

Select Board Announcements and Liaison Report – September 9, 2024

From Joe Pato:

- **School Building Committee (SBC)**

1) **Request for Select Board action.** The SBC has requested that the Select Board consider implementing permit parking on a portion of Worthen Rd as part of the plan for the high school project. Three of the massing concepts are placed on the general footprint of the existing buildings (phased in-place development) and the available parking areas fall about 30 spaces below the expected need. Providing these spaces on the site would require the addition of structured parking (at about \$20M) or reduction of available field space. Satisfying that need with dedicated parking areas on Worthen Rd. would avoid these penalties. Current planning by the SBC is proceeding assuming that the additional parking will be provided off-site rather than within the project scope.

2) September 18 – LHS Building Project Community Meeting Wednesday at Battin Hall and Zoom (2 hours)

This will be a hybrid community forum. This session is primarily intended to discuss cost estimates and the comparison of costs to recent school projects. These estimates are still very preliminary and largely representative of gross square feet needed rather than detailed designs and draw on the per square foot costs in school construction over the past years escalated by existing and anticipated inflation. Given the technical nature of these cost estimates, there will be a brief presentation at the beginning and most of the issues will be handled by professional staff.

3) September 19 – LHS Project Summit (Select Board, School Committee, Appropriation Committee, Capital Expenditures Committee, Recreation Committee, School Building Committee)

Review responses from the committees regarding the August 15 general project update and discussion on the Field House and Pool being outside the School Building Committee's jurisdiction/mandate which is related to building a school that meets the educational plan submitted to the MSBA.

4) I have scheduled a series of "Coffee chats with Joe regarding the Lexington High School Project" (see <https://joepato.org>) The next session will be at the small community conference room in the new Police Department adjacent to the lobby on Tuesday, September 10 from 6:30pm to 8pm. So far 10 residents have attended the two outdoor weekday daytime sessions. I will also be holding an outdoor session on Saturday, September 14 from 4pm to 5pm at Emery Park.

From Mark Sandeen:

- **Affordable Housing Trust**

Seven proposals to build 100% affordable housing on Parcel 68-44, located at the intersection of Lowell Street and North Street, have been received in response to the Parcel 68-44 RFP issued by the Select Board.

The Affordable Housing Trust is planning to schedule in-person interviews for the week of September 16th with the short list developers who have submitted proposals. The interviews are expected to take approximately 1 hour per developer. The developers are expected to make a short presentation of their proposal followed by an opportunity to answer questions. The Select Board is invited to attend those in person developer interviews.

- **Human Rights Committee**

The Lexington Human Rights Committee met to consider the proposed changes to the HRC charge on September 4, 2024. The HRC decided to consult with Dr. Hackett regarding the appointment of Lexington Public School liaisons to the committee prior to recommending approval of the updated charge. The Human Rights Committee plans to review the charge, after that discussion, at the next HRC meeting which is currently scheduled for September 18, 2024.

- **Bicycle Advisory Committee**

The Bikeway Block Party is scheduled for Sunday, September 15, 2024. For more information

www.bikewayblockparty.org

- **Hanscom Area Towns Committee**

The Hanscom Area Towns Committee voted to unanimously on September 5, 2024 to approve submittal of a public comment letter (letter attached to end of this report) on behalf of the Hanscom Area Towns Committee regarding Massport's draft 2022 Environmental Status and Planning Report for Hanscom Airfield. The public comment period for the 2022 Environmental Status and Planning Report ends on September 12, 2024.

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office

September 6, 2024

Alexander Stryisky, MEPA Environmental Analyst
100 Cambridge Street, Suite 900
Boston MA 02114

Re: Draft 2022 Environmental Status and Planning Report (ESPR)

Dear Secretary Tepper and Mr. Stryisky:

Thank you for the opportunity to submit public comments on the Draft 2022 Environmental Status and Planning Report (ESPR). We also extend our appreciation for the bold climate and environmental protection goals you have set forth for our Commonwealth.

The Hanscom Area Towns Committee (HATS) coordinates the policies and activities of the four towns (Bedford, Concord, Lexington, and Lincoln) that contain Hanscom Field and their relationship with the major organizations that operate in the Hanscom Field area. The four towns coordinate their efforts in planning, growth management, land use, traffic control, and environmental protection. HATS seeks to protect and preserve the physical and environmental attributes of the area in the face of expanding institutional and commercial development, increasing traffic and airport noise and other threats to the environment.

We write to highlight some pressing environmental concerns regarding the draft ESPR and its potential contradiction with the state's climate and environmental objectives.

1. Criteria Pollutants and Greenhouse Gas Emissions: The Draft ESPR does not propose to include measurement or analysis of the full impact of greenhouse gases or ultrafine particulate matter (PM_{0.1}) from aircraft operations departing from Hanscom Airport. The draft ESPR discusses six criteria pollutants, which include carbon monoxide (CO), lead (Pb), nitrogen oxides, ozone (O₃), particulate matter [PM₁₀ and PM_{2.5}], and sulfur dioxide (SO₂), which are generated from aircraft operations and vehicular traffic. The draft ESPR states that Massport only considers emissions from aircraft operations occurring up to 3,000 feet above ground level.

We respectfully request that the final ESPR include the expected greenhouse gas emissions (CO₂e) and ultrafine particulate matter emissions (PM_{0.1}) for the entire flight of any aircraft operations departing from Hanscom Airfield, not just for the portion of the flight below 3,000 feet, which is typically only 1 minute of an average 100 minute flight time.

The draft ESPR presents the impact of air pollution produced from highly local Hanscom Airfield aircraft operations (up to 3,000 feet) compared to the emissions from the entire Middlesex County of 1.6 million people. A more valid comparison would be to compare local aircraft emissions (up to 3,000 feet) to the emissions from a much smaller study area. A smaller study area of 9 square miles, such as the study area used in ESPR Section 8.4.2 for considering motor vehicle emissions, would be more appropriate. Additionally, the ESPR should report the total operational emissions for any flight departing from Hanscom Field.

2. Ultrafine Particles: Jet engine exhaust is a significant source of ultrafine particles and aviation-related emissions can adversely impact air quality over large areas surrounding airports.¹ Studies have shown that ultrafine particulate matter (PM_{0.1}) can cross biological boundaries (entering the circulatory system) due to their extremely small size. Exposure to PM_{0.1} is associated with inflammation biomarkers, oxidative stress and cardiovascular disease.² Additional research documents the adverse health effects of aviation related ultrafine particles ranging from pre-term birth³ to toxicity assessments⁴. The EPA adopted a particle number based regulatory standard in the US for aircraft engines.⁵ Preliminary measurements already show that concentrations experienced by residents near Hanscom Field exceed WHO guidelines.⁶ We thus respectfully request that a comprehensive and accurate ESRP include a full assessment of PM_{0.1} emissions for aircraft operations departing from Hanscom Airport.

3. Lead pollution: We respectfully request that the ESRP section on lead pollution begin by acknowledging the EPA's recent endangerment finding in the first paragraph, rather than placing that important information at the end of the section. Please also acknowledge the EPA's statement that "major sources of lead in the air are ore and metals processing and piston-engine aircraft operating on leaded aviation fuel."⁷ Given that Hanscom Airfield is the largest general aviation airport in New England, it is highly likely that Hanscom Airfield is also the largest Massachusetts source of lead in the atmosphere, given the small amount of ore and metal processing in the state. This should also be acknowledged in the ESRP.

4. Future Scenarios: The draft ESRP presents scenarios anticipating increased operations by 2030 and 2040. However, those scenarios project considerably smaller growth than is currently being proposed by the proponents of the Hanscom Field North Airfield expansion.

The ESRP estimates that 160,000 square feet of hangar space is needed to meet demand in 2030 (page 4-25). The proposed Hanscom Field North Airfield expansion would build 500,000 square feet of new hangar space, not including the 60,000 square feet of jet hangar space currently under construction. This is 3.5 times the hangar space shown in the ESRP plan. The ESRP estimates 7,500 square feet of hangar space is required for each jet aircraft. Please amend the ESRP to reflect the expected noise and environmental impact of the additional 75 jet aircraft that will be based in those new hangars.

In Section 4.2.1, regarding North Airfield, we request that the ESRP be updated to state that Secretary Tepper has determined that the Draft Environmental Impact Report did not adequately and properly comply with the Massachusetts Environmental Policy Act and its implementing regulations. Please also update the ESRP to include a statement that the proponent has been required to submit a Supplemental Draft Environmental Impact Report to address the deficiencies in the DEIR.

Section 4.2.3 states that the lack of hangar space causes ferry flights. This assertion was rejected in Secretary Tepper's comments on the DEIR and by an independent 3rd party report. We request that the ESRP be amended to remove the statements regarding an expected reduction in ferry flights.

5. Air pollution measurement locations: The ESRP states that air quality measurements for Hanscom Airfield take place in Chelmsford (11 miles north of Hanscom) and Boston (14 miles southwest of Hanscom). It is not possible that air quality measurements taken so far away from Hanscom can in any meaningful way measure the actual air pollution emissions from Hanscom Airfield. We would request that Massport measure and report actual emissions on the airfield to validate the theoretically calculated emissions reported in the ESRP. The draft ESRP mentions that site specific monitoring for NO₂

was performed in 1995. Measurements conducted almost 30 years ago do not accurately reflect the conditions of today.

6. Sustainability: In Section 4.1 of the ESRP Massport states that it considers the State Sustainability Program Executive Order 438, issued July 23, 2002, as its guidance for sustainability initiatives. Please update the ESRP and Massport's procedures to include compliance with the many significant state climate and environmental legislative mandates and administration targets that have been adopted in the last 20 years.

Regarding electric aircraft, the draft ESRP states that "Massport predicts that up to 10 percent of the aircraft servicing Hanscom field may be electric powered by 2030, reducing the forecasted aircraft emissions for each criteria pollutant presented above."

This prediction is highly unlikely. Please remove this assumption from any calculations of forecasted aircraft emission reductions unless it is accompanied by current data showing viable electric aircraft certification and production schedules, and including the business plans from any aircraft operators at Hanscom Airfield that plan to purchase and operate at least 10% electric aircraft by 2030.

The current generation of battery technology will only allow for electric aircraft with quite limited range. This means electric aircraft would only be viable replacements for small piston aircraft. It is highly unlikely that any jet aircraft based at Hanscom Airfield will be replaced by electric aircraft by 2030.

7. Noise: We respectfully request that Massport update the ESRP to reflect the current science on the health impacts of noise.

The EPA states that noise pollution is "a growing danger to the health and welfare of the Nation's population." The Federal Noise Control Act declares that "it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare." The American Public Health Association defines noise as follows: "Noise is unwanted and/or harmful sound, first recognized as a public health hazard in 1968." According to World Health Organization (WHO) findings, noise is the second largest environmental cause of health problems, after the impact of air pollution (particulate matter).¹⁰

Please remove the ESRP statement "Sound pressure levels above 120 dB begin to be felt inside the human ear as discomfort." The EPA and World Health Organization have determined that noise levels must be less than 70 dBA to prevent hearing loss. According to the CDC, sound levels of 80 to 85 dB can create permanent hearing loss after 2 hours of exposure, sound levels of 95 dBA can create permanent hearing loss within 50 minutes of exposure, and sound levels of 100 dBA can create permanent hearing loss after just 15 minutes of exposure. The World Health Organization states that sound levels of 120 dBA can create permanent hearing loss after just 12 seconds of exposure. The WHO recommends sound pressure levels of less than 45 dB L_{den} for average noise exposure to aircraft noise and sound pressure levels of less than 40 dB L_{den} for night noise exposure to aircraft noise.¹⁰ 60 dBA is the maximum recommended exposure limit for babies, infants, and toddlers.¹¹


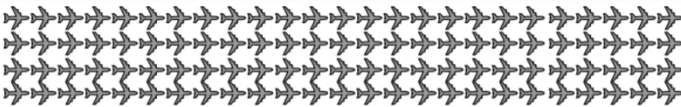
Research has shown that nighttime and early morning aviation noise that disrupts sleep is especially harmful to health. Particularly dramatic are studies demonstrating the link between night-time aviation noise and death from acute cardiovascular events.¹² This is particularly concerning given the rapidly

increasing numbers of nighttime jet operations. We request that Massport consider new initiatives to limit nighttime operations as the nighttime usage fee has been ineffective.

The 65 DNL metric used in the ESPR to define “residential compatibility” with aviation noise is now 50 years old and is 2-4 times louder than established safety levels.⁸

The Government Accountability Office (GAO) found that “...this metric does not provide a clear picture of the flight activity or noise levels at a given location.” “As a result, information on potential noise impacts FAA provided during outreach efforts—which was grounded in DNL—was not clear enough for communities to understand the planned changes.”

We respectfully request that the ESPR clearly communicate that the DNL 65 standard allows 100 jet flights per day at 94 dBA to overfly a residential neighborhood (as shown in this GAO graphic).⁹

Flights per day, by decibel (dB) level		Day-Night Average Sound Level
1 flight per day at 114.4 dB		65 dB
100 flights per day at 94.4 dB		65 dB

Source: GAO analysis of Federal Aviation Administration information. | GAO-22-105844

8. Housing: We request that any housing unit projections presented in the ESPR take into consideration the impact of the recently adopted MBTA Community Zoning in the surrounding communities. As one example, Table 4-4 of the ESPR projects that the number of housing units in Lexington will decline by 2030 and 2040. Lexington is currently reviewing proposals for over 1,100 new units of housing after just the first year of the MBTA Community Zoning. The amount of housing units in HATS towns is rising rapidly.

There are also two errors in Table 4-4 Housing Unit Projections:

- The MAPC 2030 column shows the numbers of housing units as 5,595 + 7,177 + 12,066 + 2,777 which equals 27,615 housing units – not the total shown of 29,195 housing units.
- The MAPC 2040 column shows the numbers of housing units as 5,650 + 7,274 + 12,121 + 2,803 which equals 27,848 housing units – not the total shown of 31,608 housing units.

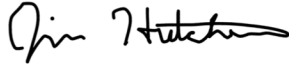
9. Conclusion: Our towns have been diligently working hand-in-hand with the State government to achieve our greenhouse gas emission reduction targets. The Commonwealth should require that the full impact of aircraft operations at Hanscom Airfield be considered, as we believe those emissions directly impact the ability of our towns, the Commonwealth, and the nation to meet its climate and health goals.

We respectfully request your support in updating the ESPR to address these concerns, emphasizing the urgent need for all sectors, in all locations, to work collaboratively towards reducing CO₂ emissions and meeting our critical climate, health, and environmental goals.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Mark Sandeen". The signature is fluid and cursive, with a prominent loop at the end.

Mark Sandeen
Town of Lexington Select Board Member
Chair, Hanscom Area Towns Committee

A handwritten signature in black ink, appearing to read "Jim Hutchinson". The signature is cursive and somewhat stylized.

Jim Hutchinson
Town of Lincoln Select Board Member
Member, Hanscom Area Towns Committee

A handwritten signature in blue ink, appearing to read "Emily Mitchell". The signature is cursive and elegant.

Emily Mitchell
Town of Bedford Select Board Member
Member, Hanscom Area Towns Committee

A handwritten signature in black ink, appearing to read "Terri Ackerman". The signature is cursive and somewhat stylized.

Terri Ackerman
Town of Concord Select Board Member
Member, Hanscom Area Towns Committee

Footnotes:

1. **Aviation-Related Impacts on Ultrafine Particle Number Concentrations Outside and Inside Residences near an Airport**
N. Hudda, M.C. Simon, W. Zamore, and J. L. Durant
Environmental Science & Technology **2018** 52 (4), 1765-1772
DOI: 10.1021/acs.est.7b05593 <https://www.sciencedirect.com/science/article/pii/S0360132322002347>
2. Schraufnagel, D.E. **The health effects of ultrafine particles.** *Exp Mol Med* **52**, 311–317 (2020). <https://doi.org/10.1038/s12276-020-0403-3>
3. Wing SE, Larson TV, Hudda N, Boonyarattaphan S, Fruin S, Ritz B. **Preterm Birth among Infants Exposed to *in Utero* Ultrafine Particles from Aircraft Emissions.** *Environ Health Perspect.* 2020 Apr;128(4):47002. doi: 10.1289/EHP5732. Epub 2020 Apr 2. PMID: 32238012; PMCID: PMC7228090. <https://pubmed.ncbi.nlm.nih.gov/32238012/>
4. Hulda R. Jonsdottir, Mathilde Delaval, Zaira Leni, Alejandro Keller, Benjamin T. Brem, Frithjof Siegerist, David Schönenberger, Lukas Durdina, Miriam Elser, Heinz Burtcher, Anthi Liatj, Marianne Geiser. **Non-volatile particle emissions from aircraft turbine engines at ground-idle induce oxidative stress in bronchial cells.** *Communications Biology*, 2019; 2 (1) DOI: [10.1038/s42003-019-0332-7](https://doi.org/10.1038/s42003-019-0332-7)
<https://pubmed.ncbi.nlm.nih.gov/30854482/>
5. <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-aircraft-engines>
6. <https://www.ncbi.nlm.nih.gov/books/NBK574595/box/ch4.box15/?report=objectonly>
7. <https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution#how>
8. <https://www.icben.org/2023/presenting181.pdf>
9. GAO-22-105844 <https://www.gao.gov/assets/720/719569.pdf>
10. https://cdn.who.int/media/docs/default-source/who-compendium-on-health-and-environment/who_compendium_noise_01042022.pdf?sfvrsn=bc371498_3
11. Center for Disease Control and Prevention (2022) - https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html
12. Nighttime Aircraft Noise Triggers Cardiovascular Death - <https://academic.oup.com/eurheartj/article/42/8/844/6046141>

CC:

Richard Davey, CEO, Massport

Amber Goodspeed, Massport

Michael Vatalaro, Massport

Melissa Hoffer, Climate Chief, Office of Climate Innovation and Resilience

Sen. Michael J. Barrett

Sen. Cindy F. Friedman

Rep. Michelle L. Ciccolo

Rep. Kenneth I. Gordon

Rep. Alice H. Peisch

Rep. Simon J. Cataldo

Rep. Carmine L. Gentile

Rep. Thomas M. Stanley

Senator Elizabeth Warren

Senator Edward Markey

Congresswoman Katherine M. Clark

Congresswoman Lori A. Trahan

Congressman Seth W. Moulton

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