BE DONE In Nahant ? if not, why not ? Does the town of Nahant have to ask for it to be done ? We the resindents would want one. thank you George Mihovan**	The FAA ensures that current guidance, tools, and methodologies are available and used appropriately for assessing environmental impacts of changes to air traffic procedures including community recommended actions in compliance with the National Environmental Policy Act (NEPA) and FAA regulations. The Aviation Environmental Design Tool (AEDT) is a software system that dynamically models aircraft performance in space and time to produce fuel burn, emissions and noise data. AEDT provides documented support for a Categorical Exclusion if the model, including its screening tool, shows no potential for significant noise impacts. The FAA does not conduct procedure or environmental tests. The FAA will take community recommendations that have been approved by the airport authority and assessed for various criteria (safety, environmental, etc.) that may lead to the creation of new procedures or amendments to current procedures.
21	**Hello my name is George Mihovan I live in little Nahant will this 22l change make us eligible for sound proofing improvements that masport offers thank you George Mihovan**	Federal requirements restrict noise mitigation to homes located within the airport's annualized 65DNL contour. Massport updates this contour annually. Nahant is currently outside this federal threshold and is expected to be in the future.
22	**Hi my name is George Mihovan I live in little Nahant ,with the causeway over a mile long, why do planes have to fly over little Nahant at all. We in Nahant are against this change thank you George Mihovan**	This procedure was designed to "NOT" overfly Swampscott or Nahant. Aircraft that are currently flying over Nahant and Swampscott are doing so visually, not on the ILS or any RNAV procedure. Aircraft that are on the proposed RNAV procedure will not overfly Swampscott or Nahant.