

# City of Cambridge

## Executive Department

**YI-AN HUANG**  
City Manager

September 28, 2023

Polly Trottenberg, Acting Administrator  
Federal Aviation Administration  
Orville Wright Federal Building  
800 Independence Avenue SW  
Washington, D.C., U.S. 20591

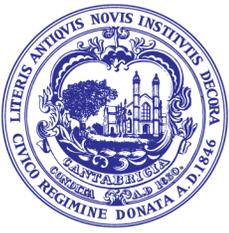
### **Request for Comments on the Federal Aviation Administration's Review of Civil Aviation Noise Policy, Docket No. FAA2023-0855**

Dear Administrator Trottenberg,

The City of Cambridge is pleased to submit comments to the Federal Aviation Administration (FAA) as it reviews its noise policy regarding civil aviation and the impact of airplane noise on communities. Cambridge has communicated our concerns about increased airplane noise from Logan Airport over at least the last fifteen years through letters to Massport and FAA as well as our involvement with airport oversight committees, participation in regional government coalitions and advocacy groups, and reporting the growing trend of noise complaints from the City's constituents. This letter responds to FAA's questions in the NOFA to address the inadequacy of current noise metrics; communication, accountability, and procedures for the regulation of aviation noise; and planning of new routes or route changes.

Our residents appreciate efforts to improve safety in aviation, however these must be balanced with the effects of these actions, including both great disturbance of daily life and public health concerns that have resulted from concentrated aviation noise from the use of dedicated flight paths. We request that the FAA review and revise its policies with these concerns in mind and look at other national transportation agencies, e.g. railway and highways, in the US and abroad, to match or exceed current national noise assessment practices. Proposed improvements, to broaden and enhance the current aviation noise impact assessment, are provided herein.

In the last 10 years, the increase in noise complaints related to airplane noise have been mostly associated with increases in the number of flights, and the introduction of RNAV and NextGen navigation systems. In Cambridge and the greater Boston Region, the number of flights from Logan Airport along RNAV defined paths can exceed 400 planes per day. Operations prior to this resulted in a dispersion of air traffic over larger geographic areas. The implementation of RNAV has resulted in a concentration of flights along specific paths and increased disturbances as the frequency of flights that impact populations not only near the airport but also at more distant locations.



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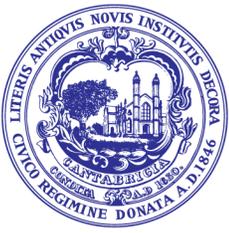
The noise metric level of 65 DNL, used by FAA to set a planning threshold for noise, is primarily used for improving the sound insulation of buildings, particularly for populations living near an airport. This metric is inadequate for measuring the negative impact of persistent overflights that can happen for days in a row over more distant communities that are below the 65 DNL threshold. It is also inconsistent with international standards for measuring impacts from overflights including guidance from the World Health Organization for European Regions, which recommends aviation noise not to exceed 45 dB (L<sub>den</sub>) during day time, and 40 dB(L<sub>den</sub>) at night.

Citizen complaints are an indication that the significant number of flights per day impact sleep, learning, communication, and the ability to enjoy private outdoor space, in some cases leading people to move. Repercussions extend beyond a single “annoyance” and include mental and physical health. Some communities are experiencing a growing sense of powerlessness because of the absence of better noise regulations and legal framework. Impacts are compounded when flight paths are located above underserved communities, who already tend to be exposed and suffer from worse environmental conditions, (2022 Asthma Data from the Centers for Disease Control and Prevention, U.S. EPA Environmental Justice, and Air Pollution).

### **Inadequacy of FAA Noise Metrics**

The population impact of flight paths before RNAV were randomized over larger areas, with their effects less persistent over specific areas. As flights are being concentrated along pre-defined paths, the planning of new routes, and its concentrated impact on populated areas, now share resemblances with the planning of highways or railways, thus making the case for comparing aviation noise regulations with other governmental agencies such as the Federal Transport Agency, (FTA).

The FTA’s noise impact criteria for transit projects are estimated based on the existing noise exposure, the number of transit occurrences, and land-use. The existing noise exposure is a useful indicator of the perceptibility of noise events. Limits for aviation noise could be adjusted regionally based on the local existing ambient noise, so aircraft noise does not exceed ambient above a certain threshold and become clearly perceptible or be relaxed in noisy populated or industrial areas already experiencing a high daytime/nighttime ambient noise level. This would provide for more stringent noise limits to protect dense residential areas and outdoor spaces, (e.g. parks, residential outdoor spaces, etc.), which tend to exhibit a lower background noise level. Local aviation authorities would expand their database of noise contours using ambient noise data collected in collaborations with various communities surrounding flight paths, to estimate noise impacts, and include this data within AEDT prediction modeling tools. Ambient noise database would also include seasonal and daily/weekly population changes using commuter-adjusted population estimates, or other changes specific to a local community, (e.g. student academic year, summer vacation, tourism, etc.).



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Complaint reports very clearly indicate that the increase of number of plane noise events has a significant impact on the well-being and health of the population. In comparison, the number of transit events are fully embedded in FTA's equations to predict noise impact, i.e. a greater number of transit events results in a worse noise impact rating. The FTA's equations also use the number of events as a function of land use, so that it is tied to the actual noise sensitivity of an area.

The final FTA's noise impact calculation is rated from "No Impact" to "Severe Impact", according to a final rating table, which includes land-use categories, noise exposure calculations factoring the number of events, and existing noise exposure.

In comparison, the single DNL metric used by the FAA uses land use but only for areas in proximity of an airport. The *number* of events can decrease or increase the overall noise exposure level for the DNL calculation, but the *frequency* and persistence of noise events is not considered to assess the subjective impact of persistent noise events. Additionally, the existing ambient noise is not part of the environmental noise impact.

### **Communication, Accountability and Procedures**

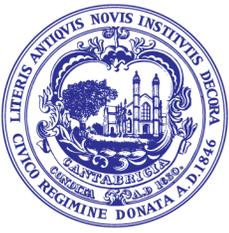
In recent years, airports have updated their public information procedures with website updates of real-time maps of arriving/departing flights, noise level monitoring, noise abatement policies report, and portals for posting complaints. While progress is being made, there are still a significant number of complaints regarding unannounced, sudden runway use changes that can last several weeks or months.

As noted above, there is also a growing frustration within communities about the lack of procedures driven by the sole DNL noise metric, which only triggers the improvement of building façade/roof envelope sound isolation, above or below the 65 DNL threshold.

To bridge the growing divide between city and community organizations collecting complaints, and airport authorities, communities wish for enhanced accountability and communication about addressing harmful noise exposure, and sudden, unannounced runway use changes.

With a revised noise impact assessment, communities wish for regulations that can be adapted locally, and with local jurisdictions that can enforce the guidelines and respond to harmful noise exposure situations.

Regarding communication, new rail and highway projects in comparison are often followed by communication campaigns involving information sessions and community meetings, websites, listening and preference booths or online portals, incorporating immersive listening technology to render future noise impact overlaying future noise events with actual ambient noise measurements.



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There should be improved communication and engagement processes between impacted, non-impacted communities, and local airport authorities to build consensus about flight dispersion procedures. More dialogue could help to build more equitable noise exposure and consensus to prevent un-acceptable exposure situations, such as populated areas away from an airport enduring extreme number of planes every day.

### **Planning of New Routes and Route Changes**

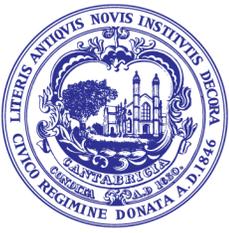
As part of various workshops with airport authorities, FAA's technical advisors, and other city representatives, the City has encouraged FAA to consider flight dispersion methods as well as vertical path changes, altitude and controller-based dispersions, waypoint relocations, variable rotations, and divergent headings. Only one dispersion option was put forth to mitigate the noise impact of gradually implemented RNAV flight procedures and did not reduce the number of planes along specific path, but only proposed to shift the area of maximum impact to other populated areas.

Furthermore, the environmental permitting of new routes emphasizes impacting the fewest people, with a focus on metrics such as number of flights (N above). However, this results in an increased level of noise exposure to the affected population. The moderate disturbance of many has become the extreme discomfort of a few.

Cambridge understands the challenges of implementing efficient, safe, and manageable flight routes over a densely populated area near an airport. However, instead of shifting the noise impact to other populated areas, dispersion methods should consider a greater dispersion of flights at lower altitude and gradually allowing a greater concentration of plans at higher altitude and outside of a densely populated region near the airport. Also, FAA should place more emphasis on new, quieter plane technologies and incentives, such as noise-based landing fees used in other countries, that could be implemented by FAA, or Congress if needed.

Communities have also expressed frustration over prescriptive flight paths, which only seem planned for the convenience of flight operating procedures. The planning of new runways and airport shall be done by considering all possible routes, considering areas of natural beauty, demographics, population density, land-use, ambient noise, existing transportation axes, and noise equity between communities.

The City of Cambridge hopes that FAA will be able to make substantive changes to its noise policies based on these and additional comments it receives. Communities like Cambridge and others are extremely frustrated about the deficiency of the single DNL metric not being adequate to capture the harm that people experience under RNAV flight paths. At this point we have little



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hope in FAA addressing the issue without major policy changes and are left little recourse or new strategies to consider improving the situation here.

Thank you for the opportunity to comment on FAA noise policy, and for taking Cambridge's and others concerns into serious consideration regarding the increasingly harmful effect of concentrated noise and its effects on people.

Sincerely,

Yi-An Huang  
City Manager